Australian Government

Department of the Environment

Water Recovery Strategy for the Murray-Darling Basin

June 2014

Cover: The Paroo River (Andrew Tattnel)
Back Cover: Murrumbidgee North Redbank Feb 2012 (Simon Banks CEWO)

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Overview of the Murray River at Mannum (John Baker)

Foreword

The Australian Coalition Government is committed to implementing the Murray-Darling Basin Plan, on time and in full.

Water policy has developed significantly over the past decade since 2004 when the Howard Government, with the states, secured agreement for a national framework for water reform.

The Howard Government's *Water Act 2007* was based on the principles and requirements of the National Water Initiative, making the development of the Murray-Darling Basin Plan a possibility, and its path to implementation a reality.

The Basin Plan grew out of a strong vision for water reform and is the basis for agreement and cooperation about the sustainable sharing of water resources between the states and between the environment and consumptive use.

It has been over a year since the Basin Plan became law, marking an historic milestone in the management of Australia's biggest river system.

To return the river system to health, the Basin Plan requires recovery of 2750 gigalitres of surface water for the environment. Over two thirds of this water has already been contracted for recovery through investment in more efficient irrigation infrastructure and water buybacks, allowing average annual diversions of 10,873 gigalitres.

This Water Recovery Strategy outlines how the Australian Government will recover the rest of the water for the environment, whilst maximising positive outcomes for farmers and communities.

Under this Strategy the Government will prioritise environmental water recovery through infrastructure investment over water buybacks, with over $2.3 billion forecast to be spent on rural water use and infrastructure projects.

As we committed, the Abbott Government has placed a cap on water buybacks at 1500 gigalitres and re-phased spending on water buybacks over six years, rather than four.

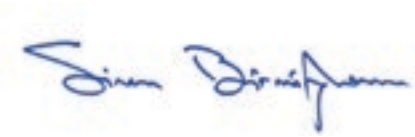
With these measures in place, water buybacks will no longer be the main focus for water recovery. Purchasing will progress at a significantly slower and more predictable pace with the Government's focus on strategic and targeted initiatives.

A key priority for the Australian Government is to ensure the Murray-Darling Basin remains Australia's primary food bowl. Our Government is committed to ensuring that Australian farmers produce as much food and fibre as is sustainably achievable for the Australian people, and for export to the world.

Irrigation infrastructure upgrades, and the smarter and more efficient use of water resources are central to achieving the best productive outcomes from the Australian Government's investment in the Basin Plan.

The details of the water purchasing programme, the outcomes we expect from infrastructure works and how this will work in conjunction with the legislated adjustment of the Sustainable Diversion Limits in 2016, is set out in this Strategy document. It is the first time that all of these elements of the water recovery story have been brought together in a coherent way to inform communities that live in the Basin.

Together we can implement these reforms in a way that delivers the best outcomes for both our rivers and the communities that rely upon them, to ensure that they are able to withstand the tests of the next one hundred years.



Senator the Hon Simon Birmingham
Parliamentary Secretary to the
Minister for the Environment

Royal spoonbill (Nigel Evans, Dept of the Environment)

Overview

The Australian Government is committed to ensuring that water resources in the Murray-Darling Basin are managed in a way that is sustainable into the future and the Basin Plan is implemented in a way that achieves good outcomes for the environment and communities, whilst delivering value for money.

Under this Strategy, the Australian Government will prioritise water recovery for environmental purposes through infrastructure investment over water buybacks.

The *Murray-Darling Basin Plan 2012*, agreed by the Australian Parliament in November 2012, specifies the sustainable level of diversions and extractions from surface and ground water resources to ensure the ongoing health and resilience of the environment. The Basin Plan requires that diversions and extractions are to be reduced to sustainable levels by 2019.

To implement the required level of diversions and extractions without risks to property rights, the Australian Government has committed to 'bridge the gap' by securing water entitlements for environmental use.

The target for surface water recovery under the Basin Plan, or the volume of the 'gap', is 2750 gigalitres; however there is flexibility built into the Basin Plan to account for actions which enable environmental outcomes to be achieved with less environmental water or without economic detriment. This is called the Sustainable Diversion Limit (SDL) Adjustment Mechanism which will be triggered by 2016, with works to be completed by 2024.

The Australian Government has already recovered over two thirds of the 2750 gigalitre surface water recovery target to bridge the gap to the SDLs, through water purchases, contracted infrastructure investments, and other state and federal recoveries.

The priority for future recovery of water will be through infrastructure investment, which helps strengthen Basin communities and industry while delivering the Basin Plan's environmental outcomes. Over the next four years the Australian Government will spend over $2.3 billion on infrastructure in the Murray-Darling Basin.

The Australian Government has also placed a 1500 gigalitre cap on surface water buybacks in the Basin and has re-phased spending on buybacks over six years rather than four years, to meet the commitment made to communities and industry to implement the Basin Plan in a way that would minimise the impact on Basin communities.

The focus of remaining water purchasing will be on recovery of relatively small volumes through high priority, strategically important initiatives. The focus of new buybacks and new infrastructure will be on those areas where a gap remains to be bridged.

This Water Recovery Strategy assumes the operation of the SDL Adjustment Mechanism in 2016 will achieve the full outcomes intended by Basin jurisdictions. After 2016 the Strategy will be updated to take account of developments up to that point and to set the final course for bridging the adjusted gap by 2019. The diagram below shows the key steps in the process to implement the SDLs.

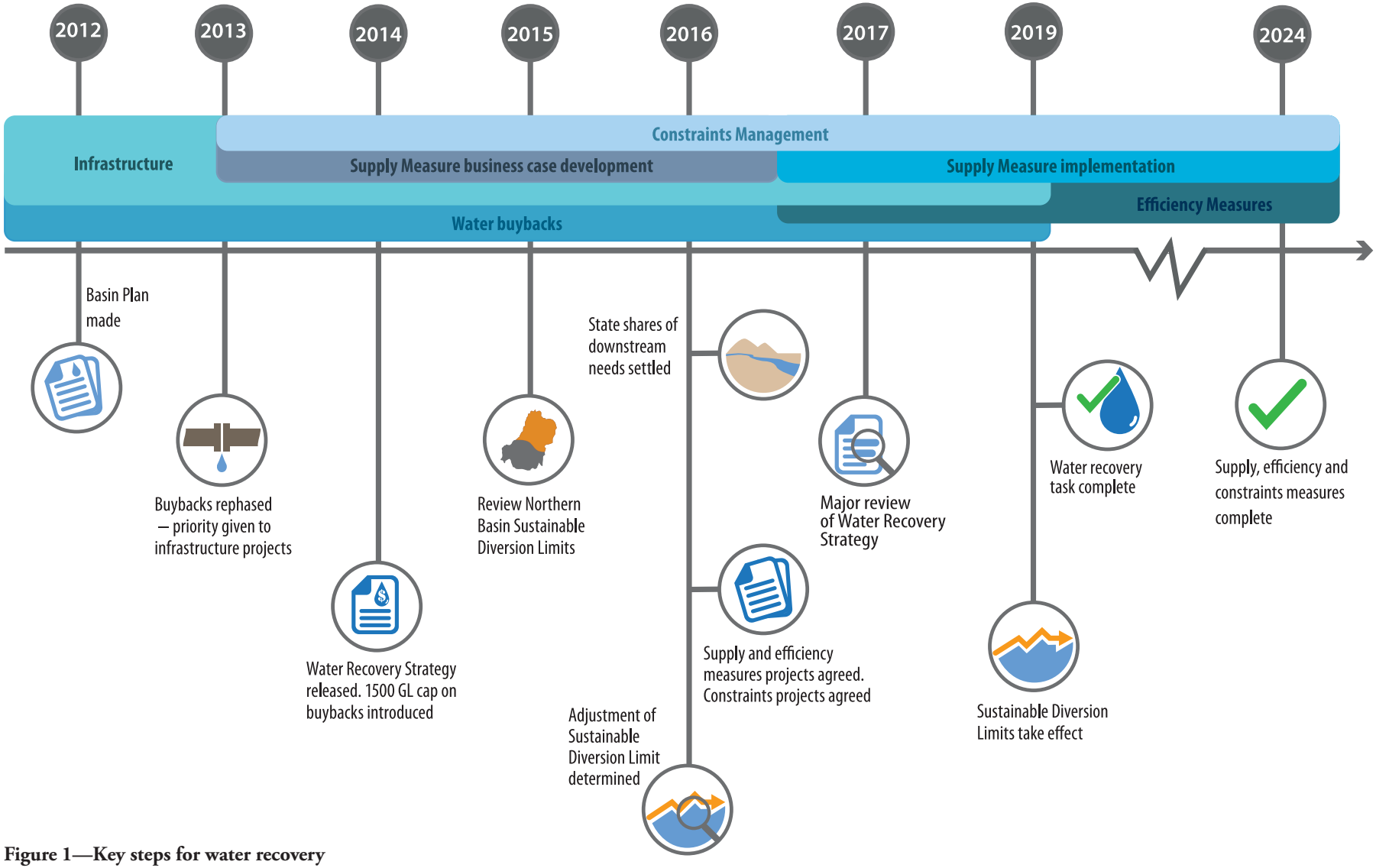


Figure 1—Key steps for water recovery

What is the reason for water reform in the Murray-Darling Basin?

The underlying objective of the reform, as expressed in the Howard Government's National Plan for Water Security, is to ensure water use is placed on a sustainable footing. In the case of the Murray-Darling Basin, the Government's objective has been to put the MDB back on a sustainable track, significantly improving the health of rivers and wetlands of the Basin, while maximising the benefits for irrigators and the community. The National Plan for Water Security also provides for decisions that are made on these matters with a Basin-wide perspective.

The Council of Australian Governments agreed to a water reform framework in 1994 in recognition that better management of Australia's water resources was a national issue. The activities progressed under the auspices of the water reform framework culminated in the development of the Intergovernmental Agreement on a National Water Initiative (the NWI) in 2004 "*in recognition of the continuing national imperative to increase the productivity and efficiency of Australia's water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems by establishing clear pathways to return all systems to environmentally sustainable levels of extraction*."

A second intergovernmental agreement on water reform was ratified by all Murray-Darling Basin States in 2008 to further progress the NWI, and to enhance cooperation in the planning and management of the Basin's water resources.

There is a significant body of work underpinning water reform activities in the Murray-Darling Basin; however the foundation documents are the NWI, the *Water Act 2007*, and the Basin Plan. The intention has been to settle the long-standing issues about sharing water resources, to provide communities with certainty and ensure the ongoing health of the environment.

The NWI is a shared commitment by governments to increase the overall efficiency of Australia's water use, and to give greater certainty for rural and urban communities, and for the environment, by underpinning investment and productivity.

Under this framework, governments committed to:

- prepare comprehensive water plans
- achieve sustainable water use in over-allocated or stressed water systems
- introduce registers of water rights and standards for water accounting
- expand trade in water rights
- improve pricing for water storage and delivery
- better manage urban water demands.

The Water Act and the subsequent Basin Plan provide a coordinated approach to water use and management across the Basin's four states and the Australian Capital

Territory. The Basin Plan, which became law in November 2012, is designed to bring about:

- sustainable Basin-wide water planning under accredited state water resource plans
- an environmental watering plan to optimise the environmental outcomes for the Basin
- a water quality and salinity management plan
- a mechanism to manage critical human water needs
- rules for water trading
- an approach to monitoring and evaluating the effectiveness of the Basin Plan.

The Australian Government has invested significant resources in support of the implementation of the NWI and the Basin Plan. In 2007, the Howard Government committed $10 billion over ten years under the National Plan for Water Security to facilitate the implementation of the NWI.

A diverse programme of initiatives was established under this National Plan encompassing water resource assessments, investments in water information, metering, and fundamental changes to the Commonwealth-State governance arrangements for water resource management. In addition, the National Plan first established the water purchase programme and the substantial commitment to improving the efficiency of on- and off- farm irrigation infrastructure, particularly within the Murray-Darling Basin, but also including significant investments in Tasmania and Western Australia.

Since 2002, the Commonwealth has committed over $15 billion towards water reform and irrigation efficiency improvements. A summary table showing these investments is provided at Annexure A including links to a series of maps showing significant Commonwealth projects.

Over $10 billion of this water reform investment has been delivered through the Sustainable Rural Water Use and Infrastructure Program and, to date, $6.6 billion of this funding is targeted towards infrastructure and supply measures projects. Further details of these investments can be viewed at **www.environment.gov.au/water/rural-water/sustainable-rural-water-use-and-infrastructure.**

Environmental flow release at Broken Creek in Victoria (Andrew Tattnel)

What is the purpose of this Water Recovery Strategy?

This Water Recovery Strategy sets out the Australian Government's approach to environmental water recovery in the Murray-Darling Basin. It outlines how the Australian Government will deliver its commitment to bridge the gap in a way that restores the Basin environment to health, while delivering a positive outcome for the economy and for Basin communities.

With this Water Recovery Strategy the Australian Government is seeking to:

- inform the public about the course of water recovery so that communities have certainty, allowing people to plan and invest
- achieve the reduction in diversions consistent with the Basin Plan by 30 June 2019, to provide for healthy and resilient ecosystems with rivers and creeks regularly connected to their floodplains and, ultimately, with good connectivity to the mouth of the river system
- deliver the best productive outcomes from the Australian Government's investment in water saving infrastructure
- support the long term viability of irrigation communities to provide them with confidence in their future.

The water recovery task has four major milestone points ahead:

- by the end of 2015, the northern Basin review will be completed and recommendations on the size of the reduction target in surface and groundwater systems and the apportionment of the shared reduction target will be considered
- in 2016 the SDL Adjustment Mechanism will come into operation and set the final volume and States will determine the geographical distribution of the water recovery task
- In 2019 the gap to the adjusted SDLs will be bridged, as committed to by the Commonwealth Government
- In 2024 the 'supply and efficiency' measures and constraints projects approved in the SDL Adjustment Mechanism are to be completed.

What are the environmental water requirements in the Basin Plan?

The Basin Plan outlines how long run average surface water diversions and ground water extractions will be adjusted to ensure the health of the environment. The target for surface water recovery for the environment under the Basin Plan is 2750 gigalitres, however, there is flexibility built into the Basin Plan to account for equivalent environmental outcomes that can be achieved with less water, and also to achieve better environmental outcomes if there is no socio-economic detriment.

The Basin Plan requires diversions from the surface water resources of the Basin to be reduced by 2750 gigalitres to meet the SDLs.[1] While most groundwater extractions in the Murray-Darling Basin are either at the SDL or underutilised, the Basin Plan requires groundwater extractions in the Queensland Upper Condamine Alluvium to be reduced by 40.4 gigalitres to meet the SDL for this resource.[2] Further detail on Queensland Groundwater is at Annexure J.

Local and shared component

The Basin Plan presents the reduction in surface water diversions in two parts: a 'local' component to provide for environmental needs within each catchment and a shared 'downstream' component to ensure the overall health of the Barwon-Darling River system in the north, and the Murray River system in the south[3].

The local component of the surface water SDL reduction totals 1636 gigalitres across the Basin. The shared component of the surface water SDL reduction is 971 gigalitres in the southern Basin and 143 gigalitres in the northern Basin.

The Basin Plan apportions the southern Basin's shared component of the SDL reductions to the state level based on each jurisdiction's share of average surface water baseline diversions (less interceptions) as per Table 1. In mid-2016 each state will have the opportunity to nominate how they intend the state's contribution to the shared reduction amount to be apportioned between the catchments in their state. This will be incorporated into the Basin Plan after 30 June 2016.

1 See Schedule 2 of the Basin Plan at **mdba.gov.au/what-we-do/basin-plan**

2 Schedule 4 of the Basin Plan.

3 Chapter 6 of the Basin Plan.

Table 1: Southern Basin SDL shared component (gigalitres)—apportionment as per the Basin Plan	
Victoria	425.3
New South Wales	458
South Australia	82.8
Australian Capital Territory	4.9
Total	971

In the northern Basin, the New South Wales and Queensland governments will need to jointly resolve the allocation of the shared reduction amount to individual catchments and will be informed by the northern Basin review due to be completed by the end of 2015. This advice must be provided to the Murray-Darling Basin Authority by 30 June 2016.

If the states do not apportion the shared reduction amount between catchments, then the default apportionment approach, based on each catchment's share of the baseline diversions less interceptions as set out in Chapter 6 of the Basin Plan, will apply.

The volume of the northern Basin shared reduction amount may also be affected by the current Northern Basin Work Program. This programme is examining the Basin Plan's northern Basin recommendations, and the potential need for targeted water recovery. The Northern Basin programme will also investigate the apportionment of the shared reduction across contributing catchments, which may assist state government decisions in determining this apportionment.

The community-based Northern Basin Advisory Committee was established in 2013 to work with the Authority on the development and implementation of this work programme. This work is scheduled to be completed by the end of 2015 and will provide specific information to guide future water recovery in the northern Basin.

The Basin Plan also includes an SDL Adjustment Mechanism that allows for flexibility in the SDL, by accounting for actions through more efficient use of environmental water, which enables environmental outcomes to be achieved with less water, or for providing better environmental outcomes without economic detriment.

Further information about how the SDL Adjustment Mechanism works and how it is being implemented is included later in this Strategy.

What is the Australian Government's approach to future water recovery?

The Australian Government is committed to recovering water in a way that achieves good outcomes for both the environment and communities, while delivering value for money. Over the coming years, the Australian Government will prioritise water recovery for environmental purposes through infrastructure investment over water buybacks.

Prioritising infrastructure investments

The Australian Government is giving priority to investment in water saving infrastructure projects over buybacks as a means of returning water to the environment, with over $2.3 billion forecast to be spent over the next four years.

The Australian Government's investment in these projects reflects a broader range of factors in determining value for money, such as the contribution these projects make to the long-term productivity of irrigated agriculture and strengthening regional communities. The commitment to prioritise water recovery through infrastructure projects brings with it the need to achieve good water recovery from these investments.

The majority of the funds dedicated to infrastructure projects are already committed to specific programmes and projects, and the largest portion of funding is directed to projects in the Basin. This funding supports a range of investments in rural water use, management, and efficiency; with the main emphasis being on projects to improve the operation of off-farm delivery systems and helping irrigators improve on-farm water use efficiency. A map showing the distribution of investments is at Figure 2.

Irrigated crops on the Murray River **(Arthur Mostead, Department of the Environment)**

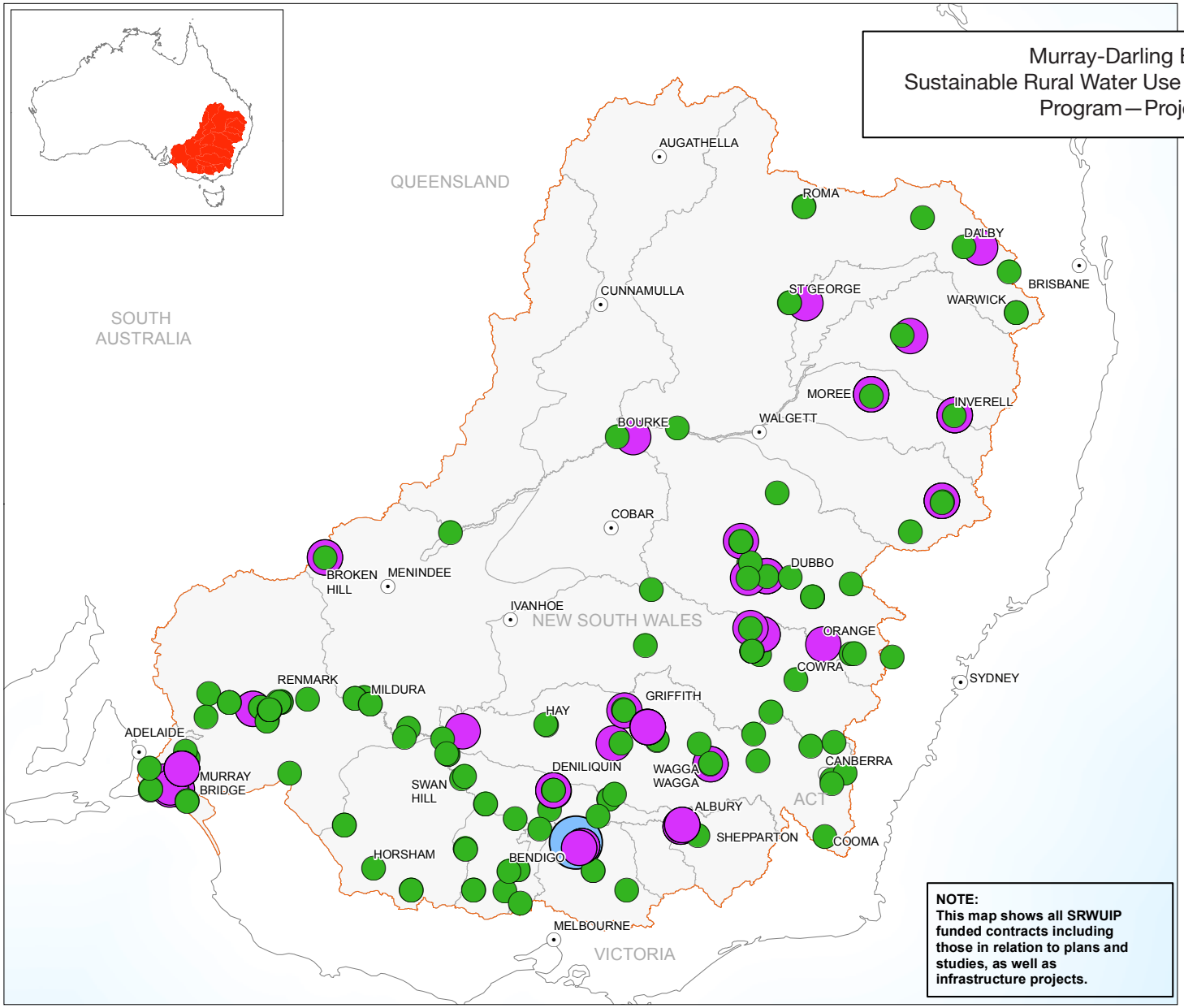


Figure 2—Location of major infrastructure investments across the Basin.

A key priority over the next few years is working with states and other project proponents to ensure that project outcomes, including delivery of agreed water savings for the environment, are achieved.

The main focus for investment of the remaining unallocated infrastructure funds will be on water saving infrastructure in the Basin catchments where further recovery is needed to meet the local component and/or the shared downstream component of the reduction in diversions.

The total water recovery from current and planned infrastructure investments under the Sustainable Rural Water Use and Infrastructure Program is expected to yield in excess of 600 gigalitres. An additional 36 gigalitres of water recovery will also be delivered under the South Australian River Murray Sustainability Program, which is funded separately to the Sustainable Rural Water Use and Infrastructure Program.

The Australian Government is working with Basin jurisdictions and key stakeholders to consider ways to maximise water savings that are made through existing and proposed infrastructure projects. A larger water return from the current and future infrastructure investments will reduce the scale of further water buybacks.

A list of the major infrastructure projects that are being funded by the Australian Government is in Table 3. The current and forecast water savings being returned to the Australian Government from these projects is also presented.

The 'market multiple' is the cost of water yield to the Australian Government compared with the prevailing market price for the same entitlement at the time of the project approval. On-farm irrigation upgrades generally yield water savings at a market multiple of between 2.0 and 2.5, whereas delivery system modernisation projects are usually more expensive in terms of the relative cost of the water savings.

Further information about these and other projects funded by the Australian Government that are increasing water use efficiency in rural and regional Australia can be found at **www.environment.gov.au/water/policy-programs/srwui/index.html**

Centre Pivot irrigator in use (Andrew Tattnel)

Table 3: Major infrastructure projects funded by the Australian Government (GL)				
State	**Programme/Project**	**Contracted ($m)**	**Water recovery towards Bridging the Gap (GL LTAAY)**	**Market Multiple**
NSW	SPP[1]—NSW—Private Irrigation Infrastructure Operators Program (PIIOP)	642	**113**	2.4
	SPP—NSW Water Metering Scheme (Pilot Project)	22	**4**	3.5
	SPP—NSW Water Metering Scheme (excluding pilot)	199	**28**	2.3
	SPP—NSW Basin Pipes (Stock and Domestic)	137	**30**	2.5
	SPP—Irrigated Farm Modernisation (Border Rivers-Gwydir Pilot Project)	7	**0.5**	2.3
	SPP—Irrigated Farm Modernisation Project	85	**12**	2.5
	Nimmie Caira Enhanced Environmental Water Delivery Project	180	**133**	2.4
Qld	SPP—On Farm Water Use Efficiency Project (Healthy Headwaters)—rounds under contract to date	51	**7**	2.0
Vic	SPP—NVIRP Stage 2 Project (now known as Goulburn-Murray Water Connections Project Stage 2)	956	**102**	4.9
	SPP—NVIRP on-farm component	44	**10**	2.3
	Victorian Farm Modernisation Project (assuming all three tranches proceed)	100	**30**	1.9
	Sunraysia Modernisation Project	103	**7**	7.1
SA	SPP—SA Private Irrigation Infrastructure Program (PIIP-SA)	14	**3**	2.6
	South Australian River Murray Sustainability Program (SARMSP)—irrigation efficiency component[2]	80	**16.8**	2.5
Southern Basin	On-Farm Irrigation Efficiency Program—including pilot projects and first three rounds under contract.	296	**83**	2.3
Total 'bridging the gap' infrastructure water recovery[3]			**560[4]**	

Notes

1 SPP = State Priority Project—funds for which were committed under the 2008 Intergovernmental Agreement on Murray-Darling Basin Reform.

2 SARMSP is funded separately from SRWUIP.

3 'Bridging the gap' water recovery from infrastructure investments is reported at the point at which water savings have been received, estimated or agreed in signed project works contracts. Until water transfer contracts have been exchanged however, these figures may be subject to change. The recovery volume is shown in gigalitres (GL) and expressed as long term average annual yield (LTAAY)), and is subject to rounding.

4 A further 17 gigalitres of Disconnected Basin (Lachlan River) water has been recovered through infrastructure initiatives but is not 'gap bridging'.

Alongside our commitment to a focus on infrastructure over buyback as a means of implementing the Basin Plan, the Australian Government has a strong focus on value-for-money. With the scale of the task to bridge the gap by 2019, through projects with a higher market multiple than straight buyback, the importance of every dollar allocated to water recovery is paramount.

Under this Strategy, the Australian Government will only consider projects that assist in meeting Basin Plan targets and provide strong value for money when it allocates remaining water recovery funds. The Australian Government will have an appropriate level of regard to value-for-money, while maintaining our commitment to implement the Basin Plan in a way that does not undermine the productive capacity of Basin communities and industries.

Placing a 1500 gigalitre cap and re-phasing of buyback funding

The Australian Government has introduced a 1500 gigalitre cap on surface water buybacks to address community and industry stakeholder concerns over the potential adverse social and economic impacts on irrigation dependent communities that may arise from water purchases. The cap will be applied at the Basin wide scale and will apply to all surface water purchases, with the exception of purchases from state governments or those integrated with infrastructure rationalisation or reconfigurations that occur after the release of this Strategy. As explained in the following section it is expected that the total buyback required to bridge the gap will be significantly less than the 1500 gigalitre cap.

In 2013 the Australian Government re-phased spending on water buybacks over six years rather than four years. Water buybacks will progress at a significantly slower pace to 2016–17 as shown in Table 4. Purchases during that time will be limited to a very modest volume of high priority water purchase initiatives. Re-phasing buyback expenditure will enable the Australian Government in 2016 to take into account the outcomes from its investments in water saving infrastructure, and the volume of SDL adjustments from supply measure projects, before planning the final phase of water recovery activity through to 2019.

Table 4: Expenditure profile Sustainable Rural Water Use and Infrastructure Program ($'m)

	07–08	08–09	09–10	10–11	11–12	12–13	13–14	14–15	15–16	16–17	17–18
Contracted Water Purchases[1]	33	372	780	358	541	113	59	45	49	68	22
New Water Purchase Initiatives[2]								15	15	15	413
Supply Measures									50	76	150
Infrastructure Projects	122	63	214	226	563	566	553	699	787	507	348
Total	155	435	994	584	1,104	679	612	759	901	666	933

Notes

1 Includes purchases under the October 2011 Heads of Agreement between the Australian and Victorian Governments.

2 This figure includes both surface water and groundwater purchases. The increase in 2017–18 expenditure is a result of the re-profiling of water purchasing funds from four years to six. The actual amount spent on purchases in 2017–18 will depend on the outcome of the SDL Adjustment Mechanism in 2016.

Undertaking water purchase initiatives

The Australian Government will focus on strategically important water purchases, which will occur either in areas where there is a remaining gap to be bridged to the SDLs, or where aligned with irrigation delivery system reconfiguration or rationalisation.

In response to requests from the Queensland Government and industry stakeholders, groundwater purchasing has also commenced in the Queensland Upper Condamine Alluvium. This will enable progress to be made towards the long term protection of the productive base of this groundwater resource.

To enhance outcomes from the Goulburn-Murray Water Connections Project (the Connections Project), the Australian Government will continue with the Strategic Water Purchase Initiative in Victoria in collaboration with the Victorian Government. Through this initiative the Australian Government will make water purchases that are aligned with the decommissioning of irrigation channels through the Connections Project. The initiative will run through to 2016.

The Australian Government may also consider other small and orderly water purchase opportunities from 2014 to 2016 where they are consistent with the Government's stated priorities, clearly contribute to bridging the gap and represent value for money. Specifically, these will occur in the Queensland Condamine-Balonne and southern New South Wales catchments, where a larger requirement to bridge the gap remains.

Purchases under the State Sale Framework

In 2011 the Australian Government established arrangements to enable State Governments to sell gap bridging water to the Commonwealth through the water purchase programme to provide a mechanism to broaden the scope for strategic water purchases and increase flexibility in how the SDL could be met.

In addition to the meeting the eligibility criteria in the State Sale Framework, the Australian Government has also established a policy position that a State Government cannot offer water entitlements under the Framework unless these entitlements have been accounted for consistent with the relevant arrangements of the Murray-Darling Basin Agreement under the *Water Act 2007*.

Water purchase initiatives in 2014–15

Water purchase initiatives in the 2014–15 financial year will be conducted in the following four regions:

- in the Queensland Condamine-Balonne catchment, where around half of the water recovery needed to meet local environmental needs still remains to be done
- in Victoria where a strategic purchasing initiative will continue in conjunction with the Goulburn-Murray Water Connections Project
- in the southern New South Wales connected catchments, where a requirement for purchasing remains to bridge the gap to the SDLs, even after the water return from the Government's substantial infrastructure investments and SDL adjustments expected from supply measures are taken into account
- in the Queensland Central Condamine Alluvium groundwater source, where a large amount of water recovery is needed to bridge the gap to the SDLs.

Further information about water purchasing initiatives as they are announced is available at: **www.environment.gov.au/topics/water/rural-water/restoring-balance-murray-darling-basin**

Goulburn Weir (John Baker)

How much water has been recovered to date?

Governments have already recovered, or committed to recover, more than two thirds of the 2750 gigalitres surface water recovery target set out in the Basin Plan to bridge the gap to the SDLs.

As at 30 April 2014, 1900 gigalitres of the 2750 gigalitres had been secured through Commonwealth and state environmental water recovery programmes. Of this, 543 gigalitres of surface water had been contracted under infrastructure works. An additional 36 gigalitres of water recovery will also be delivered under the South Australian River Murray Sustainability Program. State recoveries and transfers from Queensland to the Commonwealth contributed 166 gigalitres and 11 gigalitres respectively and water recovered through purchase contributed 1142 gigalitres.

What is the remaining water recovery effort?

The remaining water recovery effort will be largely dependent on the outcomes of the SDL adjustment mechanism, which enables SDLs to be adjusted as a result of projects which increase the supply of water (supply measures) or efficiency of water use (efficiency measures), with any adjustment limited to no more than five per cent of the total Basin SDL. Within this provision, Basin state governments consider that there could be enough supply measures to reduce water recovery efforts by as much as 650 gigalitres.

If the full potential of supply measure adjustments is realised, the remaining recoveries required to bridge the gap would be approximately 200 gigalitres, which will be acquired from a mix of infrastructure and targeted purchase initiatives. The current and projected buyback would then be around 1300 gigalitres, well within the Government's 1500 gigalitre cap. The volume of buyback may reduce further if infrastructure investments return higher volumes.

Following the operation of the SDL Adjustment Mechanism and the apportionment of the shared component, and when actual infrastructure recoveries are known, some rebalancing of the water portfolio may be required to ensure the gap is met in each catchment. The current projections for recoveries in each jurisdiction are presented at Annexures C–J.

When the shared SDL reduction apportionment for both the northern and southern basins is decided and the actual SDLs for each basin catchment are known in 2016, the Strategy will be updated to identify where the remaining water to bridge the gap is to be recovered.

Table 5: Progress of environmental water recovery as at 30 April 2014[1] (gigalitres)	
Water recovery through infrastructure investment[2]	543
Water purchases	1142
State government environmental water[3]	166
Transfers from Queensland Government	11
Other Commonwealth programmes[4]	38
TOTAL WATER RECOVERY TOWARDS BRIDGING THE GAP[5]	1900
Percentage of recovery towards the 2750 gigalitre gap	69%

Notes

1 All water recovery numbers are expressed in Long Term Average Annual Yield and subject to rounding.

2 Water recovery is recorded as being secured for infrastructure projects at the point when a works contract has been signed for the project.

3 See Annexure B for programme details.

4 Including 36 GL for the South Australian River Murray Sustainability Program and 2 GL for the Moulamein Irrigator-Led Group Proposal.

5 This balance is constantly monitored and adjusted as actual infrastructure recoveries are confirmed.

The progress of environmental water recovery is regularly reported on the Authority's website at **www.mdba.gov.au/what-we-do/water-planning/sdl/water-recovery-progress**

Monthly updates are also available on the Department of the Environment's website at **www.environment.gov.au/water/basin-plan/progress.html**

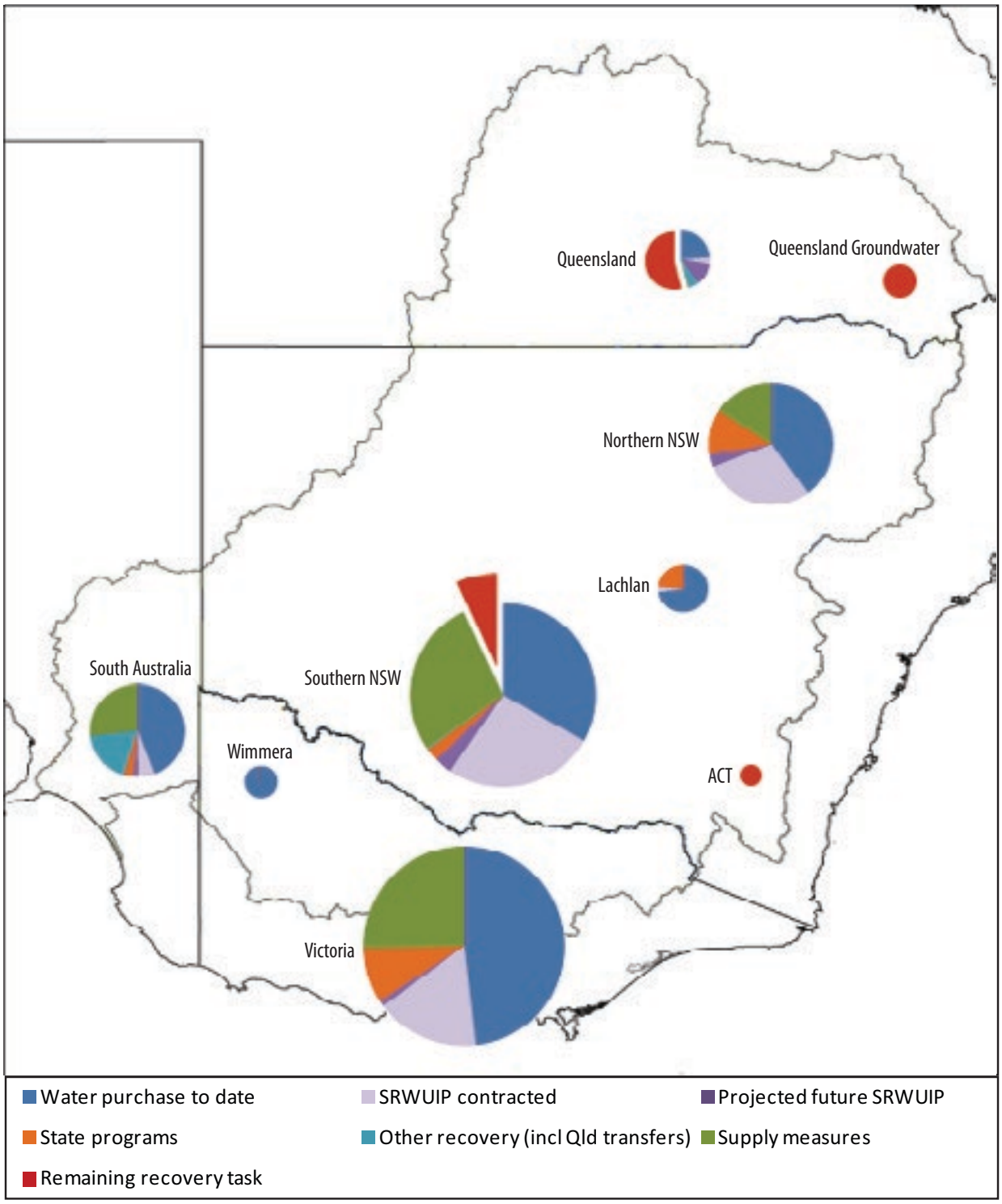


Figure 3—Expected water recovery composition across the Basin

Note: This representation assumes full delivery of 650 gigalitres of Supply Measures towards a 2750 GL SDL reduction. Achieving this full potential would require an associated water recovery from Efficiency Measures, within a five per cent limit on SDL adjustments. The adjustment volume attributable to Supply Measures will be determined in 2016.

Corn corp and irrigation channel (Andrew Tattnel)

How does the SDL Adjustment Mechanism work?

The SDL Adjustment Mechanism set out in the Basin Plan adds flexibility by allowing the environmental outcomes sought by the Basin Plan to be achieved through more efficient use of environmental water. It also provides for improved environmental outcomes to be achieved through the recovery of additional water providing that water can be recovered in ways that have neutral or beneficial social and economic impacts on communities.

Any change to the SDLs through the Adjustment Mechanism must either maintain or improve social, economic and environmental outcomes set out in the Basin Plan[4]. As discussed in the previous section, the Basin Plan also specifies that, overall, the SDL for Basin water resources cannot be adjusted by more than plus or minus five per cent.

SDL adjustments can be achieved in two ways, through supply measures or efficiency measures.

Constraints management measures that relax or remove constraints to water movement through the regulated system are also discussed here. Agreement by Basin jurisdictions to constraints measures will need to precede the agreement to supply and efficiency measures. Constraints measures will be important for securing improved environmental benefits from the use of held environmental water and may affect the results of supply measures.

Supply measures

'Supply measures' are actions such as environmental works or changes to river operation rules that enable the use of less water while achieving equivalent environmental outcomes to the modelled outcomes for the 2750 gigalitres recovery target under the Basin Plan. Supply measures offset the need for water to be acquired through recovery programmes and held for environmental use.

An increase in the SDLs made possible by supply measures is referred to in the Basin Plan as a supply contribution. The Authority will share the supply contribution between individual catchments in a way which complies with any agreement relating to the apportionment of supply contributions that has been reached by the Commonwealth and the States.

Examples of supply measures include:

- reducing the quantity of water required to deliver water at a particular place, whether for purposes of consumptive use or for environmental use;

4 see Chapter 7 of the Basin Plan.

- changing the methods of environmental watering in such a way that equivalent environmental outcomes can be achieved with a smaller quantity of water than was required under the benchmark conditions of development; and
- re-configuring suitable lakes or storage systems to reduce evaporative losses.

Further information about supply measures projects can be found at **www.mdba.gov.au/what-we-do/water-planning/sdl/proposals**

Efficiency measures

'Efficiency measures' are projects that recover additional water for the environment with neutral or beneficial social and economic impacts, such as through improved on-farm water use efficiency projects. Efficiency measures projects would be used to recover any water above the 2750 gigalitres needed to meet an adjusted SDL. These projects must do so without causing additional social and economic impacts from the overall decrease in the volume of water available for consumptive use.

Some examples of efficiency measures include:

- replacing or upgrading less efficient methods of on-farm irrigation; and
- lining channels to reduce water losses within an irrigation network.

Further information about efficiency measures is available at **www.mdba.gov.au/what-we-do/water-planning/sdl/sdl-adjustment-mechanism-surface-water**

Constraints management

Constraints are rules and structures that govern the volume and timing of regulated water delivery through the system, including the delivery of environmental water in a way that protects against third party impacts such as flooding of private land. Previous work by the Authority has shown that relaxing or removing constraints could improve the flexibility of environmental water use in the Basin.

If constraints to environmental water delivery in the Basin were addressed, it would provide river operators with more flexibility in certain years to use environmental water in a way that better connects the river to its floodplains. Such operations would result in improved floodplain benefits and would lead to healthier working rivers overall.

Addressing constraints may also have positive impacts for the delivery of water to consumptive users.

Examples of constraint measures include:

- raising of bridges to allow higher regulated flows in watercourses and floodplains; and
- acquisition of easements to allow inundation of private land in conjunction with making regulated releases of environmental water.

The Authority's work to develop a Constraints Management Strategy is described at **www.mdba.gov.au/what-we-do/water-planning/managing-constraints**

The Commonwealth's commitment to water recovery is to 'bridge the gap' to 2750 gigalitres, as adjusted through the SDL Adjustment Mechanism in 2016. Proposals for investment in supply measures are currently being developed by the States with funding to be provided by the Commonwealth. The Commonwealth will also investigate opportunities for investment in efficiency measures to achieve enhanced environmental outcomes through recovery of additional water.

As these outcomes may relate to delivery of environmental water at a flow rate greater than is currently possible, in some catchments it will be prudent to identify whether the target flow rates can be achieved prior to recovering additional water for the environment. Funding for efficiency measures therefore commences at a later date than funding for constraints measures.

How will the SDL adjustment be made?

To determine the extent to which adjustments can be made to SDLs, in 2016 the Authority will assess, as a single package, proposals for supply and efficiency measures that have been agreed by all Basin state governments.

A protocol for development and assessment of the SDL adjustment measures has been developed as part of the Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin. A copy of the Intergovernmental Agreement is available on the Council of Australian Governments' website at **www.coag.gov.au/node/506**

The protocol outlines the process for Basin state governments to follow to develop and assess proposals through feasibility and business case development stages, including funding confirmation for endorsed projects. It also sets out the process for Basin state governments to first determine the package of constraints measures, and then select the final package of supply and efficiency measures.

To initiate the SDL Adjustment Mechanism, Murray-Darling Basin Ministerial Council agreed measures must be provided to the Authority by 30 June 2016. The Authority will consider the package and determine the adjustment it considers appropriate for the package of proposed measures.

Following consideration of any advice from Basin state governments and submissions from members of the public, the Authority will then recommend to the Minister an amendment to change the SDLs in the Basin Plan. Once approved by the Minister, adjustments to the SDLs will need to be supported by Parliament.

States will have until 2019 to reflect the final SDLs in their own water resource plans. All projects that have been assessed and approved as part of the SDL Adjustment Mechanism must have entered into operation by 2024.

Further information about SDL adjustments can be found on the Authority's website at **www.mdba.gov.au/what-we-do/water-planning/sdl/sdl-adjustment-mechanism-surface-water**

How will changes to downstream apportionment and the SDL Adjustment Mechanism influence water recovery?

The final apportionment of the shared downstream reduction to individual catchments in the Southern Connected Basin will be set by the states in 2016 and this will take into account the volume of SDL adjustments arising from supply and efficiency measures set in 2016. Furthermore, the volume and location of water savings from the Australian Government's investments in water saving infrastructure will be known with more certainty by this time.

Taken together, these processes will set the final volume and geographical focus of environmental water recovery needed to bridge the remaining gap to the SDLs. This will guide how water recovery programmes are implemented from 2016.

Any adjustment to the focus of the Government's water purchasing programme in response to the operation of the SDL Adjustment Mechanism will be reflected in an updated Water Recovery Strategy to be developed in 2016. While the commitment to the 1500 gigalitre cap will remain, any shortfall in the operation of the SDL Adjustment Mechanism will likely necessitate redirection of any uncontracted funds to higher return water recovery activities.

What progress has been made on the SDL adjustment?

The Australian Government has committed significant funding to support the delivery of supply and efficiency measures and the removal or easing of constraints to the delivery of environmental water.

Progress on supply measures

All Basin state governments have agreed to arrangements that allow for up to 650 gigalitres of SDL adjustments to be achieved through supply measure projects and these arrangements are legislated by the Basin Plan. Basin state governments are responsible for developing supply measure projects and ensuring consultation with relevant stakeholders during their development. The project proposals will be jointly assessed by Basin state governments for their potential to deliver the anticipated benefits before they agree on a final package of measures to put forward in 2016.

The Australian Government has provided funding for Basin state governments to investigate the feasibility of potential supply measure projects. The types of projects that are under development include the installation of regulators and ancillary infrastructure to enable more natural inundation patterns for key environmental sites across the floodplain while using less water. Further information on these feasibility studies is available on the Authority's website at **www.mdba.gov.au/what-we-do/water-planning/sdl/proposals**

As part of the Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin, the Australian Government provided $34.5 million to help Basin state governments develop business cases for prospective supply measure projects. States are now developing supply measure projects and have commenced the assessment process.

Agreed supply measure projects will be funded by the Australian Government up to the market value of the environmental water which would have otherwise been recovered from held entitlements.

If there is a remaining gap between a jurisdiction's apportioned share of the final water recovery target, after taking full account of their committed water recovery projects and their share of SDL adjustments from supply measures, this will be recovered from within that jurisdiction by the Commonwealth between 2016 and 2019. Potential methods of water recovery include further water saving infrastructure, and water purchasing within the limits of the 1500 gigalitre cap.

Progress on efficiency measures

The Australian Government has legislated over $1.5 billion for potential efficiency measure projects that are expected to commence in 2016–17 and deliver up to 450 gigalitres of additional environmental water. The additional water can only be recovered in ways that ensure social and economic outcomes for Basin communities are maintained or improved, and where system constraint issues are addressed.

The types of projects that can be funded through efficiency measures will include those that improve the efficiency of irrigation infrastructure.

The Australian Government currently administers a number of programmes similar to the proposed efficiency measures programme. These programmes are being examined to identify the preferred delivery model for efficiency measures with a view to consulting with Basin jurisdictions in late 2014 on the proposed programme design.

Progress on constraints management

The Australian Government is providing $200 million through the *Water for the Environment Special Account* to help remove or ease physical or other constraints, particularly in the southern connected system. While easing or removing constraints will not in itself lead to the recovery of more water, it will enable better outcomes to be achieved from the use of environmental water including water recovered for the environment through efficiency measures.

The Authority has prepared the *Constraints Management Strategy 2013 to 2024* to identify priority constraints that impede efficient environmental water delivery across the Basin and to identify options to overcome these constraints. The Constraints Management Strategy proposes a timetable for phased assessment and implementation over the next ten years. It involves a collaborative approach with Basin state governments and a strong focus on community involvement throughout the process.

A key requirement is that projects avoid any adverse impacts on third parties. If the impacts cannot be addressed then the constraint will not be included in the final package.

The type of projects that could be considered include acquiring easements, providing access works such as lifting bridges and changing culverts, amending river operating rules, and increasing outlet capacity in dams and other water storages.

Further information on addressing constraints to environmental water delivery, including the Constraints Management Strategy, is available on the Authority's website at **www.mdba.gov.au/what-we-do/water-planning/managing-constraints**

How is the recovered water delivered to the environment?

The Commonwealth Environmental Water Holder manages water entitlements acquired by the Australian Government's water recovery programmes and works with local communities to decide how to best use that water.

The position of Commonwealth Environmental Water Holder (CEWH) was established under the *Water Act 2007*. The CEWH manages water entitlements acquired by the Australian Government's water recovery programmes in accordance with environmental watering plan, as outlined in the Basin Plan.

From March 2009 to March 2014, over 3322 gigalitres of Commonwealth environmental water has been delivered to rivers, wetlands and floodplains throughout the Basin. In addition, 1231 gigalitres of water was contributed by state governments, the Living Murray program, and from private donations.

The CEWH is using the water to help improve the health and resilience of the Basin's environment by increasing the amount of water available for environmental purposes and improving water quality:

- in local catchments the water is helping connect rivers to floodplains and wetlands—the heart and lungs of local environments—to support nutrient cycling and food chains and native plant and animal reproduction including native fish and bird-breeding events
- downstream by flushing salt, sediments and excess nutrients out of the system through the Murray Mouth.

Robust planning, scientific monitoring and stakeholder consultation underpin CEWH decisions about options to deliver water to environmental assets within the current year, carry over water to future years by leaving it in storage (where possible), or to trade environmental water.

Watering options are assessed throughout the year based on seasonal, operational, and management conditions including the ecological value of the river, floodplain or wetland, the expected outcomes from watering, the potential risks of watering, the long-term sustainability and management of the site, and the cost effectiveness and feasibility of watering. These options align with the Basin Plan's environmental watering plan, which provides the principles and methods for identifying environmental assets and annual priorities for water use.

Watering actions are informed by a range of stakeholders including state agencies, environmental water managers, landholders and local groups including catchment management authorities, natural resource management boards and environmental water advisory groups.

All decisions on water use are informed by a comprehensive assessment of risk, with arrangements put in place to ensure risks are identified and appropriately managed. The CEWH's delivery partners, including river operators, then manage the delivery of the water to key sites throughout the Basin.

Further information on Commonwealth environmental water management can be found on the Department of the Environment's website at: **www.environment.gov.au/topics/water**

When will this Strategy be updated?

This Strategy will be updated annually to incorporate the latest information on the volume of environmental water recovered through various programmes. There will be a major review and update of the Strategy in 2016 following the operation of the SDL Adjustment Mechanism.

The Australian Government will continue to consult with Basin state governments and seek the views of industry and Basin communities on the planned approach to water recovery.

2016 Review

Future water recovery priorities will be informed by the outcomes of the Northern Basin Work Program, the operation of the SDL Adjustment Mechanism, the apportionment by Basin states of downstream water recovery requirements between catchments, and the progress of the Australian Government's water recovery programmes. By 2016, it will be possible to more precisely target remaining water recovery activities to meet all water recovery targets in the Basin Plan.

How to provide feedback on the Strategy

This Strategy will be regularly updated to take account of Basin Plan developments and the progress of water recovery. Stakeholders are encouraged to provide feedback to:

E-mail: **WaterRecovery@environment.gov.au**

Post: 'Water Recovery Strategy Feedback'
Water Recovery Team
Department of the Environment
GPO Box 787
Canberra ACT 2601

Annexures

Annexure A
Australian Government Investment in Water Reform Projects

This Annexure lists all major water reform programs funded by the Australian Government since 2002. Actual expenditure for completed programmes may be different from initial commitment announcements due to projects terminating or other changes to programmes scopes.

1. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Infrastructure Component

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)[1]	Water Yield[2] (Gigalitres)	Market Multiple[3]	Status
Murray-Darling Basin gap bridging water infrastructure projects					
Victoria State Priority Projects—Goulburn Murray Connections Project Stage 2	The project involves modernisation of channels, replacement or removal of meter outlets, and creation of new direct connections for customers currently connected to distribution and spur channels.	956	102	4.9	Underway
New South Wales State Priority Projects—Private Irrigation Infrastructure Operators Program	A Commonwealth-led grants program for private irrigation operators in NSW which funds projects to improve the efficiency and productivity of water use and management, both off and on-farm and help to secure a sustainable future for irrigation communities.	650	113	2.4	Underway

1 Funding amount listed is the maximum Australian Government commitment unless the program or project is completed, in which case the amount shown is actual expenditure. Amounts are rounded to whole numbers. Funding amounts and water recovery volumes rounded to whole numbers.

2 For projects recovering environmental water in the Murray-Darling Basin, water recovery volumes are current as at 30 April 2014 and are shown in gigalitres (GL), expressed as long-term average annual yield (LTAAY), unless otherwise noted. SRWUIP infrastructure water recovery is reported at the point at which water savings have been received, estimated or agreed in signed project works contracts. Until water transfer contracts have been exchanged however, these figures may be subject to change over time. Not all of this water recovery contributes to meeting the 'bridging the gap' commitment.

3 The market multiple is a ratio showing the Australian Government's return on investment for water from infrastructure projects relative to the cost of purchasing the same water entitlements at the prevailing market price. The market multiple is calculated at the time infrastructure project was approved for funding and for programmes with multiple funding rounds, is weighted by funding.

1. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Infrastructure Component continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)[1]	Water Yield[2] (Gigalitres)	Market Multiple[3]	Status
Murray-Darling Basin gap bridging water infrastructure projects					
On Farm Irrigation Efficiency Program (including pilots)	Delivered by the Commonwealth through various local delivery partners such as industry bodies and Catchment Management Authorities. The program assists irrigators within the southern connected system of the Murray-Darling Basin (MDB) to modernise their on-farm irrigation infrastructure while returning water savings to the environment. Maps indicating the geographic locations of projects funded under this initiative are available at: **www.environment.gov.au/topics/water/rural-water/sustainable-rural-water-use-and-infrastructure/farm-irrigation-efficiency**	456	83 From pilot projects and rounds 1–3 only	2.3 Pilot project 1.9	Underway
New South Wales State Priority Projects—NSW Water Metering Scheme	The project involves installing or upgrading meters in NSW groundwater, unregulated and regulated water sources and replaces existing customer-owned meters with State Water-owned meters connected via telemetry.	221	44[4]	2.3 Pilot project 3.5	Underway
New South Wales State Priority Projects—Nimmie Caira Enhanced Environmental Water Delivery Project	The Australian Government provided funding to NSW to purchase the land and water entitlements from 11 property owners in the Nimmie-Caira area. The NSW government will undertake extensive infrastructure works and develop long term land management arrangements in the area.	180	133	2.4	Underway
Queensland State Priority Projects—On Farm Water Use Efficiency	The project supports on farm irrigation modernisation, with a share of water savings coming to the Commonwealth for environmental use. The Queensland Department of Natural Resources and Mines is the State agency responsible for implementing the Project.	155	7 from rounds 1–5 only	2.0	Underway
New South Wales State Priority Projects—Basin Pipes (North and South)	The project involves installing more efficient stock and domestic water infrastructure in the MDB in NSW.	137	30	2.5	Underway

4 12 gigalitres of this water is non gap bridging groundwater.

1. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Infrastructure Component continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)[1]	Water Yield[2] (Gigalitres)	Market Multiple[3]	Status
Murray-Darling Basin gap bridging water infrastructure projects					
Victoria State Priority Projects—Sunraysia Modernisation	The project involves on-farm irrigation infrastructure upgrades on approximately 450 farms in the Goulburn-Murray Irrigation District in Northern Victoria.	103	7	7.1	Underway
Victorian Farm Modernisation Project	Delivered by Goulburn-Murray Catchment Management Authority, to support on-farm irrigation infrastructure across the Goulburn-Murray Irrigation District in Northern Victoria.	100	30	1.9	Underway
New South Wales State Priority Projects—Irrigated Farm Modernisation	The project provides investment in on-farm works and measures that lead to improved water use efficiency, assisting irrigation farmers to do more with less water.	92	13	2.5 Pilot project 2.3	Underway
Small Block Irrigator Exit Grants[5]	A grants program that provided small block irrigators in the MDB affected by drought with the opportunity to exit the industry whilst remaining in their own homes and communities. The grant provided monies to exit the industry as well as assistance for removal of permanent plantings and other production-related infrastructure and re-training.	49	19 Attributed to Water Purchase Programme	N/A	Completed
Victoria State Priority Project—NVIRP 2 On Farm Priority Project	The NVIRP 2 On- Farm Priority Project is aligned with the Goulburn Murray Water Connections Project Stage 2 (formerly NVIRP2). The on-farm initiative will deliver farm irrigation system upgrades to the Goulburn Murray Irrigation District so that farms will realise the full benefit of both off and on-farm modernisation, delivering water from the dam to the plant with optimal efficiency.	44	10	2.3	Underway
South Australia State Priority Projects—Private Irrigation Infrastructure Program	A Commonwealth-led grants program for irrigators in SA to undertake irrigation infrastructure efficiency improvements both on and off farm, with a share of the water savings to be used for environmental water purposes.	14	3	2.6	Underway

5 Funding for infrastructure works under the Small Block Irrigator Exit Grants came from the SRWUIP infrastructure programme. $49 million of additional funding was provided from the Water Purchase Programme to purchase the water entitlements from exiting irrigators at market value.

1. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Infrastructure Component continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)[1]	Water Yield[2] (Gigalitres)	Market Multiple[3]	Status
Murray-Darling Basin gap bridging water infrastructure projects					
Irrigator Led Group Proposals—infrastructure decommissioning	Grants program for the reconfiguration of inefficient off-farm delivery infrastructure.	0.03	30	N/A	Completed
Water for Rivers[6]	The Joint Government Enterprise, trading as Water for Rivers, was a ten year (2002-2012) initiative of the Australian, New South Wales and Victorian Governments. The formation of the Joint Government Enterprise was a commitment under the corporatisation of the Snowy Mountains Hydro-electric Authority in June 2002 and reflected the agreement of all three Governments to deliver water for environmental flows in the Snowy River and the River Murray through the Snowy Water Inquiry Implementation Outcomes Deed.	125	9	N/A	Completed
The Living Murray Initiative	The Living Murray Initiative was managed by the Murray-Darling Basin Authority to help improve the health of the River Murray, with a focus on six icon sites that are internationally significant wetlands supporting a rich biodiversity. Total program funding was $500 million over five years (the Commonwealth's total contribution was $200 million) to recover an annual average of up to 500 gigalitres of water for the environment.	200	487	N/A	Completed

6 In 2007 the Australian Government committed an additional $50 million to Water for Rivers to contribute to the recovery of 214 GL of water entitlements for the Snowy River. This additional funding augmented a previous Australian Government commitment of $75 million to recover water entitlements for the River Murray. A total of 64 GL LTAAY of water was recovered for the River Murray, with 9 GL LTAAY contributing towards bridging the gap in Murray-Darling Basin, which is counted against State Government recoveries (the remaining water recovered prior to 2009 and thus included in the calculation of the baseline diversion limit).

2. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Murray-Darling Basin non gap bridging projects

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Murray-Darling Basin non gap bridging projects			
Due diligence, compliance reviews and water conveyancing	Funding to contract expertise to evaluate infrastructure project business case proposals, including from States Governments. Also funds program audit/compliance review costs, and conveyancing costs relating to transferring SRWUIP water savings to the Commonwealth.	35	Underway
South Australia State Priority Projects—Integrated Pipelines	The project involved construction of three pipelines, including two potable pipelines servicing local communities and one irrigation pipeline.	117	Completed.
South Australia State Priority Projects—Lower Lakes and Coorong Recovery	This involves a series of projects and management actions to provide an enduring ecological response for the Coorong, Lower Lakes and Murray Mouth—a Ramsar Wetland area of international importance. Start up funding of up to $10m was provided to undertake a Feasibility Study to investigate long-term management options for the area, including development of a long-term plan and business case. A suite of early works projects is complete. Funding has also been provided for the removal of temporary regulators (Narrung Bund, Clayton and Currency Creek) to allow the return of natural river flow. The full project including a Lake Albert Water scoping study is underway.	161	Underway
Commonwealth Environmental Water Office Water Holdings Management, NSW Shepherding and Murray-Darling Basin Environmental Water Knowledge and Research Project	Funding was provided for a range of measures including costs associated with managing water holdings for water entitlements that the Commonwealth is acquiring through SRWUIP programs; water Shepherding arrangements in NSW; and a water knowledge and research project led by the Murray-Darling Freshwater Research Centre at aquatic asset sites in key geographical locations in the northern and southern Murray-Darling Basin.	168	Underway
Murray-Darling Basin Authority Regional Economic Diversification Program	Funding for economic diversification projects to assist Basin Communities adjust to a more sustainable water future	100	Underway
Wimmera-Mallee Pipeline	The project involved replacing over 17,000km of inefficient open channel systems with 8,800km of pipeline, saving more than 100 billion litres of water each year and helping ensure the water supply for around 36 townships and 9000 farms in the region.	98	Completed

2. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Murray-Darling Basin non gap bridging projects continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Murray-Darling Basin non gap bridging projects			
Australian Capital Territory State Priority—ACT Catchment Management Project	The project involves implementing a water quality monitoring system to underpin and prioritise catchment management actions to improve water quality, including infrastructure intervention to intercept pollutants, nutrients and sediment entering rivers and lakes in the ACT and surrounding areas.	85	Underway
Strengthening Basin Communities Program	A grants program for local municipalities in the MDB to assist in planning for a future with less water and associated local water savings initiatives that improved water security by reducing demand on potable water supplies.	64	Underway
Murray-Darling Basin, Basin Plan Activities	Funding provided to the Murray-Darling Basin Authority to assist with implementing the Basin Plan.	59	Underway
South Australia Riverland Floodplain Integrated Infrastructure Project	The $155 million project (delivered by the Murray-Darling Basin Authority), involves installation of regulators at the priority South Australian Murray wetland sites at the Pike and Katarapko floodplains to enable broader and more natural floodplain inundation. Salt interception schemes will be used to manage high levels of groundwater salinity. $55 million was provided from SRWUIP.	155	Underway
New South Wales State Priority Projects -Healthy Floodplains	The project involves reforming the management of water on floodplains across the Murray-Darling Basin.	50	Underway
Supply Measures Start Up for Business Case Development	Funding provided to New South Wales, South Australia and Victorian governments to develop business cases for supply measure projects that provide offset water saving under the Sustainable Diversion Limit Adjustment Mechanism of the Murray-Darling Basin Plan.	34.5	Underway
Orange City Pipeline	The project involves construction of a pipeline between Orange and the Macquarie River. The pipeline will provide Orange with a secure water supply by connecting the city's existing water infrastructure to more reliable drinking water from the Macquarie River.	20	Underway
Snowy River Repayment of Mowamba Borrow	Funding to repay the Mowamba Borrowing Account for the period where water flow was redirected from the Mowamba Weir into the Snowy River while the Mowamba Aqueduct was decommissioned, to allow for construction of a new outlet on Jindabyne Dam.	14	Completed
Environmental Works and Measures	A program to identify, develop and test the feasibility of environmental works and measures.	10	Underway

2. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Murray-Darling Basin non gap bridging projects continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Murray-Darling Basin non gap bridging projects			
Hume Dam Remedial Works	Funding co-contribution to remedial works on the Hume Dam southern training wall. Funding was appropriated to the MDBA to deliver the project.	10	Completed
Irrigation Modernisation Planning Assistance	This program provided funding to irrigation water providers to develop modernisation plans for their districts that outline how to achieve long term improvements in irrigation water use efficiency and assess options to adapt to a future with less water.	6	Completed
Queensland State Priority Projects—Coal Seam Gas Water study	A feasibility study aimed at undertaking a detailed analysis of the use of Coal Seam Gas water in the Qld Murray-Darling Basin.	5	Completed
Lithgow-Clarence Colliery Water transfer Project	The project involved upgrading the Clarence Water Transfer System, allowing the increased use of excess water from Clarence Colliery. The project improved the security of Lithgow's water supply by supplementing its potable water supplies and offsetting water that would ordinarily be drawn from Oberon Dam.	4	Completed
Irrigation Hotspots Assessment Program	A project using a science-based approach to identify the nature, location and amount of water loss (known as hotspots) in existing channel and piped irrigation delivery systems across Australia.	2	Completed
SA River Murray Improvement Program Feasibility and Business Case Preparation	Funding was provided to South Australia to develop a feasibility study and business case for a proposed South Australian River Murray Improvements Program. In August 2013 the Australian Government entered into a new program agreement with South Australia to fund a new program, the South Australia River Murray Sustainability Program.	1	Completed
National Water Commission Assessment of Reforms	Funding provided for the cost of assessment of water reforms under Water Management Partnership Agreements with the States for State Priority Projects.	0.6	Completed
Liverpool Plains Regional Water Supply Strategy	Funding was provided to the Liverpool Plains Shire Council to undertake a design and scoping study, building on the work undertaken under the Strengthening Basin Communities program.	0.4	Underway
Great Artesian Basin Sustainability Initiative	Under the Great Artesian Basin Sustainability Initiative the Australian Government is investing funding over fifteen years (1999–2014) to accelerate work on the repair of these uncontrolled artesian bores and the replacement of open earthen bore drains with piped water reticulation systems. The initiative is delivered through State agencies and the Australian Government makes its contributions jointly with state governments and bore owners.	63	Underway

2. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Murray-Darling Basin non gap bridging projects continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
SRWUIP Projects outside the Murray-Darling Basin or Nation Wide			
Supporting more efficient irrigation in Tasmania	Funding provided to the Tasmanian government to develop nine modern and efficient irrigation schemes in Tasmania. A sub project involved a CSIRO study to estimate changes to future water yields having regard to climate change and future development, and covered approximately 50,000 square kilometres throughout Tasmania.	140	Underway
Compliance and Enforcement Systems for Water Resource Management	A water reform initiative to development a national risk-based compliance and enforcement framework of non urban water resource management to improve water compliance and enforcement.	55	Underway
Harvey Pipeline in Western Australia	This project involved construction of a pipeline to replace existing open irrigation channels with a fully integrated piped irrigation system. Water savings are being used to improve security of critical urban water supplies in the Perth metropolitan region and providing benefits to the environment.	35	Completed
National Water Market System 2009–2014	A water reform initiative to strengthen Australia's water market through efficient management of improved state and territory water registers, water transactions and availability of market information. The project achieved enhancements to existing water registries, implementation of new interstate trading processes and registry interoperability, and development of a detailed system architecture and design for a common registry solution.	33	Terminated effective 30 June 2014
Meter Test Facilities	Funding provided to build meter test facilities to meet the pattern approval testing standard specifications required under the National Framework for Non-urban Water Metering.	7	Underway
Gascoyne Irrigation Pipeline Project	The project involved construction of a high-pressure irrigation water delivery system throughout the Carnarvon Irrigation Area.	7	Completed
National Hydrological Modelling Platform	Funding provided for MDB system analysis and implementation of the Source Integrated Modelling System. The project will increase the capacity of State and Territory departments and authorities to model surface water and the groundwater-surface water interface.	6	Underway
Sustainable Yields Study of South West WA	The project investigated estimated changes to future water yields having regard to climate change and future development. This covered 39,043 square kilometres of surface water catchment and 37,186 square kilometres of groundwater management areas from Geraldton to Albany.	5	Completed

2. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Murray-Darling Basin non gap bridging projects continued

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
SRWUIP Projects outside the Murray-Darling Basin or Nation Wide			
Water for the Future Communications	Funding was made available for a national water education campaign to provide information on water reform to communities dependent on the MDB.	4	Completed
Great Artesian Basin Shared Water Resources Assessment	Funding of $3.1 million co-contribution towards the assessment of the shared water resource of the Great Artesian Basin. The report was launched in March 2013.	3	Completed

3. Sustainable Rural Water Use and Infrastructure Program—Murray-Darling Basin potential Supply Measure projects

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	SDL Adjustment Estimate[7] (Gigalitres)	Status
Murray-Darling Basin potential Supply Measure projects				
Menindee Lakes Project	The proposed project involves reducing evaporation and improving water efficiency at Menindee Lakes, securing Broken Hill's water supply, protecting the local environment and heritage and returning water to the environment. A final decision to fund the project has not yet been provided, and will be primarily based on a value for money assessment of the contribution of the project to Basin Plan outcomes (water savings) compared to cost. If approved the project would be fully funded by the Commonwealth. Funding is currently available until the end of the 2018–19 financial year.	181	Subject to assessment and project funding approval	Underway
South Australia State Priority Projects—Riverine Recovery[8]	The project involves investment in wetland and floodplain management and infrastructure to restore river operations.	89	13	Underway

7 For projects recovering environmental water in the Murray-Darling Basin, water recovery volumes are current as at 30 April 2014 and are shown in gigalitres (GL), expressed as long-term average annual yield (LTAAY), unless otherwise noted.

8 When originally assessed for funding approval the water recovered through the Riverine Recovery Project was counted as 'gap bridging' (contributed to reducing levels of extractions and diversions in the Murray-Darling Basin). The Murray-Darling Basin Authority (MDBA) subsequently advised that the class of water entitlements offered under the project were not included in the estimate of baseline diversions in South Australia and therefore did not consider the water to be gap bridging. The Authority has indicated the Riverine Recovery project may be eligible for consideration as a Supply Measure project under the Sustainable Diversion Limit Adjustment Mechanism.

4. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Water Purchase

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Water Yield (Gigalitres)	Market Multiple	Status
Water Purchase Programme[9]	Funding to purchase water entitlements from willing sellers in the Murray-Darling Basin to reduce consumptive water use, provide water for the environment and through those measures ease transition to the *Sustainable Diversion Limits in the Murray-Darling Basin Plan 2012*.	3,155	1,000	1.0	Underway

5. Sustainable Rural Water Use and Infrastructure Program (SRWUIP)—Supply Measures

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	SDL Adjustment (Gigalitres)	Status
Investment in Supply Measures	Supply measures are works, river operations or rule changes that enable the use of less water while achieving equivalent environmental outcomes. Water savings identified through such projects would allow the 2,750 GL recovery target under the Basin Plan to be reduced by as much as 650GL, thereby reducing the social and economic impacts of water recovery.	1,266 (after $34.5m provided for business case development)	Will reduce Basin Plan water recovery target by up to 650	Project Development Underway

9 Previously known as the Restoring the Balance in the Murray-Darling Basin Program. The volume of environmental water for Murray-Darling Basin that can be recovered through this programme is capped at 1500 gigalitres. The Water Purchase Programme will recover the residual amount of water needed to 'bridge the gap' to the Sustainable Diversion Limit in the *Murray-Darling Basin Plan 2012*, after water recovery from investments in irrigation efficiency projects and adjustments arising from Supply Measures projects have been accounted for.

6. South Australian River Murray Sustainability Program

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Water Yield (Gigalitres)	Market Multiple	Status
South Australian River Murray Sustainability Program	A Commonwealth-funded programme delivered by the South Australian Government through four separate elements: • Irrigation efficiency improvements • South Australian water purchase program The Department of Agriculture maintains Commonwealth oversight of the $120m Irrigation Industry Assistance element of the Program and the Department of Infrastructure and Regional Development maintains Commonwealth oversight of the $25m Regional Economic Development element of the program.	245	At least 36	2.5 Infrastructure program only	Underway

7. Bioremediation Revegetation Trials

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Bioremediation and Revegetation	The Australian Government contributed funding over two years to South Australia to undertake large-scale seeding and planting on the exposed acid sulfate soils and promote naturally occurring sulphur-reducing bacteria, which repair and reduce the acidification process in the Coorong and Lower Lakes. The funded projects assisted with natural revegetation, weed management and soil stabilisation, to help improve the health of the Lower Lakes ecosystem. This funding was provided in addition to the $200 million for other environmental projects through SRWUIP.	10	Completed

8. Water Resources Assessment and Research Grant

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Water Resources Assessment and Research Grant	A discretionary grants programme to address national priority issues in relation to the sustainable use and management of water resources and implementation of the National Water Initiative. From 2011–12 to 2016-17 the funding has been committed to developing an Integrated Ecological Condition Assessment Framework as part of the national Aquatic Ecosystems Toolkit agreed by Commonwealth, State and Territory Ministers in 2012— **www.environment.gov.au/topics/water/water-information/aquatic-ecosystems**	1.5	Underway

9. State Basin Plan Implementation Costs

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
State Basin Plan Implementation Costs	Funding to Murray-Darling Basin States for administrative costs incurred as a result of implementing the *Murray-Darling Basin Plan 2012.*	140	Underway

10. Northern Australia Futures Assessment

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Northern Australia Futures Assessment	The Australian Government established the Northern Australia Water Futures Assessment to provide information needed to inform the development and protection of northern Australia's water resources, so that development is ecologically, culturally and economically sustainable. The geographical area considered stretched more than 3,000 km, from Broome in the west to Cairns in the east.	13	Underway

11. Water Resources Assessment and Research Grant

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Water Resources Assessment and Research Grant	A discretionary grants programme to address national priority issues in relation to the sustainable use and management of water resources and implementation of the National Water Initiative. From 2011–12 to 2016–17 the funding has been committed to developing an Integrated Ecological Condition Assessment Framework as part of the national Aquatic Ecosystems Toolkit agreed by Commonwealth, State and Territory Ministers in 2012.	2	Underway

12. National Water Security Plan for Cities and Towns

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
National Water Security Plan for Cities and Towns	The National Water Security Plan for Cities and Towns funds practical projects that save water and reduce water losses in cities and towns nationally, predominately in towns with populations of less than 50,000. It includes the COAG water reform work program—Strategy on Water and Wastewater Services in Remote Communities (including Indigenous Communities) initiative projects. Maps indicating the geographic locations of projects funded under this initiative are available at: **www.environment.gov.au/topics/water/water-cities-and-towns/national-water-security-plan**	233	Underway

13. Green Precincts

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Volume Potable Water Replacement	Status
Green Precincts Fund	The Green Precincts Fund was designed to prepare Australian communities for a future with less water; and to encourage local communities to better manage their water and energy use for current and future generations. The Green Precincts Fund's objectives were to support project initiatives that encourage water and energy savings measures at the community level. A map indicating the geographic locations of projects funded under this initiative is available at: **www.environment.gov.au/topics/water/water-cities-and-towns/green-precincts-fund**	13	Up to 135 megalitres per year	Completed

14. National Rainwater and Greywater Initiatives

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
National Rainwater and Greywater Initiative	Rebates up to $500 were available for households that purchased rainwater tanks or greywater systems from 1 March 2009 to 10 May 2011.	7	Completed

15. Water Smart Australia

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Water Smart Australia	Water Smart Australia Programme aimed to accelerate the development and uptake of smart technologies and practices in water use across Australia. Maps indicating the geographic locations of projects funded under this initiative are available at: **www.environment.gov.au/topics/water/water-cities-and-towns/water-smart-australia/projects-sorted-state**	1,400	Underway

16. National Urban Water and Desalination Plan

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Volume Potable Water Replacement	Status
National Urban Water and Desalination Plan	The NUWDP provides funding for urban water infrastructure and research that contributes significantly to improving the security of water supplies in Australia's larger cities, without adding to greenhouse gas emissions. This programme contributed funding to the Adelaide Desalination plant which generates 5.4 GL LTAAY a year gap bridging water. Maps indicating the geographic locations of projects funded under this initiative are available at: **www.environment.gov.au/topics/water/water-cities-and-towns/national-urban-water-and-desalination-plan**	619	Up to 180 megalitres per year	Underway

17. Commonwealth Contribution under the Murray-Darling Basin Agreement

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Commonwealth contribution to the joint programs under the Murray-Darling Basin Agreement	Funding for operations and natural resources management activities as agreed to by the Murray-Darling Basin Ministerial Council and implemented by the Murray-Darling Basin Authority on behalf of the jurisdictions.	106.6	Underway

18. Raising National Water Standards

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Raising National Water Standards Program	The Raising National Water Standards (RNWS) Program was a $250 million Australian Government initiative that supported projects to advance National Water Initiative (NWI) reforms by improving water management, capacity, knowledge, skills and innovation. The programme was administered by the National Water Commission and funded 178 projects directed at activities across three strategic investment areas: 1. advancing the implementation of the NWI 2. improving integrated water management across Australia 3. improving knowledge and understanding of our water resources.	214	Completed

19. Improving Water Information

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
Improving Water Information	The Bureau of Meteorology is responsible for the delivery of forecasting services, analysis and interpretation of national water information.	450	Underway

20. Assessment of the Impacts of Extractive Industry Activities

Project Title	Short Project Description	Government Commitment / Expenditure (up to $m)	Status
National Partnership on Coal Seam Gas and Large Coal Mining Development	Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining (including Committee costs).	60.19	Underway

Annexure B
Summary of state government water recovery programmes

Volume recovered as at 30 April 2014.

State	Programmes/Projects	Water recovery towards 'Bridging the Gap' (GL LTAAY)[1]
NSW	NSW Riverbank	64
	NSW Rivers Environmental Restoration Program	
	NSW Wetlands Recovery Program	
SA	National Urban Water and Desalination Plan (Adelaide desalination plant[2])	6
	The Living Murray program (additional recoveries)	
Vic	Northern Victorian Irrigation Renewal Program (NVIRP) Stage 1	96
	Water for Rivers	
TOTAL		**166**

Notes

1 Water recovery volume in gigalitres (GL) expressed as long term average annual yield (LTAAY). This information is sourced from the Murray-Darling Basin Authority environmental water recovery summary table available at: **www.mdba.gov.au/what-we-do/water-planning/sdl/water-recovery-progress**

2 Partly funded by the Australian Government.

Annexure C
Australian Capital Territory

What is needed for the environment?

The Murray-Darling Basin Plan does not require the recovery of any water to meet the local environmental needs in the Australian Capital Territory portion of the southern Murray-Darling Basin (part of the Murrumbidgee catchment).

However, before the sustainable diversion limits take effect in mid 2019 some water will need to be recovered to meet the ACT's contribution to the shared reduction amount in the southern connected Basin.

Based on the default approach for apportioning the shared reduction amount between southern Basin jurisdictions, this amounts to 4.9 GL.

How much water has already been recovered?

Water recovery in the ACT.	
TOTAL WATER RECOVERY as at 30 April 2014	**nil**

What is still needed to 'bridge the gap'?

The ACT Government, through ACTEW Corporation, has made an offer to sell water to the Australian Government. The parcel offered for sale is sufficient to meet the ACT's contribution to the shared reduction amount in the southern connected Basin, subject to its compliance with the Murray-Darling Basin Authority's water accounting rules.

Annexure D
Northern New South Wales Catchments

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 130 gigalitres (GL) to meet the local environmental water needs in the northern New South Wales portion of the Murray-Darling Basin, which includes the NSW Border Rivers, Namoi, Barwon-Darling, Macquarie-Castlereagh, Intersecting Streams and Gwydir catchments.

Before the sustainable diversion limits (SDLs) take effect in mid-2019, additional water will need to be recovered from these catchments to meet New South Wales's contribution to the shared reduction amount in the northern Basin.

Based on the default approach as set out in the Murray-Darling Basin Plan for apportioning the shared reduction amount between northern catchments, this amounts to a further 86 GL, bringing the water recovery target for northern New South Wales to 216 GL.

How much water has already been recovered?

Water recovery in northern NSW catchments.	
Water savings from infrastructure investment[1] • *On-farm Irrigation Efficiency Pilot Program (delivered by the Australian Government)* • *Private Irrigation Infrastructure Operators Program in NSW* • *Estimates for NSW Sustaining the Basin Program including:* - *NSW Water Metering Project* - *Basin Pipe—Stock and Domestic Project* - *Irrigated Farm Modernisation Project*	**70 GL**
Water purchase	**95 GL**
State government programs	**29 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**194 GL**

1 The above amount for infrastructure includes amounts already recovered and contracted future recoveries.

What is still needed to 'bridge the gap'?

If New South Wales apportions the shared reduction amount, following the operation of the SDL Adjustment Mechanism in 2016, in accordance with the default method the remaining recovery required to bridge the gap to the SDLs in northern NSW catchments would be 22 GL in aggregate.

The Australian Government has committed funds for supply measure projects that can potentially 'offset' the need to recover water by up to 650 GL. The New South Wales Government's northern Basin share of a 650 GL SDL adjustment from supply measures, based on the default apportionment set out in the Intergovernmental Agreement, is 38 GL. The contribution from supply measures projects will be determined when the SDL adjustment mechanism operates in 2016.

If the full 650 GL of SDL adjustments from supply measures is not achieved the extent of any further water recovery needed to meet the SDLs by 2019 will be reassessed in 2016.

How will it be recovered?

In the meantime, the Australian Government is giving priority to water recovery through infrastructure investment. Further infrastructure investments are expected to provide around 8 GL of additional water savings in northern New South Wales from funds not yet allocated to specific projects.

Current water recovery, combined with projected water recovery from infrastructure investments and assuming the northern New South Wales' share of the 650 GL SDL adjustment from supply measures is reached, is sufficient to bridge the gap.

The need for any further water purchasing in northern New South Wales will be reviewed after the Northern Basin Scientific Work Program is completed, and the SDL adjustment mechanism operates in 2016. This is when the apportionment of the shared reduction amount in the northern Basin and northern New South Wales' share of the final SDL adjustment will be confirmed and the portfolio will be adjusted accordingly.

Annexure E
Southern New South Wales Connected Catchments

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 590 gigalitres (GL) to meet the local environmental water needs in the New South Wales southern connected Murray-Darling Basin, which includes the Murrumbidgee, New South Wales Murray, and Lower Darling catchments.

Before the sustainable diversion limits (SDLs) take effect in mid-2019, additional water will also need to be recovered from these catchments to meet New South Wales's contribution to the shared reduction amount in the southern connected Basin.

Based on the default approach as set out in the Murray-Darling Basin Plan for apportioning the shared reduction amount between States, this amounts to a further 458 GL, bringing the water recovery target for southern New South Wales to 1048 GL.

How much water has already been recovered?

Water recovery in southern NSW connected catchments.	
Water savings from infrastructure investment[1] • *On-farm Irrigation Efficiency Program (delivered by the Australian Government)* • *Private Irrigation Infrastructure Operators Program in NSW* • *NSW Water Metering Project* • *Basin Pipe—Stock and Domestic Project* • *Irrigated Farm Modernisation Project* • *Nimmie-Caira environmental water delivery project*	**277 GL**
Water purchase	**349 GL**
State government programs	**24 GL**
Other Commonwealth programs	**2 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**652 GL**

1 The above amount for infrastructure includes amounts already recovered and contracted future recoveries.

What is still needed to 'bridge the gap'?

If New South Wales apportions the shared reduction amount, following the operation of the SDL Adjustment Mechanism in 2016, in accordance with the default method the remaining recovery required to bridge the gap to the SDLs in southern NSW connected catchments would be 396 GL in aggregate.

The Australian Government has committed funds for supply measure projects that can potentially 'offset' the need to recover water by up to 650 GL. The New South Wales Government's southern Basin share of a 650 GL SDL adjustment from supply measures, based on the default apportionment set out in the Intergovernmental Agreement, is 290 GL. The contribution from supply measures projects will be determined when the SDL adjustment mechanism operates in 2016.

If the full 650 GL of SDL adjustments from supply measures is not achieved the extent of any further water recovery needed to meet the SDLs by 2019 will be reassessed in 2016.

How will it be recovered?

In the meantime, the Australian Government is giving priority to water recovery through infrastructure investment. Further infrastructure investments are expected to provide around 47 GL of additional water savings in southern New South Wales through the On-Farm Irrigation Efficiency Program and New South Wales State Priority Project funds not yet allocated to specific projects.

Current water recovery, combined with projected water recovery from infrastructure investments and the southern New South Wales share of a 650 GL SDL adjustment from supply measures, leaves a residual purchase requirement of 58 GL. As a result, water purchasing in southern New South Wales will continue consistent with the Government's approach, through small and orderly approaches to the market. This position will be reviewed after the SDL adjustment mechanism operates in 2016 and New South Wales' share of the SDL adjustment is confirmed and the portfolio will be adjusted accordingly.

Annexure F
Queensland Catchments

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 117 gigalitres (GL) of surface water to meet the local environmental water needs in the Queensland portion of the Murray-Darling Basin, which includes the Paroo, Warrego, Nebine, Condamine-Balonne, Moonie, and Queensland Border Rivers catchments.

Before the sustainable diversion limits (SDLs) take effect in mid-2019, additional water will need to be recovered from these catchments to meet Queensland's contribution to the shared reduction amount in the northern Basin.

Based on the default approach as set out in the Murray-Darling Basin Plan for apportioning the shared reduction amount between northern catchments, this amounts to a further 57.5 GL, bringing the water recovery target for Queensland to 174.5 GL.

How much water has already been recovered?

Water recovery in Queensland catchments.	
Water savings from infrastructure investment[1] • *Queensland Healthy Headwaters Water Use Efficiency Project*	**6 GL**
Water purchase	**42 GL**
Gift from Queensland Government	**11 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**59 GL**

1 The above amount for infrastructure includes amounts already recovered and contracted future recoveries.

What is still needed to 'bridge the gap'?

If Queensland apportions the shared reduction amount, following the operation of the SDL Adjustment Mechanism in 2016, in accordance with the default method the remaining recovery required to bridge the gap to the SDLs in Queensland catchments would be 115 GL in aggregate.

The Northern Basin Work Program will inform the MDBA's review of the Condamine-Balonne and the northern Basin shared reduction SDLs, and state government decisions about the apportionment of the shared reduction amount. Resolution of these issues will guide the volume and location of future water recovery in the northern Basin.

How will it be recovered?

In the meantime, the Australian Government is giving priority to water recovery through infrastructure investment. Further infrastructure investments are expected to provide around 21 GL of additional water savings in Queensland through the Queensland Healthy Headwaters Water Use Efficiency Project.

Current water recovery, combined with projected water recovery from infrastructure investments, leaves a residual purchase requirement for surface water of almost 95 GL in Queensland.

Surface water purchasing to meet the local environmental needs in the Queensland Lower Balonne catchment is ongoing. Water purchasing to meet Queensland's contribution to the shared reduction amount in the northern Basin will be deferred until the outcomes of the MDBA review of northern Basin SDLs are known. A final decision will then be reached on the apportionment of the shared reduction amount between states and the portfolio will be adjusted accordingly.

Annexure G
South Australia

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 101 gigalitres (GL) to meet the local environmental water needs in the South Australian portion of the Murray-Darling Basin, which includes the Murray, Eastern Mount Lofty Ranges, and Marne Saunders catchments.

Before the sustainable diversion limits (SDLs) take effect in mid-2019, additional water will also need to be recovered from these catchments to meet South Australia's contribution to the shared reduction amount in the southern connected Basin.

Based on the default approach as set out in the Murray-Darling Basin Plan for apportioning the shared reduction amount between States, this amounts to a further 83 GL, bringing the water recovery target for South Australia to 184 GL.

How much water has already been recovered?

Water recovery in South Australia.	
Water savings from infrastructure investment[1] • *On-farm Irrigation Efficiency Program (delivered by the Australian Government)* • *Private Irrigation Infrastructure Program for South Australia*	**11 GL**
Water purchase	**86 GL**
South Australian River Murray Sustainability Program	**36 GL**
State government programs	**6 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**139 GL**

1 The above amount for infrastructure includes amounts already recovered and contracted future recoveries.

What is still needed to 'bridge the gap'?

If South Australia apportions the shared reduction amount, following the operation of the SDL Adjustment Mechanism in 2016, in accordance with the default method the remaining recovery required to bridge the gap to the SDLs in South Australian catchments would be 45 GL in aggregate.

The Australian Government has committed funds for supply measure projects that can potentially 'offset' the need to recover water by up to 650 GL. The South Australian Government's share of a 650 GL SDL adjustment from supply measures, based on the default apportionment set out in the Intergovernmental Agreement, is 52 GL. The contribution from supply measures projects will be determined when the SDL adjustment mechanism operates in 2016.

If the full 650 GL SDL adjustment from supply measures is not achieved the extent of any further water recovery needed to meet the SDLs by 2019 will be reassessed in 2016.

What is still needed to 'bridge the gap'?

If the full 650 GL SDL adjustment from supply measures is not achieved the extent of any further water recovery needed to meet the SDLs by 2019 will be reassessed in 2016.

In the meantime, the Australian Government is giving priority to water recovery through infrastructure investment. Further infrastructure investments are expected to provide around 5 GL of additional water savings in South Australia through the On-Farm Irrigation Efficiency Program (delivered by the Australian Government).

Current water recovery, combined with projected water recovery from infrastructure investments and assuming South Australia's share of the 650 GL SDL adjustment from supply measures is reached, is sufficient to bridge the gap.

There is no immediate need for further water purchasing by the Australian Government in South Australia. However, the need for any further water purchasing in South Australia will be reviewed after the SDL adjustment mechanism operates in 2016 and South Australia's share of the final SDL adjustment is confirmed and the portfolio will be adjusted accordingly.

Annexure H
Victorian Connected Catchments

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 627 gigalitres (GL) to meet the local environmental water needs in the Victorian southern connected Murray-Darling Basin, which include the Victorian Murray, Goulburn, Campaspe, Loddon, Ovens, Broken, and Kiewa catchments.

Before the sustainable diversion limits take effect in mid-2019, additional water will also need to be recovered from these catchments to meet Victoria's contribution to the shared reduction amount in the southern connected Basin.

Based on the default approach as set out in the Murray-Darling Basin Plan for apportioning the shared reduction amount between States, this amounts to a further 425 GL, bringing the water recovery target for Victoria to 1052 GL.

How much water has already been recovered?

Water recovery in Victorian connected catchments.	
Water savings from infrastructure investment[1] • *Goulburn-Murray Water Connections Project* • *Goulburn-Murray Water Connections Project—On-farm component* • *On-farm Irrigation Efficiency Program (delivered by the Australian Government)* • *Victorian Farm Modernisation Project*	**177 GL**
Water purchase	**512 GL**
State government programs	**96 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**785 GL**

1 The above amount for infrastructure includes amounts already recovered and contracted future recoveries.

What is still needed to 'bridge the gap'?

If Victoria apportions the shared reduction amount, following the operation of the SDL Adjustment Mechanism in 2016, in accordance with the default method the remaining recovery required to bridge the gap to the SDLs in Victorian connected catchments would be 267 GL in aggregate.

The Australian Government has committed funds for supply measure projects that can potentially 'offset' the need to recover water by up to 650 GL. The Victorian Government's share of a 650 GL SDL adjustment from supply measures, based on the default apportionment set out in the Intergovernmental Agreement, is 270 GL. The contribution from supply measures projects will be determined when the SDL adjustment mechanism operates in 2016.

If the full 650 GL SDL adjustment from supply measures is not achieved the extent of any further water recovery needed to meet the SDLs by 2019 will be reassessed in 2016.

How will it be recovered?

In the meantime, the Australian Government is giving priority to water recovery through infrastructure investment. Further infrastructure investments are expected to provide around 22 GL of additional water savings in Victoria through the On-Farm Irrigation Efficiency Program (delivered by the Australian Government).

Current water recovery, combined with projected water recovery from infrastructure investments and assuming Victoria's share of the 650 GL SDL adjustment from supply measures is reached, is sufficient to bridge the gap.

The Australian and Victorian Governments have agreed that it is a high priority to continue the modest water purchase initiative aligned with the Victorian Government's Connections Project. Water recovered through this initiative will provide a buffer should there be any shortfall in SDL adjustments from supply measures.

The need for any further water purchasing in Victoria will be reviewed after the SDL adjustment mechanism operates in 2016 and Victoria's share of the final SDL adjustment is confirmed and the portfolio will be adjusted accordingly.

Annexure I
Disconnected Catchments

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 71 gigalitres (GL) to meet the local environmental water needs in the Wimmera and Lachlan catchments.

These catchments are disconnected from the Murray River system in the southern part of the Basin and as a result are unable to contribute to the shared reduction amount in the southern Murray-Darling Basin.

How much water has already been recovered?

Water recovery in the disconnected catchments.	
Water savings from infrastructure investment	**2 GL**
Water purchase	**58 GL**
State government programs	**11 GL**
TOTAL WATER RECOVERY as at 30 April 2014	**71 GL**

What is still needed to 'bridge the gap'?

No further water recovery is required to bridge the gap in the disconnected catchments in the southern Murray-Darling Basin.

Annexure J
Queensland Groundwater

What is needed for the environment?

The Murray-Darling Basin Plan requires the recovery of 40.4 gigalitres (GL) of groundwater extractions to meet the sustainable diversion limits (SDLs) in the Upper Condamine Alluvium Groundwater SDL Resource Unit. The required reduction is in two components: 35.4 GL in the Central Condamine Alluvium, and 5 GL in the Upper Condamine Alluvium–Tributaries.

How much water has already been recovered?

Water recovery in Queensland groundwater regions.	
TOTAL WATER RECOVERY as at 30 April 2014	**nil**

What is still needed to 'bridge the gap'?

Groundwater purchasing in the Central Condamine Alluvium commenced in February 2014. However, no water purchases have yet been made.

How will it be recovered?

Groundwater purchasing in the Upper Condamine Alluvium is an ongoing priority for the Australian Government. Consideration will also be given to expanding the Queensland Healthy Headwaters Water Use Efficiency Project into the Upper Condamine Alluvium groundwater region once the market value of groundwater licences is well established.

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