



Region 7 (Adelaide Metro) Ordinary Meeting

AGENDA

Location: City of Holdfast Bay, Kingston Room, 24 Jetty Road Brighton 5048

Time/date: 6.00pm for 6.30pm, Thursday 22 February 2018

Presenters: Dr Anne Jensen, Environmental Consultant and Healthy Rivers Ambassador for MDB
A healthy working river – how to return the water to the river

Mellissa Bradley, Program Manager, Water Sensitive SA
Water Sensitive SA and water sensitive urban design

1. **WELCOME** Deputy Mayor of Holdfast Bay, Councillor Amanda Wilson

2. **DECLARATION OF INTERESTS**

3. **APOLOGIES**

4. **MINUTES OF THE PREVIOUS MEETING**

5. **CEO's REPORT**

6. **PRESENTATIONS**

7. **REPORT FROM REGION CHAIR**

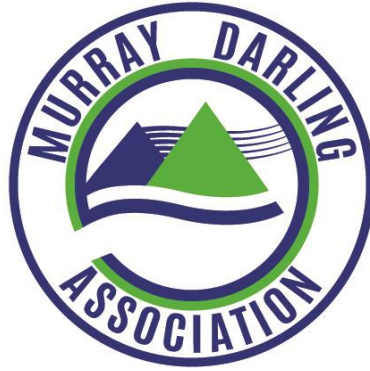
8. **GENERAL BUSINESS**

Adelaide Water supply – an Overview
Ernst and Young Report
NSW Access Regulator
Other Business

9. **NEXT MEETINGS -** Thursday 24 May 2018 - Region 7 AGM?
Thursday 23 August 2018
Thursday 22 November 2018

10. **CLOSE**

The Murray Darling Association acknowledges and thanks The City of Holdfast Bay for its support in hosting this meeting of Region 7.



Chief Executive Officer's Report to the Regions January 2018

Prepared by: Emma Bradbury

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1. Introduction

It was a busy finish to 2017 with the Murray-Darling Basin Ministerial Council meeting in Albury, a presentation to Gunnedah Shire Council (many thanks to treasurer Pete George for the door to door flight that made this possible) and the finalisation of a funding submission to the Building Better Regions Fund.

It's been a productive and positive start to 2018. Our members have already begun engaging on numerous important Basin matters for the year ahead, and we've fielded several membership enquiries from interested councils, several of which have renewed lapse membership.

That all makes for an exciting start to the year and demonstrates that we're on the right path.

2. Diary/Engagements

DATE	EVENT/MEETING	LOCATION
12/12/17	Region 9 AGM and tour of prospective conference venues	Leeton
18/12/17	Meeting with the Murray Darling Basin Ministerial Council	Albury
20/12/17	Presentation to Gunnedah Shire Council	Gunnedah
21/12/17	MDA Christmas celebration	Echuca
22/12/17	Phone call with Ben Fee etc to discuss PIRSA partnership project	Phone
11/12/17	Membes training session	Echuca
15/15/17	Murray River Erosion Management Plan Public Information Session	Bundalong
18/01/17	Conference 2018 Planning Committee meeting	Echuca
19/01/17	Meeting with long-standing MDA supporters John and Annie McArthur at the Australian Open	Melbourne
24/01/17	Meeting with Campaspe Shire Council CEO Jason Russell	Echuca
30-31/01/17	MDA Strategic Planning Workshop	Albury

3. Engagements

3.1. Ministerial Council, Albury

The CEO travelled to Albury on December 18 to attend pre-Ministerial Council events. Cr Thurley was unable to attend, so Cr Jamie Chaffey and General Manager Eric Groth from Gunnedah Shire Council attended in his place, representing Region 11.

The CEO was asked to prepare a summary of key issues to be raised to the Ministerial Council. Broadly, it proposes solutions to some of the issues facing the Basin Plan, including:

- The timely delivery of the Water Resources Plans
- The delivery of the 450 gigalitres of upwater
- The impacts of variations in water allocations
- Water literacy

3.2. Presentation to Gunnedah Shire Council

The CEO travelled to Gunnedah on December 20 to present to Gunnedah Shire Council. The purpose of this presentation was to highlight the achievements and aims of the MDA and invite GSC to consider Chairing Region 11.

GSC have demonstrated a high level of engagement with the MDA and leadership on Basin issues over a number of years, addressing the National Conference in 2015; collaboration with the MDA on a joint submission to the Northern Basin Review, representation of their region and the MDA at the Dec 2017 Ministerial Council stakeholder engagement events, and participation in the 2018 Strategic Planning workshop.

GSC Councillors are expected to vote in February on whether council will Chair the region.

3.3. Presentation to the Border Regional Organisation of Councils

The CEO will travel to St George, Balonne Shire Council on February 9 to address a meeting of the Border Regional Organization of Councils with Mayor Richard March, Chair of Region 12.

The BROC has eight member councils, including Balonne, Goondiwindi, Gwydir, Inverell, Moree Plains, Southern Downs, Tenterfield and Walgett. Gwydir is the current chairing council.

Gwydir Executive Assistant Robyn Phillips has arranged with the MDA for the BROC to cover the CEO's travel costs, including flights, accommodation, and car hire, amounting to almost \$800.00.

3.4. Aquatic subcommittee

As detailed at Board Meeting 370, the CEO has been appointed to the NSW Environmental Trust's Aquatic Subcommittee. The CEO is attending the first meeting of the subcommittee in Sydney on February 26. Travel expenses are covered by the NSW Government.

The subcommittee oversees the implementation of the River Connections project, which will deliver a grants program to trial new approaches to integrated river management aimed at improving health outcomes for rivers in NSW.

The subcommittee's role includes reviewing business plans, progress reports and final reports and assessing expressions of interest and grant applications for the Trust's consideration.

The subcommittee is expected to meet four times within its first year and annually thereafter. This appointment is for the duration of the project.

3.5. Natural Resources Access Regulator

While in Sydney, the CEO will meet with the New South Wales Natural Resources Access Regulator Chair Craig Knowles

This will be an opportunity to discuss the status of the regulator's establishment, how it will function and what role local government can play.

The creation of a Natural Resources Access Regulator was recommended by Ken Matthews in his report into water management and compliance in NSW.

The [Natural Resources Access Regulator Bill](#) was passed into law on 30 November 2017.

It is worth noting that the chair of the NRAR is Craig Knowles who, while in the position of Chair of the Murray Darling Basin Authority in 2014 urged the board to pursue constitutional and operational reforms and said "If the MDA didn't already exist, we'd have to invent it."

4. Administration

4.1. Finance and aged receivables report

In early January the CEO and Senior Officer prepared a report on aged receivables. Aged receivables totaled \$56,094.14 (excluding Legatus member councils). All outstanding account holders were contacted and payment was requested, with invoices re-issued where necessary.

The majority of accounts have since been paid. Payment has also been approved but not yet received from Adelaide City Council.

Moree Plains Shire Council, Swan Hill Rural City Council and Gannawarra Shire Council were among the aged receivables, but they have indicated they will not be renewing their membership at this stage.

The only other aged receivables are six individual memberships, of which several may be doubtful.

4.1.1. Legatus member councils

As previously reported to the Board, on 01/07/17 an invoice for \$28,874.23 was issued to the Legatus Group (Region 8 councils) for group membership of the MDA for 2017/18, as agreed between the MDA/Legatus earlier that year.

Since that agreement, two Legatus councils expressed their reservations about a group membership, effectively stalling the payment of the group invoice.

On January 10 the CEO credited Legatus and issued individual membership invoices to Region 8 councils for the 2017/18 year. Several councils have since paid.

The offer of a group membership through Legatus remains available and may be taken up in the 2018/19 year, with this matter to be considered at the next Legatus meeting on February 22.

The CEO is continuing to work with the Chair of Region 8, Legatus and councils in that area to strengthen memberships. Presentations to several councils has been arranged and a road trip to engage SA councils is scheduled in April.

4.2. Update on lease arrangements

The Murray Darling Association has been co-located with Parks Victoria at 463-465 High Street since 2015. It has been a mutually beneficial relationship, with Parks Victoria always willing to support the MDA in any way possible.

Now PV is looking to consolidate its Echuca office and depot into one new location, which means they will depart our current location, expected to happen some time in 2018.

A prospective tenant has already inspected the building and has expressed interest in leasing the entire space, meaning the MDA will need to relocate.

The CEO is currently in discussions with a prospective landlord on similar terms, and equally synergistic alignment of purpose and values.

4.3 Membes

The CEO and Senior Officer have commenced work on the implementation of Membes – the Murray Darling Association’s new membership management software.

Currently the designers are tweaking the software to suit the very specific regional structure and hierarchy of the MDA.

Once this is done, membership data will be uploaded based on membership category. For member councils, profiles will include details of their Mayor, CEO/GM, councillor delegates and relevant council officers.

Membes will serve as a live database of our members and delegates. It will also provide a means of communicating in a very targeted fashion with our members.

5. Projects

5.1. Building Better Regions Fund submission

In November the CEO reported to the Board on a partnership between the MDA and CSIRO to develop a project that could track the impacts of water allocation variations and that could be eligible for funding under the Building Better Regions Fund.

A funding submission to the Federal Government’s Building Better Regions Fund was lodged on 19/12/2017. The total cost of the proposed project is \$625,000, with CSIRO to contribute \$125,000 and \$500,000 sought from the BBRF. Successful applicants are expected to be announced in mid-2018.

The project seeks to develop a ground-up evaluation framework and methodology against which the community impacts of the Basin Plan can be assessed, and from which external factors can be distinguished, enabling communities and all levels of government to identify opportunities to strengthen our regions, and ensure greatest social and economic benefits via the implementation of the Plan.

6. National Conference

6.1 74th National Conference and AGM, August 29-31 2018

Planning is well underway for the 2018 National Conference, being hosted by Leeton Shire Council in Region 9. A planning committee was established immediately after the 2017 conference and first met on November 1. Three subsequent meetings have been

held and will continue monthly, then fortnightly and weekly as the conference approaches.

The CEO and Senior Officer travelled to Leeton on December 12 to attend the Region 9 AGM and tour prospective conference venues. A list of key planning dates has been established, with the event website expected to be launched in February.

Stops on the partners and study tours are currently being finalised and lists of prospective sponsors and presenters are being prepared.

7. Strategic Planning Workshop

The MDA held its 2018 Strategic Planning Workshop in Albury on January 30 and 31. All board members were in attendance except Region 12 Chair Cr Richard Marsh, with Balonne Shire Council CEO Matt Magin attending in his place. Officers from numerous chairing councils were also present.

The workshop, now in its third year, is an opportunity for the MDA regional executives to meet face-to-face to share ideas, discuss the different challenges to their regions posed by changing water availability, and to provide support for their fellow councils across the Basin.

The workshop, which also focused on good governance, featured a presentation from the Australian Institute of Company Directors, a strong supporter of the MDA.

Emma Bradbury
Chief Executive Officer

Murray Darling Association Region 7 – Adelaide Metro

Chair's Report February 2018

Since the last meeting of Region 7, I have attended three board meetings and a strategic planning workshop in Albury. It should be noted that board meetings are now held on the 4th Monday of each month. This enables notification of the financial results to reach board members in a timely way.

The financial position of the organisation remains sustainable, but because most of the income derives from membership fees, any shocks on this front will cause difficulties. With the implementation of a new accounting system reporting has improved considerably.

I also attended a strategic planning workshop. This was well attended and some useful material emerged. The focus was on implementation of the current plan across a number of goals including financial sustainability, membership and the way we conduct our business. No matters of great change emerged, rather a reinforcement of much of our current efforts.

I have prepared a further version of the overview of Adelaide's water supply, which is listed as a separate agenda item. This was tabled at the January board meeting and has resulted in a commitment by other regions to undertake similar work. This is encouraging.

Whilst the formal board meetings were relatively 'procedural' in content, the same cannot be said for debate around the Basin itself.

Following the release of the Matthews Report in September 2017, the MDBA released its report into compliance in December. Both reports are quite unequivocal in criticising NSW for not having an effective compliance system for water offtake. They also noted the significant lack of meters on properties and called for a regime of 'no meter, no water'.

The NSW government passed legislation to establish a Natural Resources Access Regulator. This was a recommendation in the Matthews report and will result in the separation of compliance from that of setting policy. The MDA office has asked all regions to provide some input to a meeting the President and CEO will be having regarding the work of the regulator. This is a separate item in the agenda.

A report by Ernst and Young into efficiency measures in the Murray Darling Basin was released in January. This sets out "opportunities to recover 450GL in additional environmental water through efficiency measures by 2014, with neutral or positive socio-economic impacts. The MDA's response to this report is also included as a separate item on the agenda.

In February there was a "Declaration" by a group of scientists and economists calling for a halt to publicly funded water recovery, a comprehensive scientific audit of what has been recovered and the establishment of an independent scientific body to monitor ongoing recovery and give advice. The MDA response was circulated to members.

We then saw the passing in the Senate of a disallowance motion preventing the change to the amount of water that could be taken from the northern rivers (70GL). This was a recommendation of the MDBA following the northern rivers review. The MDA supported the

MDBA recommendation. This has now resulted in the NSW and Victorian governments threatening to withdraw from the plan. A whole new partisan political debate has now erupted and, at the time of writing this report, it is not clear where this is all going to lead – although it doesn't seem any one is talking about not trying to achieve the overall goals of the Murray Darling Basin Plan, just the way water recovery is achieved.

Cr David Shetliffe,
Chair, Region 7 MDA
February 2018

Adelaide Water Supply – an Overview

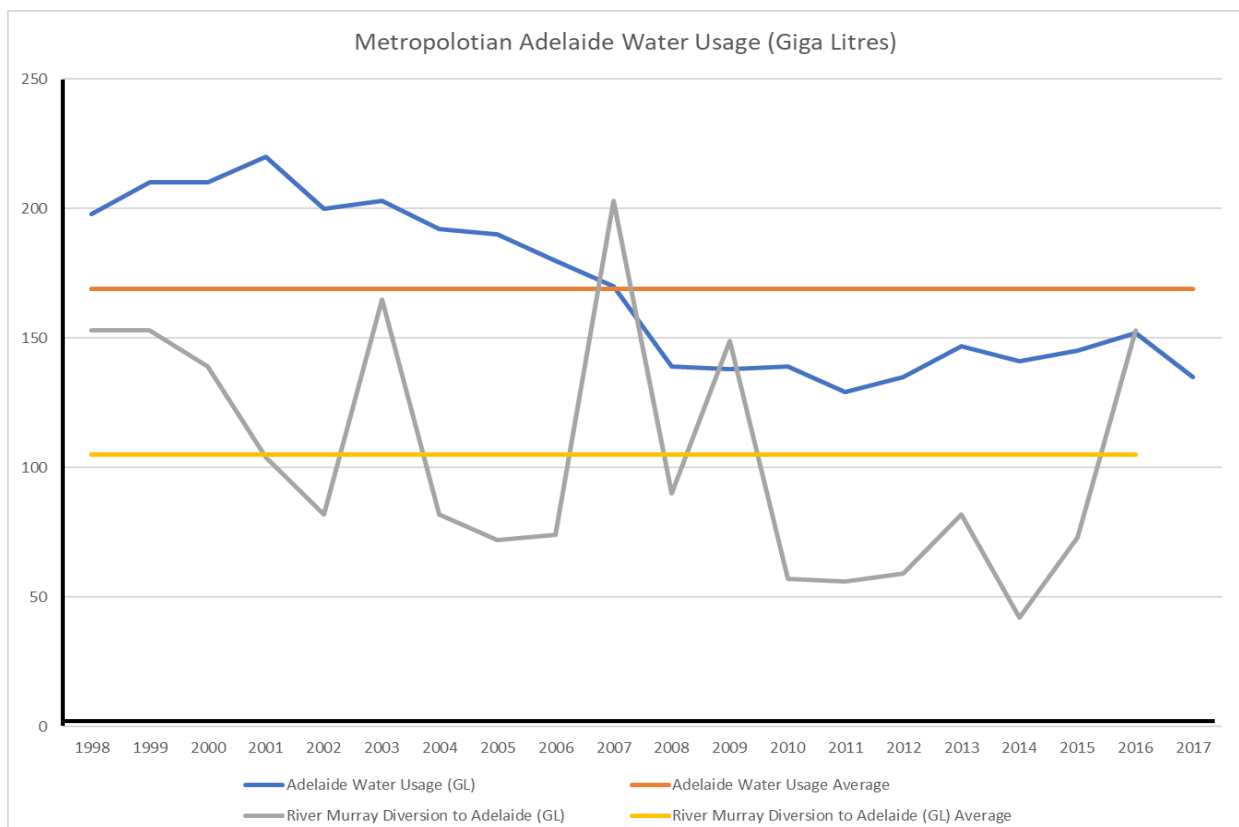
Availability of water is a major determinant of the evolution and location of all towns and cities around the world. Adelaide was established as a new free settler colony in 1836 and Colonel Light chose the site largely because of the availability of water – the Torrens and other small rivers emanating from the Mount Lofty Ranges.

The Mount Lofty Ranges catchment still provides a significant amount of Adelaide’s water supply through the 10 reservoirs linked to the greater Adelaide system. These reservoirs have a combined capacity of 100 GL. Water from the River Murray began being supplied to Adelaide in 1955 with a pipeline from Mannum to the northern part of Adelaide. A further pipeline from Murray Bridge to Onkaparinga in the South was completed in 1973.

The balance of supply between the Mt Lofty Ranges catchments and the River Murray depends on the amount of rainfall in the Mt Lofty ranges and the rate of flow in the river. The amount used from each source can vary significantly – as can the total amount of water needed.

Graph 1 shows the amount of water used each year since 1998 and the amount of water diverted from the River Murray over the same period.

Graph 1



A number of facts can be seen from the above graph:

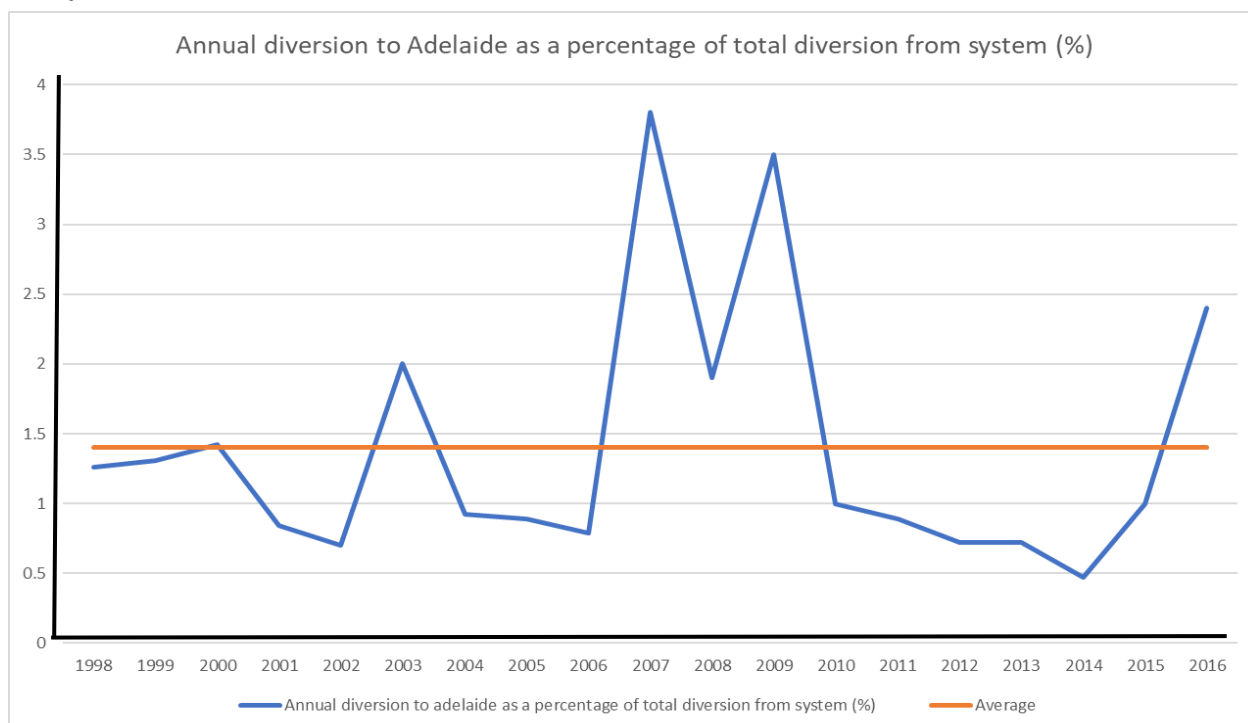
1. **Since the millennium drought in 2007 the amount of water consumed in Adelaide has dropped significantly (around 27 per cent) and remains at the lower levels.**

The drop in water supply can be attributed to a number of factors including:

- Public awareness of the need to conserve water
 - Water pricing policy
 - Investment by households in efficient watering systems (eg drippers)
 - Investments in rainwater storage tanks
 - More dense housing development with significantly less garden space
2. The amount of water diverted to Adelaide from the River Murray varies significantly from year to year. In years of lower rainfall, water from the river is used to build up holdings in the Mount Lofty Ranges reservoirs. (NB The 5 year rolling diversion cap for Adelaide is 650 GL – average 130 GL per annum. The diversion over any 5 year period is well below this level)
 3. **Over the 20 year period the average diversion from the River Murray is approximately 66 per cent or two-thirds of the water used in Adelaide.**

Graph 2 shows the amount of water diverted from the River Murray to Adelaide compared to the total amount diverted from the overall Murray Darling Basin.

Graph 2



Again it is clear that the amount diverted varies considerably each year. The impact of the drought years around 2007/8 is clear.

However, the average diversion over the 20 year period is less than 1.5 per cent of total diversion and in many years is well below 1 per cent. If the impact of the millennium drought is removed, the average is considerably less than 1 per cent.

The key issue for Adelaide is to ensure the availability and quality of water passing the pipeline extraction points (Mannum and Murray Bridge) is at the necessary level. This is very much dependent on the water levels in the Lower Lakes of the Murray. If the water level in the lakes drops, the acidity level increases. This acidity can leach back upstream and thus make the water unusable for the 1.2 million population of Adelaide.

Thus the health of the lower lakes is critical for the water supply of Adelaide.

Recycled sewerage and stormwater aquifer recharge schemes had been developed in Adelaide over many years, however the severe drought in 2006-7 resulted in a significant investment by the Commonwealth, State and local governments to increase these schemes as part of strategies to water-proof Adelaide— i.e. securing water supply.

Currently waste water schemes produce approximately 30 GL per annum. Since the recovery from waste water is around 30 per cent, this suggests that, of the approximately 145 GL provided through the water mains system, 100 GL (approximately 70 per cent) is used for drinking, washing and toilets, while 45 GL is used for watering of gardens etc.

Storm water recharge schemes have a combined capacity of 22 GL per annum. These systems are used extensively to water public parks, gardens, ovals, golf courses etc. Local government is also active in investing in water sensitive urban design for its own infrastructure and in encouraging its use in other suitable developments. Adelaide is a world leader in many of these technologies.

Also as a result of the 2006-7 drought, the State Government invested in a desalination plant in the south of Adelaide with a capacity of 100 GL per annum. Current policy is that full capacity of the plant will be used when the spot price of water from the River Murray is greater than the marginal cost of running the plant. It is currently kept running at around 10 per cent of capacity, generating 10 GL of water annually.

A brief summary of Adelaide's water supply is set out below:

- **Adelaide takes, on average, less than 1.5 per cent of the water off-take from the Murray Darling Basin**
- **On average, 66 per cent of Adelaide's water supply comes from the River Murray**
- **An additional 20 per cent comes from recycled waste water**
- **Storm water recharge schemes have the capacity to supply a further 8 per cent**
- **Since the drought of 2006-7, Adelaide's demand for water has dropped significantly and security of supply has been improved through investment in a desalination plant**

The key issue for Adelaide in terms of River Murray policy is the level and quality of water in the Lower Lakes.

**Cr David Shetliffe
Chair, Adelaide Metro Region (Region 7)
Murray Darling Association
January 2018**

**Sources:
SA Water Annual Reports
SA Government "Water for Good" report 2009
Murray-Darling Basin Authority data
Water Sensitive SA**



EY REPORT

On 19 January 2018 Ernst and Young released its [Analysis of efficiency measures in the Murray-Darling Basin](#).

The analysis was commissioned by the Department of Agriculture and Water Resources, on behalf of the Murray-Darling Basin Ministerial Council, to look at opportunities to recover 450GL in additional environmental water (upwater) through efficiency measures by 2024, with neutral or positive socio-economic impacts.

Under the Water Act, \$1.575 billion has been set aside to recover the 450GL through efficiency programs.

The more than 300 page report makes a series of recommendations which, according to the authors, would allow the 450GL to be delivered with neutral or positive socio-economic impacts.

Key messages from EY:

- There is a general lack of clarity around water recovery measures and objectives, with no common language;
- There is substantial lack of trust within communities due to complex and inconsistent messaging;
- Stakeholders are fatigued from multiple rounds of consultation and want more meaningful two-way engagement;
- Off-farm and urban projects generally lead to neutral or improved socio-economic outcomes;
- On-farm projects – the exchange of water entitlements for infrastructure investment - enable improved water efficiency and enhance on-farm productivity;
- Evidence suggests the reduction in labour from on-farm efficiency projects is small;

What EY thinks could be done:

- There needs to be a greater focus on centrally collecting information on water efficiency measures so socio-economic impacts can be better understood;
- On-farm programs should be implemented across different communities and agricultural industry areas so that specific communities or industries are not advantaged over others;
- There needs to be whole-of-government regional development programs to support structural change;
- To bridge the 62GL gap¹ up to 2750GL by 2019, off-farm and urban opportunities and on-farm opportunities with limited adverse socio-economic impacts should be pursued (DAWR has received unsolicited proposals of up to 66GL);
- The on-farm programs should be built on the principles of the pilot Commonwealth On-Farm Further Irrigation Efficiency Program (COFFIE);
- The ability to deliver the 450GL within budget will be impacted by the market water price – many stakeholders said the funding multiplier would need to be 2.0x to attract interest (**see Attachment 1**);
- The 450GL to be recovered is around four per cent of total water delivery rights held now.

- Risks include the ability to recover the water by 2024 and within budget, stakeholder perceptions, and the extent to which socio-economic impacts are addressed;
- It is important to undertake two-way community and industry leader engagement, as well as ongoing broader engagement with the community.

Where EY believes the water could come from (see Attachment 2 for more details):

26–280GL through upgrades to off-farm irrigation infrastructure

- Irrigation infrastructure operators have proposed numerous off-farm opportunities that are likely to provide savings of around 71GL, excluding GMW;
- GMW may deliver up to 209GL through evaporation minimisation and channel lining, although the costs would be significantly higher than work done to date;

24–89GL through urban and industrial opportunities

- The Adelaide Desalination Plant could be used to generate 50GL per year;
- 29GL currently held by Canberra water supplier Icon Water for future growth in the ACT could be recovered in exchange for investment in water efficiency projects;
- There are opportunities to save water in the regional centres of Toowoomba, Albury-Wodonga, Shepparton, Wagga Wagga and Mildura, however this is limited in scale;

125–253GL through on-farm opportunities for water recovery

- The majority of participants in the existing On-Farm Irrigation Efficiency Program have been small to medium sized irrigators – opportunity to reach medium and large irrigators;
- The greatest potential savings are in the Victorian Murray-Goulburn (26-52GL), Murrumbidgee (26-35GL) and NSW Murray (29-44GL).

34–70GL through integration of on and off-farm opportunities

- There are opportunities to modernise smaller irrigation networks that have not previously participated in infrastructure programs
- Potential savings of 5-9GL in the Northern Basin and 29-61GL in the Southern Basin

EY proposes two phases of implementation:

Phase 1 (2018 to 2019) - community and industry engagement, investment in building capacity and interest, pursue existing and larger opportunities and developing regional and industry delivery plans.

Phase 2 (2020 to 2024) – full implementation of all program elements and ongoing program review and refinement.

Consultation

State government and local government bodies were consulted in all Basin states and the ACT. The feedback they provided is summarised in the report. The MDA was involved in this process.

David Littleproud

Federal Minister for Agriculture and Water Resources David Littleproud has described the report as providing a pathway to delivering the 450GL. He is committed to “delivering the plan to which all Basin governments agreed, the 450 GL and delivering efficiency measures without negative social or economic impacts”.

The pathway to begin implementing the efficiency measures will be laid out when the Ministerial Council meets in April.

1. The MDBA has recommended an adjustment of 605GL to the Sustainable Diversion Limit in the Southern Basin. The adjustment is constrained by a five per cent Basin-wide adjustment limit (that is, 543GL), meaning 62GL of efficiency measures need to be implemented by 30 June 2019.

POSITION OF THE MDA

- The recovery of water across the Basin impacts different communities in different ways and there is no simple solution to the 450GL - it comes down to all levels of government working together;
- We need to leverage the successes that have already occurred in existing water recovery projects;
- The MDA has long called for a rigorous and repeatable Basin Plan impacts evaluation framework and is pleased to see this call supported by EY;
- Communities across the Basin have long called for government support to help them adjust to changes brought about by water recovery, so it's pleasing to see the importance of this support recognised by EY.

BACKGROUND ON WATER RECOVERY:

The current estimated contracted water recovery is 2106.5GL, including 1228.1GL through buybacks, 863.4GL through infrastructure projects and 15GL gifted in Queensland.

Buybacks

Between 2007 and 2013, 1138GL of water was purchased in the Basin. The speed and volume led to widespread community concern regarding potential adverse socio-economic impacts including:

- Job loss, population decline and reduced local spending;
- The 'Swiss Cheese' effect (where an irrigation network has sections of the supply system which are not operating) and increased risk of stranded assets;
- Increased reliance on purchasing allocations, thus elevating the risk profile of these irrigators.

Consequently since 2013-14 only 90GL of buybacks occurred, mainly strategic purchases. Additionally, in 2015, the Commonwealth passed legislation to limit purchases to 1500GL.

Projects

The remaining water recovered to date – **total 863.4GL approx - has been recovered through efficiency programs (see Attachment 3).**

3 Executive summary

Historic program cost

Under the Water Act, \$1.575 billion has been set aside to recover the 450GL through efficiency programs. A variety of factors will play a role in determining the overall funding requirements for the program including the value of water entitlements, funding multiple applied, participation levels, environmental conditions and commodity prices, technology advancements, government policy and utilisation of infrastructure associated with the water network.

In order to provide an indication of what an appropriate multiple might be going forward, the costing analysis has explored data from a number of historical programs, analysing the water savings per round and over time. These programs included On-Farm Irrigation Efficiency Program (OFIEP), New South Wales Private Irrigation Infrastructure Operators Program (PIIOP), Queensland Healthy Headwaters Program (HHWUE), and the Private Irrigation Infrastructure Program for South Australia (PIIP-SA). It is noted that given data limitations and inconsistencies these were the only programs able to be analysed in this way.

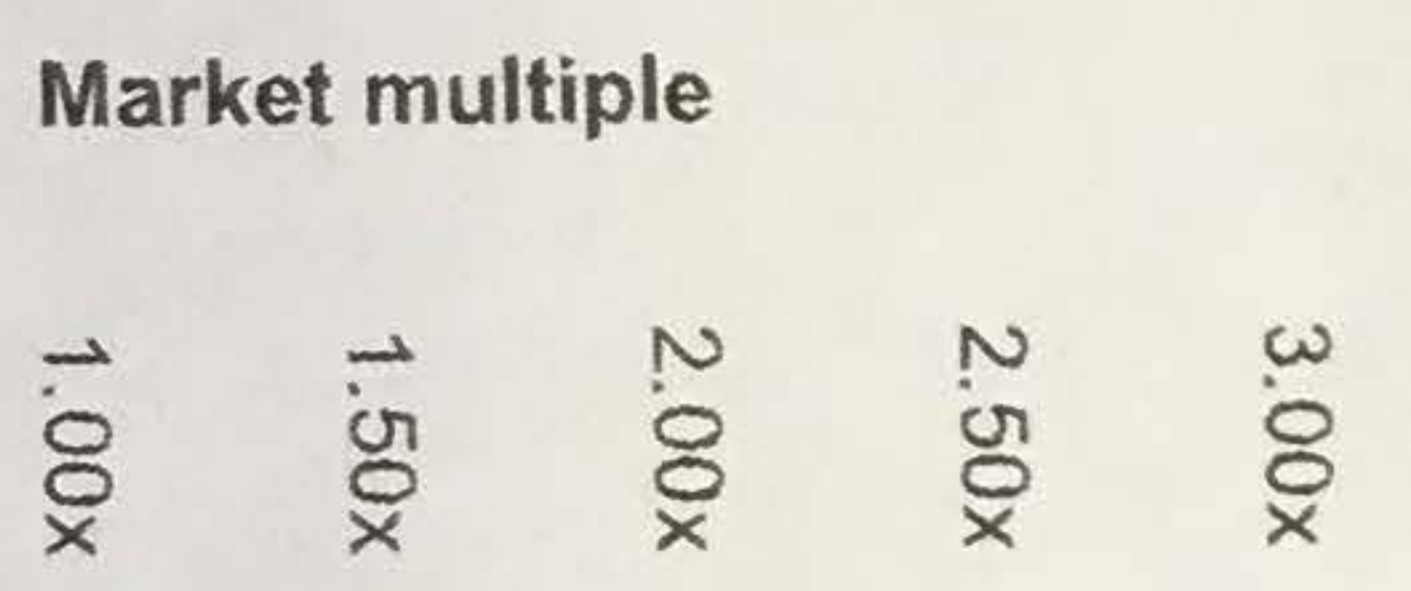
Historical averages (program round basis) of the funding per ML and unweighted funding multiples for both on and off-farm projects have been assessed, demonstrating:

- ▶ The average unweighted funding multiple for on-farm projects under OFIEP decreased from a high of 2.34x in round 2 to a low of 1.77x in round 4.
- ▶ Under HHWUE, the average unweighted funding multiple varied from a low 1.70x in round two towards a high of 2.46x in round 7.
- ▶ The average funding requirement of PIIOP was at its highest in round three (\$4,874), compared to the lowest in round two (\$3,680). However, this trend was not represented within the unweighted funding multiple with an average program low of 1.87x in round 3.
- ▶ PIIP-SA possessed the highest average unweighted funding multiple of 2.51x across both rounds of program funding.

Whilst the costing analysis utilises historical programs to provide an indication as to the most appropriate multiple for future water recovery programs, stakeholder input suggests that certain programs (such as OFIEP Rd 5, VFM, SARMS) are more representative of what future programs may require to attract participation. Throughout the consultation process, many stakeholders suggested that funding multiples of 2.0x or greater would be required in order to attract program participation. However it is noted that this is not based on detailed financial evaluation, and that there would be benefit in providing tools and support for participants to be able to undertake this evaluation.

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- 8 Cost of efficiency measures
- 9 Principles for negating adv ...
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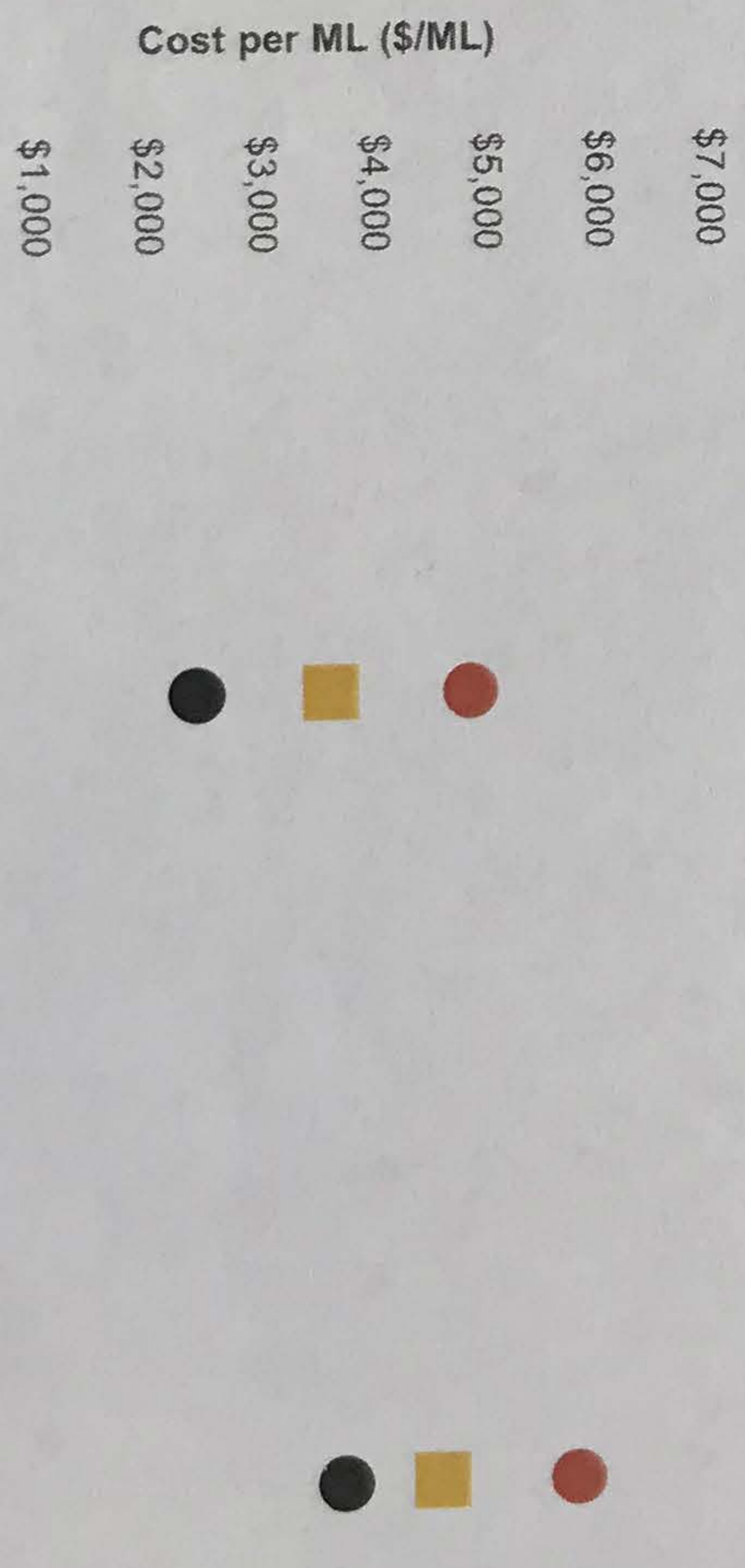
Historical water efficiency funding multiples



Category	Minimum	Average	Maximum
On-farm market multiple	1.70x	2.11x	2.46x
Off-farm market multiple	1.87x	2.25x	2.68x

Source: Data received from the Department of Agriculture and Water Resources, EY analysis.

Historical water efficiency cost per ML



Category	Minimum	Average	Maximum
On-farm cost per ML	\$2,399	\$3,599	\$4,852
Off-farm cost per ML	\$3,680	\$4,554	\$5,773

Source: Data received from the Department of Agriculture and Water Resources, EY analysis.

3 Executive summary

Opportunities for efficiency measures

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Based on an analysis of available information on water recovery achieved across different types of programs to date across the Basin, an indicative size of the future water recovery opportunity is summarised in the table below. Between 209GL to 450GL+ of water efficiencies are estimated through: 1) stakeholder input; and 2) applying assumptions of further water efficiencies to catchments or types of projects based on available data on historical efficiencies achieved.

Next steps in implementing a water efficiency program is discussed in Chapter 10, including how best to achieve 62GL by 2019.

Potential water savings (GL)		
Location	Type / Basis of Estimation	Potential Savings
Off-farm opportunities nominated by stakeholders		
Victorian Murray/Goulburn	Stakeholder estimates	0 - 239 ²
NSW Murray	Stakeholder estimates	10 - 25
Murrumbidgee	Stakeholder estimates	<10
Queensland	Stakeholder estimates	6
Sub-total		26 - 280
On-farm opportunities (EY estimates)		
Victorian Murray/Goulburn	On-farm (increase of 200-400 irrigator participants)	26 - 52
Murrumbidgee	On-farm (sensitivities to OFIEP participation figures)	26 - 35
NSW Murray	On-farm (sensitivities to OFIEP participation figures)	29 - 44
SA Murray	Reaching 10%-20% of interested irrigators in SARMS	6 - 12
Lachlan	On-farm (increase to 2-4% of SDL)	10 - 21
Macquarie-Castlereagh	On-farm (increase to 6% of SDL)	N/A - 2
Namoi	On-farm (increase to 2-4% of SDL)	3 - 12
Gwydir	On-farm (increase to 2-4% of SDL)	3 - 11
Condamine Balonne	On-farm (increase to 2-4% of SDL)	7 - 24
Border Rivers (QLD)	On-farm (increase to 4.5% of SDL)	N/A - 2
Warrego	On-farm (increase to 2-4% of SDL)	2 - 4
Moorie	On-farm (increase to 2-4% of SDL)	0 - 2
Nebine	On-farm (increase to 2-4% of SDL)	1 - 1

Source: Data from the Department of Agriculture and Water Resources, stakeholder estimates, and EY analysis.

Potential water savings (GL)		
Location	Type / Basis of Estimation	Potential Savings
Border Rivers (NSW)	On-farm (increase to 2-4% of SDL)	2 - 8
Barwon Darling	On-farm (increase to 2-4% of SDL)	N/A - 1
Intersecting Streams	On-farm (increase to 2-4% of SDL)	2 - 5
Lower Darling	On-farm (increase to 2-4% of SDL)	N/A - 1
Wimmera	Stakeholder estimates	-
Loddon	On-farm (increase to 2-4% of SDL)	3 - 6
Campaspe	On-farm (increase to 2-4% of SDL)	2 - 5
Ovens	On-farm (increase to 2-4% of SDL)	2 - 3
Broken	On-farm (increase to 2-4% of SDL)	1 - 2
Sub-total		125 - 253
Integration of on and off-farm opportunities (EY estimates)		
Northern Basin	On and off-farm (65% to 93% network efficiency)	5 - 9
Southern Basin	On and off-farm (65% to 93% network efficiency)	29 - 61
Sub-total		34 - 70
Urban and industrial opportunities (EY estimates)		
South Australia	Urban and industrial	<= 50
Australian Capital Territory	Urban and industrial	20 - 30
Urban areas within the MDB	Urban and industrial (80% to 85% or 90% efficiency)	4 - 9
Sub-total		24 - 89
Total¹		209 - 450+

¹ Total potential savings is 209GL to 690GL, noting that only 450GL will be recovered. Note totals may not add due to rounding differences.

² This large range reflects the upper bound potential for water savings which may require a significantly higher cost than invested historically, and hence not be achievable alone within the proposed multiple.

7 Opportunities for efficiency projects

Overview of existing and prior efficiency programs

- 1 Terms of reference
- 2 Glossary
- 3 Executive summary
- 4 Introduction
- 5 Potential socio-economic ...
- 6 Program design
- 7 Opportunities for efficiency measures ...
- 8 Cost of efficiency measures
- 9 Principles for negotiating adv ...
- 10 A program to achieve 450 ...
- 11 Appendices

A number of on and off-farm efficiency programs to recover water have been implemented across Basin States. Some of the main programs are illustrated below¹.

State	Programs	Cost
NSW	<p>\$1.63b for 442GL</p> <p>\$3,688 per ML</p> <p>Included programs</p> <ul style="list-style-type: none"> ▶ Private Irrigation Infrastructure Operators Program (PIIOP) – off-farm and on-farm projects (155GL) ▶ On-farm Irrigation Efficiency Program (OFIEP) – Commonwealth managed on-farm program (97GL) ▶ Irrigated Farm Modernisation (IFM) – on-farm projects (19GL) ▶ Basin Pipes – upgrading stock and domestic infrastructure (28GL) ▶ Metering – installing or upgrading meters (8GL) ▶ Nimmie-Caira – implemented by the NSW Office of Water (133GL)² ▶ Water Smart – development and uptake of smart technologies (2GL) 	
VIC	<p>\$1.36b for 191GL</p> <p>\$7,095 per ML</p> <p>Included programs</p> <ul style="list-style-type: none"> ▶ Goulburn-Murray Connections Stage 2 (GMW) – modernisation of off-farm irrigation network (102GL)³ ▶ Victorian Farm Modernisation Project (VFM) – on-farm projects (30GL) ▶ Northern Victoria Irrigation Renewal Project (NVIIRP 2) – on-farm projects (10GL) ▶ Sunraysia modernisation – off-farm project (7GL) ▶ OFIEP – Commonwealth managed on-farm program (42GL) 	
SA	<p>\$0.17b for 48GL</p> <p>\$3,623 per ML</p> <p>Included programs</p> <ul style="list-style-type: none"> ▶ Private Irrigation Infrastructure Program SA (PIPPSA) – off-farm and on-farm projects (3GL) ▶ OFIEP – Commonwealth managed on-farm program (9GL) ▶ South Australia River Murray Sustainability Program (SARMS) - on and off-farm projects (36GL) 	
QLD	<p>\$0.11b for 24GL</p> <p>\$4,583 per ML</p> <p>Included programs</p> <ul style="list-style-type: none"> ▶ Healthy Headwaters Water Use Efficiency (HHWUE) – on-farm projects (24.0GL) 	

Source: Data from the Department of Agriculture and Water Resources. All figures are current as at 30 June 2017.

¹ Water recovery figures reflect both water actually transferred to the Commonwealth and water which is contracted to be transferred. All water recoveries figures are expressed in long term average annual yield (LTAAY) terms. Water recovery amounts are calculated using the current long-term diversion limit equivalent factors (v2.05) agreed to by Ministerial Council in November 2011 or are consistent with accredited Water Resource Plans. All overland flow water recoveries have their factors individually modelled. Water recovery is reported at the point at which water savings have been received, estimated or agreed in signed contracts. Until water transfer contracts have been exchanged however, these figures may be subject to change over time.

² Note The Nimmie-Caira was largely a land and water purchase agreement with reconfiguration of water delivery infrastructure.

³ The total water transferred to the Commonwealth under the GMW Connections project was 204GL. However, 102GL was transferred under a water sale agreement and did not relate to the delivery of water infrastructure and has been excluded from the above summary.



Murray Darling Association regional feedback form
 – to Inform and Influence



Region Particulars	
Region Number	7
Region Name	Adelaide Metro
Chair	Cr David Shetliffe
Regional Committee members	Cr Arthur Mangos, City of West Torrens
	Cr Shirley Halls, City of Playford
	Cr Lynda Yates, City of Holdfast Bay
	Mr Frank Verrall, Independent Member
	Ms Pauline Frost, Life Member
<p>The MDA, represented by the National President and the CEO have been invited to meet with the Board of the newly formed New South Wales Natural Resources Access Regulator (NRAR) in Sydney on Feb 27th. The NRAR has been established by the NSW Government in response to recommendations by Ken Matthews in his report into water management and compliance in NSW. The Natural Resources Access Regulator Bill was passed into law on 30 November 2017. This legislation is very succinct (less than 14 pages) and</p> <p>Regions are required to have completed information sheets back to the CEO no later than 5pm Monday 19th Feb for their region’s submission to be included in the presentation.</p>	
<p>How confident is your region that the various responses and enquiries into the allegations raised in the Four Corners report ‘Pumped’ will have a material impact on addressing issues underpinning water extraction regulation. The Access Regulator is a positive step. The real issue is whether the recommendations will be fully implemented.</p>	
<p>Do you think that the establishment of the newly formed New South Wales Natural Resources Access Regulator (NRAR) is an appropriate/effective response? Yes, but what it does will be the test</p>	
<p>A function of the regulator is to prepare strategies, policies and procedures relating to enforcement powers under the natural resources management legislation Part 2, div 2, s11 1 (a).</p> <p>What strategies, policies and procedures relating to enforcement powers under the natural resources management legislation does your region think the regulator should consider? Universal meterage is a minimum requirement. Adequate resourcing for the task. Use technology to regularly read meters.</p>	
<p>What are the three (3) most important actions the Regulator can take to ensure the trust and confidence of your region as they undertake their role. Introduce universal meterage. Improve transparency through an independent audit process. Prosecute those who breach their license conditions</p>	
<p>Other Comments:</p>	