



Australian Government



Register of Measures

The Murray–Darling Basin Authority (MDBA) has the responsibility for maintaining a register of supply and efficiency measures agreed by Basin governments to be considered in the Sustainable Diversion Limit (SDL) adjustment mechanism. This register must be published on the MDBA website.

The register of measures reflects:

- the formal notification of the package of measures to the Authority by the Basin Officials Committee (BOC)
- all efficiency measures added to the notified package of measures until 31 December 2023
- updates to entitlements as they are acquired under the efficiency program until 31 December 2023
- all amendments to notifications up to 31 December 2023.

Because of the interdependent nature of measures, an estimate of the likely supply contribution:

- is calculated at an overall package level, rather than for each separate notified measure
- is available subject to the completion of modelling of SDL adjustment measures
- is provided through apportioning across surface water SDL resource units.

The register is provided in the form of two tables:

- Table A lists the relevant details of each notified measure (This table is current at 4 May 2018).
- Table B lists the efficiency entitlements and likely SDL adjustment for each of the Basin's surface water SDL resource units (this table is current at 17 November 2017).

Table A - Details of measures

	Measure	Proponent	Geographic location	Type of measure	Details of the measure	Surface water SDL resource units affected by the measure	Relevant constraint measures	Notification amendment approval	Date the measure entered or will enter operation
1	Chowilla Floodplain TLM Project	SA, NSW and Victoria	Chowilla Creek	Supply	The Chowilla Floodplain works is part of a program of The Living Murray (TLM) works at icon sites along the River Murray to ensure that environmental water recovered as part of TLM is used efficiently and ecological elements are maintained. The Chowilla Floodplain project involves a major environmental regulator on the Chowilla Creek and a range of complementary works. The environmental regulator will allow flows to be managed to enable flooding across the floodplain under relatively low river flow conditions.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This project is not reliant on constraint measures for implementation or operation.	BOC 48 18/05/2017	30/06/2024
2	Flows for the Future (F4F)	SA	Eastern Mount Lofty Ranges, the SA River Murray and the Lower Lakes	Supply	The project proposes activities that reduce the interception of low flows and result in additional flows to riverine environments in the Eastern Mount Lofty Ranges (EMLR) and to the River Murray including the Coorong, Lower Lakes and Murray Mouth in SA. The project will help restore the natural low flow patterns within the EMLR through measures that will improve the passage of low flows and freshes to improve ecological habitat conditions.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This project is not reliant on other supply or constraint measures for implementation or operation.	Out-of-session 28/06/2017 (following BOC 50) BOC 52 21/09/2017	30/06/2024
3	Riverine Recovery Project (RRP)	SA	600 km River Murray corridor between the SA/Victoria border to Wellington	Supply	This project aims to return a number of wetlands to a more natural wetting/drying regime which results in evaporative savings. These savings are assigned to the Cwth Government as a SA Class 9 water access entitlement. This entitlement can be used for environmental purposes either within or upstream of the SA/Victoria border.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This project is not reliant on other supply or constraint measures for implementation or operation.	Out-of-session 28/06/2017 (following BOC 50) BOC 52 21/09/2017	30/06/2024
4	South East Flows Restoration Project (SEFRP)	SA	Blackford Drain, and Coorong South Lagoon	Supply	The project will use a combination of newly constructed drains and widened existing drains within the Upper South East drainage system to divert additional water that currently flows to the sea from the Blackford Drain in the Upper South East into the Coorong South Lagoon. The diverted water will provide significant environmental outcomes for en-route wetlands of the Upper South East through the provision of additional water of suitable quality, as well as salinity improvements in the Coorong South Lagoon.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This project is not reliant on other supply or constraint measures for implementation or operation.	BOC 48 18/05/2017 BOC 51 29/08/2017	30/06/2024
5	SA Riverland Floodplain Integrated Infrastructure Program (SARFIIP)	SA	SA River Murray between SA/Victoria border and Lock 1; Pike Floodplain; Katarapko Floodplain	Supply	The project aims to create an integrated and resilient floodplain along the SA River Murray, between the border and Lock 1, through a package of works and measures that enable floodplain inundation and freshening of groundwater lenses with particular focus on the Pike and Katarapko floodplains. Environmental works on the Pike and Katarapko floodplains will optimise the frequency, duration and extent of inundation events to protect and restore these floodplain ecosystems and contribute to Murray-Darling Basin Plan (MDBP) environmental outcomes. Salinity management measures will complement the floodplain inundation works to manage ecological risk, enhance ecological condition by maximising the area of soil salinity that is	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This project is not reliant on other supply or constraint measures for implementation or operation.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024

					within the tolerances of target vegetation and to manage any long term and real time in-stream salinity risk.				
6	Belsar-Yungera Floodplain Management Project	Victoria	The Belsar-Yungera Floodplain is located on the River Murray floodplain, approximately 30 km upstream of the Euston weir, near Robinvale in northwest Victoria.	Supply	This proposed supply measure will maintain and improve flora and fauna habitat values and provide periodic breeding opportunities for wetland species, such as fish, frogs and waterbirds. Managed flows will be able to be delivered to 2,370 ha of highly valued floodplain, representing one third of the total area. The works can be operated flexibly to meet the water requirements of different vegetation communities, mimicking a broad range of River Murray flows up to 170,000 ML/day. Through the construction of three large regulators, a series of smaller supporting regulators, track raising (levees) and a pipeline (to allow use of temporary pumps) this project will connect extensive areas of floodplain through tiered watering events. These works will make use of natural flow paths to increase the extent, frequency and duration of inundation from either MDBP flows or pumping during low flow events.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
7	Burra Creek Floodplain Management Proposal	Victoria	The Burra Creek floodplain is located on the western bank of the River Murray just upstream of the junctions with the Murrumbidgee and Wakool Rivers. Burra Creek is a 54 km anabranch of the River Murray that diverges from the river near Piangil and re-joins to the north.	Supply	The proposed works will enable inundation of an area of 407 ha. This represents 33% of the total forest area and almost all of the flood dependent communities found within the forest, and provides a greater extent of watering than is possible under MDBP flows. The works involve the construction of three large regulators, raising tracks to form levees, and the removal of barriers to flow on the floodplain.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
8	Gunbower Forest TLM Project	Victoria, SA and NSW	Gunbower Forest is situated on the River Murray floodplain in northern Victoria between Torrumbarry and Koondrook.	Supply	A suite of engineering works have been built through TLM to deliver environmental water to the Gunbower Forest Icon Site, watering up to 4,800 ha. These works and associated operating regime have been designed to achieve the ecological objectives that have been set for the forest. The works include two main components: <ul style="list-style-type: none"> • Lower Landscape Works — target the forest wetlands and use relatively small volumes of water. Works included refurbishing existing regulators within the forest, constructing new regulators and decommissioning of a single regulator. These regulators deliver water from either Gunbower Creek or the River Murray (when flows exceed 14,000 ML/day). • Hipwell Road Channel — targets large areas of river red gums and can create the conditions required for large colonial waterbird breeding events. Works include construction of a channel to deliver water from Gunbower Creek to the forest, a new weir in Gunbower Creek and associated works. 	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures, but relationships amongst the Goulburn, Hume to Yarrawonga, Yarrawonga to Wakool constraints proposals and the broader constraints package may have implications for the proposed operating strategy.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
9	Gunbower National Park Floodplain	Victoria	The Gunbower National Park is located on the mid-Murray floodplain	Supply	The project has been developed to enable the delivery of environmental water to the wetlands and forest of the Gunbower National Park. It will mimic a natural flood event of up to 50,000 ML/day across 500 ha. This	This measure identifies all southern connected basin SDL resource units as affected units	Not directly linked to any specific constraint measures but implementing a	Out-of-session 28/06/2017	30/06/2024

	Management Project		in northern Victoria. It sits within the broader Gunbower Forest, an internationally recognised wetland system in the Murray-Darling Basin. The forest forms part of the Gunbower-Koondrook-Perricoota Forest icon site under the TLM Initiative, together with the Koondrook-Perricoota Forest in NSW.		includes almost 50% of the permanent and temporary wetlands in the project area and 20% (250 ha) of river red gum with flood dependent understorey. The package of works include regulator and creek enhancement works. The mid forest works will consist of a 100 ML/day pump station location on the River Murray and a number of regulators. This will enable the provision of water to approximately 500 ha of Gunbower National Park, currently unable to be watered by any other infrastructure.	for the purposes of notifying supply measures.	confirmed package of constraint measures may have implications for the proposed operating strategy.	(following BOC 50)	
10	Guttrum and Benwell State Forests Floodplain Environmental Works Project	Victoria	Guttrum and Benwell Forests are located on the mid-Murray floodplain of northern Victoria, downstream of Koondrook and have a combined area of 1,930 ha.	Supply	The project will reinstate a more natural flooding regime for the Guttrum and Benwell Forests, addressing, in particular, the reduced frequency and duration of floods. The proposed works will water 1,200 ha via pump stations, including semi-permanent wetlands and 82% of the river red gum forest with flood dependent understorey. The works will include two separate pump stations to deliver environmental water into Guttrum Forest, one pump station in Benwell Forest and containment works (regulators and levees) in both forests to contain water on the floodplain. The works have been designed to meet the environmental watering requirements of the ecological values by mimicking a 26,000 ML/day flood event in the River Murray for Guttrum Forest and a 24,000 ML/day flood event for Benwell Forest.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
11	Hattah Lakes North Floodplain Management Project	Victoria	The Hattah Lakes North site is located in north western Victoria on the western bank of the River Murray between Robinvale and Red Cliffs. The project area lies within the Murray-Kulkyne Park and the Hattah-Kulkyne National Park.	Supply	This project will complement TLM works at the Hattah Lakes Icon Site by enhancing flooding across higher floodplain terraces. The project will also increase the flexibility for environmental water management across the lakes. The proposed works will water an additional 1,130 ha of floodplain through the construction of two new regulators, a causeway across an existing track and 1.7 km of levees along track alignments.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
12	Hattah Lakes Environmental Flows TLM Project	Victoria, SA and NSW	Hattah Lakes is in north-west Victoria, on the bank of the River Murray between Robinvale and Mildura.	Supply	The project aims to deliver a watering regime that will achieve the ecological objectives for the Hattah Lakes TLM Icon Site. The on-ground works have been designed to increase the frequency, duration and extent of flooding across the lakes and surrounding floodplain. The package of works enables watering of 6,000 ha and includes: <ul style="list-style-type: none"> • A new pumping station at Messenger's Crossing • Sill lowering in Chalka Creek South • Four new regulators (Messenger's, Oatey's, Cantala, Kramen) and associated works 	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures, but relationships amongst the Goulburn, Hume to Yarrowonga, Yarrowonga to Wakool constraints proposals and the broader constraints package may have implications	BOC 45 16/02/2017	The measure is operational. The works were commissioned in 2013.

					<ul style="list-style-type: none"> • Refurbishment of an existing regulator (Little Hattah) • Three new stop banks or levees. 		for the proposed operating strategy.		
13	Lindsay Island (Stage 1) Upper Lindsay watercourse Enhancement TLM Project	Victoria, SA and NSW	Lindsay Island is downstream of the junction of the Murray and Darling Rivers and lies within the Murray-Sunset National Park.	Supply	<p>Lindsay Island is part of the Lindsay-Wallpolla Icon Site. The Stage 1 works were funded by TLM and aimed to maintain existing high quality habitat for native fish, increase the extent of flowing habitat on Lindsay Island by about 28 km, improve fish passage between the Lindsay Island anabranches and the River Murray and improve the condition of riparian vegetation. These works will contribute to achieving the ecological objectives that have been set for the site, focusing on in-stream habitat. The works include three new regulators:</p> <ul style="list-style-type: none"> • Upper Lindsay River regulators (north and south inlets) • Mullaroo Creek regulator and fishway. 	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures, but relationships amongst the Hume to Yarrowonga, Yarrowonga to Wakool, Lower Murray constraints proposals and the broader constraints package may have implications for the proposed operating strategy.	BOC 45 16/02/2017	The measure is operational. The works were commissioned in 2015.
14	Lindsay Island (Stage 2) Floodplain Management Project	Victoria	The project is located on the River Murray floodplain in north west Victoria, 100 km west of Mildura. Lindsay Island is downstream of the junction of the Murray and Darling Rivers and lies within the Murray-Sunset National Park.	Supply	<p>The Lindsay Island Floodplain Project will inundate 5,152 ha of the floodplain and connect many parts of the floodplain through tiered watering events, including areas of unique fast-flowing aquatic habitat, through to sections of black box, lignum and onto the higher alluvial terraces. The proposed works will be operated in tandem with the completed TLM works at this site (Lindsay State 1) and Lock 7 to mimic flows of 40,000 ML/day to 120,000 ML/day.</p> <p>The proposed works include two components:</p> <ul style="list-style-type: none"> • Primary: Berribee Regulator and fishway, five containment regulators and 2.6 km of levees along track alignments. • Secondary: 13 regulators and associated works, and 4.9 km of levees along track alignments. 	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
15	Mulcra Island Environmental Flows TLM Project	Victoria, SA and NSW	Mulcra Island is located on the River Murray floodplain in north-west Victoria, approximately 70 km west of Mildura.	Supply	<p>Mulcra Island is part of the Lindsay-Wallpolla Islands Icon Site. The works have been funded through TLM and will assist in achieving the ecological objectives that have been set for the icon site by increasing the frequency, duration and extent of wetland and floodplain inundation, improving fish access to the creek and introducing flows to the upper Potterwalkagee Creek. The works enable watering of 820 ha included the construction of seven environmental regulators and associated works, including sill lowering, stream rehabilitation and upgrading access tracks.</p>	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures, but relationships amongst the Hume to Yarrowonga, Yarrowonga to Wakool, Lower Murray constraints proposals and the broader constraints package may have implications for the proposed operating strategy.	BOC 45 16/02/2017	The measure is operational. The works were commissioned from 2013-2015.
16	Nyah Floodplain Management Project	Victoria	The Nyah Floodplain Management Project is located in the Nyah Vinifera Regional Park on the western bank of the River Murray, 30 km north of Swan Hill. This floodplain includes 913 ha of wetland, forest and woodland areas.	Supply	<p>The proposed works will water almost 500 ha of floodplain within Nyah Forest, replicating River Murray flows of up to 25,000 ML/day. The works will influence over 53% of the total forest area and almost all of the flood dependent communities. The works consist of four regulators, three on the downstream end of Parnee Malloo Creek and one on the upstream end. Additional works to contain water within the forest include 1.7 km of low level track raising, forming a levee at the downstream end of the forest.</p>	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024

17	Vinifera Floodplain Management Project	Victoria	The Vinifera Floodplain Project is located in the Nyah Vinifera Regional Park on the western bank of the River Murray, 30 km north of Swan Hill.	Supply	The Vinifera Floodplain project will water up to 350 ha of floodplain within Vinifera Forest. This represents 55% of the total forest area (638 ha) and almost all of the flood dependent communities. The proposed works involve construction of four regulators and 1.1 km of low level track raising to enable control of both flood and pumped flows into and out of Vinifera Creek. Water will be delivered to the site through a combination of natural inflows or temporary pumping when river flows are insufficient.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
18	Wallpolla Island Floodplain Management Project	Victoria	The Wallpolla Island Project is located in Victoria on the River Murray floodplain, downstream of the junction of the Murray and Darling Rivers and approximately 40 km west of Mildura. The site is part of the Murray-Sunset National Park.	Supply	Wallpolla Island is part of TLM's Lindsay-Wallpolla Islands Icon Site. The proposed works will complement existing TLM works at this site. The project will increase the frequency and duration of floodplain inundation across 2,650 ha, providing significant benefit to nationally important species, threatened vegetation communities, ecological values, carbon cycling and downstream water quality. This will benefit both Wallpolla Island and the broader Lower Murray region. The proposed works include four major regulators, 22 smaller containment regulators and 4.5 km of levees (raised tracks). The works have been designed to complement weir pool manipulation activities (Locks 8 and 9) and connect areas of flowing aquatic habitat with sections of black box, lignum and higher alluvial terraces. This will enable watering at a landscape scale, mimicking flows of 30,000–120,000 ML/day.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures but implementing a confirmed package of constraint measures may have implications for the proposed operating strategy.	BOC 48 18/05/2017	30/06/2024
19	Barmah-Millewa Forest Environmental Water Allocation	Victoria and NSW	The Barmah-Millewa Forest consists of the Barmah Forest in Victoria and the Millewa group of forests in NSW. It is the largest River Red Gum forest in Australia and covers approximately 66,000 ha of floodplain between the townships of Tocumwal, Deniliquin and Echuca.	Supply	Rule change to vary the rules associated with the water set aside by Victoria and NSW in an environmental account (the Barmah-Millewa Forest Environmental Watering Account or BMFEWA) to water the Barmah-Millewa Forest proposed to allow the use of other environmental entitlements to target the environmental requirements specified in the MDBP. This measure proposes to not initiate or continue release from BMFEWA if a four monthly flood has already occurred.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures, but there is potential that the implementation of the Hume to Yarrawonga and Yarrawonga to Wakool constraints proposals and the broader constraints package could enhance project outcomes.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
20	Flexible Rates of Fall in River Levels Downstream of Hume Dam	Victoria and NSW	Hume Dam is located approximately 27 km east of Albury, NSW.	Supply	Rule change to allow Hume releases to be reduced more quickly when flows have not been elevated for an extended period beforehand, with the water saved released at a different point in time or in a different flow pattern that would provide additional environmental benefits. The additional flexibility improves Hume Dam operational efficiency.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraints measures.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
21	Hume Dam airspace management and pre-release rules	Victoria and NSW	Hume Dam is located approximately 27 km east of Albury, NSW.	Supply	Rule change to allow future environmental water releases in airspace management.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Project success is not directly linked to any specific constraint measures, but there is potential that the implementation of the Hume to Yarrawonga	Out-of-session 28/06/2017 (following BOC 50) BOC 52	30/06/2024

							and Yarrawonga to Wakool constraints proposals and the broader constraints package could enhance project outcomes.	21/09/2017	
22	Improved Regulation of the River Murray (IRRM) ¹	Victoria and NSW	River Murray system, in particular along the River Murray reach from Hume Dam to SA Border.	Supply	The proposal was to formalise recent observed improvements in operational loss performance. BOC did not agree to include the project as part of the modelled package of supply measures.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to any specific constraint measures.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
23	Computer Aided River Management (CARM) Murrumbidgee	NSW	This measure applies to the whole of the Murrumbidgee regulated river system. The Murrumbidgee River is a very complex regulated river basin which provides bulk water supplies from the two main storages, Blowering and Burrinjuck Dams, to satisfy downstream demands for major irrigation areas (Coleambally and Murrumbidgee), other private diverters, important Ramsar wetlands and key towns in the Riverina region.	Supply	The CARM project aims to use better information in the form of metering, inundation models and more accurate loss estimates to allow operators to more accurately make releases to meet downstream orders. The saved operational loss may then be calculated and set aside to achieve environmental outcomes. A callable entitlement as a result of the envisaged savings will allow delivery of previous losses (which were also contributing to environmental outcomes) in a more managed way.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to constraint measures but will assist in the operational implementation of the Murrumbidgee constraints management strategy (see separate supply measure notification) and is expected to improve environmental outcomes in the Murrumbidgee.	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017 BOC 52 21/09/2017	30/06/2024
24	Improved Flow Management Works at the Murrumbidgee River - Yanco Creek Offtake	NSW	The site of the proposed works is at the Yanco Creek off-take from the Murrumbidgee River, approximately 20km west of Narrandera.	Supply	This proposal aims to return the Yanco Creek system closer to a pre-development wetting/drying regime, while improving infrastructure that supplies irrigation and stock and domestic water. Upgrades to Yanco Weir on the Murrumbidgee River would result in more control over flows through the proposed Yanco Creek regulator. This may provide the Cwlth Environmental Water Holder and the Office of Environment and Heritage with more flexibility in managing flows within the Murrumbidgee River system.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	The Murrumbidgee constraints management strategy will improve the ability to release water from storages to create higher flows along the Murrumbidgee River. The improved flow management works set out in the Improved flow management works at the Murrumbidgee Rivers – Yanco Creek off-take measure, will further improve the environmental	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017	30/06/2024

¹ IRRM was not modelled as part of the SDL adjustment determination

							outcomes for the mid-Murrumbidgee wetlands.		
25	Modernising Supply Systems for Effluent Creeks – Murrumbidgee River	NSW	The Yanco Creek system is an effluent creek within the lowland reaches of the Murrumbidgee River on the Riverina Plain, between Narrandera in the northeast and the confluence of the Billabong Creek with the Edward River at Moulamein in the southwest.	Supply	This proposal involves returning parts of three creek systems closer to a pre-development wetting/drying regime, while improving infrastructure that supplies irrigation and stock and domestic water. This project may provide the Cwlth Environmental Water Holder and the Office of Environment and Heritage with more flexibility in managing flows within the Murrumbidgee River system.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This measure is not directly linked to any constraint measures. Implementation of the Murrumbidgee constraints management strategy is not expected to lead to different outcomes for this supply measure.	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017 BOC 52 21/09/2017	30/06/2024
26	Nimmie Caira Infrastructure Modifications Proposal	NSW	The Nimmie-Caira forms part of the lower Murrumbidgee River system located northwest of Balranald in southern NSW. The Nimmie-Caira comprises the southern floodplain area of the Murrumbidgee River near the confluence with the Lachlan River that is generally dominated by lignum shrubland, and is adjacent to Yanga National Park.	Supply	Reconfigure water delivery infrastructure to more effectively deliver environmental flows to the Nimmie-Caira floodplain and other parts of the Lowbidgee. This project, along with the Murray and Murrumbidgee Valley National Parks SDL adjustment supply measure, has the potential to supply significant additional environmental benefit to the area.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to constraint measures but implementing the Murrumbidgee constraints management strategy will provide outcomes that are complimentary to this Nimmie-Caira infrastructure modifications supply measure.	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017	30/06/2024
27	SDL offsets in the Lower Murray NSW	NSW	The measure is in the lowland reaches of the River Murray and Darling Rivers in southwest NSW. It is within the Riverland-Chowilla Floodplain hydrologic indicator site under the MDBP, which includes the Riverland Ramsar site and TLM Chowilla Floodplain and Lindsay-	Supply	The project aims to improve environmental water delivery and achieve better environmental and operational outcomes than achieved under the SDL benchmark model. This is to be done through the manipulation of weir pools, construction of a replacement pump station for Lake Cullulleraine (in Victoria), and works in the Carrs, Capitts and Bunberoo Creek systems to provide evaporative and seepage water savings. Weir pools can create unnatural inundation of connected wetlands when the river is held artificially high. Lowering the weir pool can be used to return wetlands to a more natural wetting/drying regime, while raising it can allow water to reach areas that would be difficult to water under most conditions. The strategy of raising and lowering the weirs should provide an environmental benefit compared to an artificially constant weir pool level.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to constraint measures, but implementing the Hume to Yarrowonga, Yarrowonga to Wakool and SA Murray Key Focus Area constraints will provide outcomes that are complementary to this supply measure.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024

			Wallpolla Islands icon sites.						
28	2011 Snowy Water Licence Schedule 4 Amendments to River Murray Increased Flows (RMIF) Call Out Provisions	NSW	The Snowy Scheme is located in the NSW Snowy Mountains.	Supply	Amendments to Snowy Hydro licence in 2011 allow the water recovered by RMIF to be held and called out. Previously the release of the water was at the discretion of Snowy Hydro and was generally at times suited to Snowy Hydro's commercial outcomes. The proposal intends to provide a means to control the timing of RMIF water releases from the Snowy Scheme, allowing more flexibility to achieve environmental outcomes targeted in the River Murray below Hume Dam.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to constraint measures, but implementing the Hume to Yarrowonga, Yarrowonga to Wakool and SA Murray Key Focus Area constraints proposals will provide outcomes that are complementary to this supply measure.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
29	Menindee Lakes Water Savings Project (including consideration of constraints in the Lower Darling key focus area)	NSW	The Menindee Lakes system are key storages in the Lower Darling system, supplying towns and irrigation along the Murray and Lower Darling rivers. The Lower Darling River System is located in southwestern NSW, extending along the Darling River from the Menindee lakes storages to the upstream limit of the Wentworth Weir pool near Burtundy.	Supply	This project is a package of operational changes and infrastructure works designed to improve the efficiency of the Menindee Lakes system. The enhanced Menindee project introduces some new works and measures to incorporate a wider range of infrastructure, operations, regulatory and adjustment options which in combination will deliver greater water efficiency savings. The proponent acknowledges the need for consultation with communities and the need to set out transparent governance arrangements. As part of the Menindee Lakes Water Savings Project the Lower Darling key focus area investigates opportunities to address physical and policy constraints to the delivery of higher regulated flows (up to 14,000 ML/day at Weir 32). Investigations will include the potential effects of higher flows on third parties and mitigation options to address unacceptable impacts (including easements and/or infrastructure) to allow the delivery of these flows (to support improved river and wetland health outcomes). Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	The measure includes the concept proposal for the Lower Darling constraints area. This will complement the implementation of the three Murray constraints concept proposals for the River Murray (see separate supply measure notifications).	Out-of-session 28/06/2017 (following BOC 50) BOC 52 21/09/2017 BOC 57 1/12/2017	30/06/2024
30	TLM environmental works and measures - Koondrook-Perricoota (KP) Forest Flood Enhancement proposal	NSW, Victoria and SA	KP Forest is located in the Riverina region of NSW, downstream of Torrumbarry Weir on the NSW side of the River Murray. It extends from the area opposite the Victorian township of Torrumbarry in the south to a few km from Barham in the north.	Supply	KP Forest is a highly significant floodplain ecosystem on the River Murray in NSW. The KP Forest is a large mosaic of river red gum, black box and grey box communities, interspersed by wetland ecosystems in NSW. Covering 32,000 ha the state forest (Crown land) is managed by Forests NSW and is listed on the Register of the National Estate. The structures have been built and partially commissioned by NSW Water and MDBA River Murray Operations.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	The Yarrowonga to Wakool Reach constraints management strategy, one of three integrated constraints measures for the River Murray (see separate supply measure notifications for the Hume to Yarrowonga and River Murray in SA Constraints measure business cases), which aims to relax flow constraints in the Thule and Barbers Creeks systems to provide better outcomes for the KP icon site beyond those outlined in this supply measure.	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024 The works have been built and partially commissioned by NSW Water and MDBA River Murray Operations.

31	Murray and Murrumbidgee Valley National Parks SDL Adjustment Supply Measure	NSW	This supply measure proposal consists of two elements, involving a package of works and other measures at point locations across two areas: a) Yanga (Murrumbidgee Valley National Park) near Balranald on the Lower Murrumbidgee River; and b) Millewa forest (Murray Valley National Park) near Deniliquin on the River Murray.	Supply	The proposal is for a suite of works across the national park estate in the Murray and Murrumbidgee valleys. It aims to deliver more targeted environmental watering than achieved under benchmark conditions of development and benefit public land areas exceeding 70,000 ha. Benefits identified include improved native fish outcomes and a reduction in the frequency and level of flooding on private land holdings and blackwater events.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Not directly linked to constraint measures but implementing the Murrumbidgee and Murray constraints management strategies (See separate supply measure notifications) will provide outcomes that are complementary to this supply measure proposal.	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017	30/06/2024
32	Enhanced environmental water delivery (EEWD)	NSW, Victoria and SA	EEWD involves changes to the planning, delivery, site management and evaluation stages of environmental water management across the southern connected basin. The proposal interacts with the operation of floodplain regulators, weirs, wetland watering infrastructure, and barrages in Lake Alexandrina and Lake Albert.	Supply	This project will achieve enhanced environmental outcomes by increasing environmental water holders' ability to time releases of environmental water from dams with increases in natural flows caused by rainfall. Proponents and environmental water holders will work together to explore opportunities to better mimic natural conditions without impacting long and short term reliability. The environmental benefits, in part, will be dependent on the extent to which constraints projects are implemented. Any changes will be tested progressively and monitored in an adaptive management process consistent with agreed constraints outcomes. Proponents acknowledge the need for focussed engagement and consultation with communities on this project.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures. The identification of affected units does not constitute an agreement between jurisdictions on apportioning the supply contribution.	EEWD is dependent on Constraints Management Implementation: Hume to Yarrowonga; Yarrowonga to Wakool Reach; Goulburn; Murrumbidgee; Lower Darling; SA Murray.	BOC 52 21/09/2017 BOC 56 24/11/2017 BOC 57 1/12/2017	30/06/2024
33	New Goulburn constraints measure ² (replacing Goulburn River key focus area constraints-as-supply measure)	Victoria	The new Goulburn constraints measure encompasses the mid and lower sections of the Goulburn River, extending from Lake Eildon to the connection with the River Murray near Echuca.	Constraints	Investigation of opportunities to address in-channel constraints to the delivery of higher regulated flows up to 20,000 ML/day at Shepparton. Allowing the delivery of flows to the top of the bank would improve river health outcomes. This work will be done in a staged and bottom-up way with communities to understand the risks, impacts and costs, and develop feasible, practical and acceptable solutions to mitigate third party impacts. Building on this work, in close consultation with landholders and communities, further improvements to environmental water delivery will also be investigated. Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Hume to Yarrowonga (Murray Stem; Victoria); Yarrowonga to Wakool (Murray Stem; NSW)	Goulburn River key focus area constraints-as-supply measure — withdrawn out-of-session 28/06/2017 (following BOC 50)	30/06/2024

² New Goulburn constraints was not notified as a supply measure and has not been included in the SDL adjustment determination

34	Hume to Yarrowonga key focus area	Victoria and NSW	The River Murray and its floodplain, between Hume Dam and Yarrowonga.	Constraints-as-supply	Investigation of opportunities to address physical and policy constraints to the delivery of higher regulated flows (up to 40,000 ML/day from Hume Dam). Investigations will include the potential effects of higher flows on third parties and mitigation options to address unacceptable impacts (including easements and/or infrastructure) to allow the delivery of these flows (to support improved river and wetland health outcomes). Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Yarrowonga to Wakool (Murray Stem; NSW); Goulburn (Victoria); Lower Murray (SA)	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
35	Murrumbidgee key focus area	NSW	The proposed relaxation of flow constraints in the Murrumbidgee valley will result in increased flows at environmentally beneficial times from the major headworks storages (Burrinjuck and Blowering Dams) to the confluence of the Murrumbidgee and Murray Rivers below Balranald.	Constraints-as-supply	Investigation of opportunities to address physical and policy constraints to the delivery of higher regulated flows (up to 40,000 ML/day at Wagga Wagga). Investigations will include the potential effects of higher flows on third parties and mitigation options to address unacceptable impacts (including easements and/or infrastructure) to allow the delivery of these flows (to support improved river and wetland health outcomes). Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This supply measure is for the Murrumbidgee constraints management strategy and will improve the ability to release water from storages to create higher flows along the Murrumbidgee River.	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017	30/06/2024
36	SA Murray key focus area	SA	River Murray in SA, from the SA border to the Coorong, Lower Lakes and Murray Mouth.	Constraints-as-supply	Investigation of opportunities to address physical and policy constraints to the delivery of higher regulated flows up to 80,000 ML/day at the SA border. Higher flows are important for maintaining longitudinal connectivity from the border to the Coorong, Lower Lakes and Murray Mouth and promoting lateral connectivity to deliver water to the wetlands, floodplains, creeks and anabranches connected to the main river channel. Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	Hume to Yarrowonga (Murray Stem; Victoria); Yarrowonga to Wakool (Murray Stem; NSW); Murrumbidgee (NSW); Goulburn (Victoria); Lower Darling (integrated into Menindee Lakes Water Savings Project, NSW).	Out-of-session 28/06/2017 (following BOC 50)	30/06/2024
37	Yarrowonga to Wakool junction key focus area	Victoria and NSW	The Yarrowonga to Wakool Reach encompasses the mid-Murray downstream of Yarrowonga Weir to the Wakool junction including the Edward, Wakool and Niemur Rivers.	Constraints-as-supply	Investigation of opportunities to address physical and policy constraints to enable the delivery of higher flows (up to 30,000 ML/day downstream of Yarrowonga Weir, with a buffer for flows up to 50,000 ML/day). NSW will consult communities on mitigation options to address unacceptable impacts (including easements and/or infrastructure) to allow the delivery of these flows (to support improved river and wetland health outcomes). Landholder acceptance of potential works will be critical. This project must be considered in relation to the other southern connected Basin constraints projects.	This measure identifies all southern connected basin SDL resource units as affected units for the purposes of notifying supply measures.	This supply measure is for the Yarrowonga to Wakool Reach constraints management strategy, one of three integrated constraints measures for the River Murray (see separate supply measure notifications for the Hume to Yarrowonga and SA Murray constraints measure business cases).	Out-of-session 28/06/2017 (following BOC 50) BOC 51 29/08/2017	30/06/2024

38	On Farm Irrigation Efficiency and Other Water Use Efficiencies	Cwlth of Australia funding Cwlth or Basin State undertaking	This notification outlines the set of works that can be categorised as an efficiency measure through 'on farm irrigation efficiency and other water use efficiencies'	Efficiency	<p>The on farm irrigation and other water use efficiencies measures include works that could be undertaken on farm and/or off farm with the participation of consumptive water users.</p> <p>The aim of these works is to decrease the quantity of water required for one or more consumptive uses in a set of surface water SDL resource units, compared with the quantity required under the benchmark conditions of development.</p> <p>The water savings from these efficiency works can then be transferred to the Cwlth, forming part of the Cwlth environmental water holdings.</p>	<p>ACT (SS1); Victorian Murray (SS2); Kiewa (SS3); Ovens (SS4); Broken (SS5); Goulburn (SS6); Campaspe (SS7); Loddon (SS8); Wimmera-Mallee (SS9); SA Non-Prescribed Areas (SS10); SA Murray (SS11); Marne-Saunders (SS12); Eastern Mount Lofty Ranges (SS13); NSW Murray (SS14); Murrumbidgee (SS15); Lachlan (SS16); Intersecting Streams (SS17); Lower Darling (SS18); Barwon-Darling Watercourse (SS19); Macquarie-Castlereagh (SS20); Namoi (SS21); Gwydir (SS22); NSW Border Rivers (SS23); Queensland Border Rivers (SS24); Moonie (SS25); Condamine-Balonne (SS26); Nebine (SS27); Warrego (SS28); Paroo (SS29)</p>	<p>Relevant focus areas from Constraints Management Strategy: Hume to Yarrowonga (Upper Murray); Below Yarrowonga to Wakool Junction (Mid-Murray); Goulburn; Murrumbidgee; Lower Darling; Gwydir; SA Lower Murray.</p>		30/06/2024
39	Urban or Industrial and Mining areas water efficiency	Cwlth of Australia funding Cwlth or Basin State undertaking	This notification outlines the set of works that can be categorised as an efficiency measure through 'urban or industrial and mining areas water efficiency'	Efficiency	<p>These efficiency measures consist of works that may be undertaken in urban or industrial and mining areas with the participation of consumptive water users.</p> <p>The aim of these works is to decrease the quantity of water required for one or more consumptive uses in a set of surface water SDL resource units, compared with the quantity required under the benchmark conditions of development.</p> <p>The water savings from these efficiency works can then be transferred to the Cwlth, forming part of the Cwlth environmental water holdings.</p>	<p>ACT (SS1); Victorian Murray (SS2); Kiewa (SS3); Ovens (SS4); Broken (SS5); Goulburn (SS6); Campaspe (SS7); Loddon (SS8); Wimmera-Mallee (SS9); SA Non-Prescribed Areas (SS10); SA Murray (SS11); Marne-Saunders (SS12); Eastern Mount Lofty Ranges (SS13); NSW Murray (SS14); Murrumbidgee (SS15); Lachlan (SS16); Intersecting Streams (SS17); Lower Darling (SS18); Barwon-Darling Watercourse (SS19); Macquarie-Castlereagh (SS20); Namoi (SS21); Gwydir (SS22); NSW Border Rivers (SS23);</p>	<p>Relevant focus areas from Constraints Management Strategy: Hume to Yarrowonga (Upper Murray); Below Yarrowonga to Wakool Junction (Mid-Murray); Goulburn; Murrumbidgee; Lower Darling (integrated into Menindee Lakes Water Savings Project); Gwydir; SA Lower Murray.</p>		30/06/2024

						Queensland Border Rivers (SS24); Moonie (SS25); Condamine-Balonne (SS26); Nebine (SS27); Warrego (SS28); Paroo (SS29)			
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Table B – Surface water SDL resource units

	Surface Water SDL Resource Unit	Water Resource Plan Area	State/Territory	Efficiency Entitlements (GL)*^	Long-term average water available under efficiency entitlements (GL)^	Additional Efficiency Entitlements (GL)**^	Long-term average water available under additional efficiency entitlements (GL)^	Likely SDL adjustment amount (GL)**
1	Paroo (SS29)	Warrego-Paroo-Nebine	Queensland					-
2	Warrego (SS28)	Warrego-Paroo-Nebine	Queensland					-
3	Nebine (SS27)	Warrego-Paroo-Nebine	Queensland					-
4	Condamine-Balonne (SS26)	Condamine-Balonne	Queensland					-
5	Moonie (SS25)	Moonie	Queensland					-
6	Queensland Border Rivers (SS24)	Queensland Border Rivers	Queensland					-
7	Intersecting Streams (SS17)	Intersecting Streams	NSW					-
8	Barwon-Darling Watercourse (SS19)	Barwon-Darling Watercourse	NSW					-
9	NSW Border Rivers (SS23)	NSW Border Rivers	NSW					-
10	Gwydir (SS22)	Gwydir	NSW					-
11	Namoi (SS21)	Namoi	NSW					-
12	Macquarie-Castlereagh (SS20)	Macquarie-Castlereagh	NSW					-
13	Lachlan (SS16)	Lachlan	NSW					-
14	Murrumbidgee (SS15)	Murrumbidgee	NSW					162.0
15	NSW Murray (SS14)	NSW Murray and Lower Darling	NSW					124.8
16	Lower Darling (SS18)	NSW Murray and Lower Darling	NSW					0.0
17	Victorian Murray (SS2)	Victorian Murray	Victoria					72.8
18	Kiewa (SS3)	Victorian Murray	Victoria					1.3
19	Ovens (SS4)	Northern Victoria	Victoria					3.0
20	Goulburn (SS6)	Northern Victoria	Victoria					174.5
21	Broken (SS5)	Northern Victoria	Victoria					1.1
22	Campaspe (SS7)	Northern Victoria	Victoria					2.6
23	Loddon (SS8)	Northern Victoria	Victoria					10.9
24	Wimmera-Mallee (surface water) (SS9)	Wimmera-Mallee (surface water)	Victoria					-
25	South Australian Murray (SS11)	South Australian River Murray	SA	0.513^^				52.0
26	South Australian Non-Prescribed Areas (SS10)	South Australian Murray Region	SA					-
27	Eastern Mount Lofty Ranges (SS13)	Eastern Mount Lofty Ranges	SA					0.0

	Surface Water SDL Resource Unit	Water Resource Plan Area	State/Territory	Efficiency Entitlements (GL)*^	Long-term average water available under efficiency entitlements (GL)^	Additional Efficiency Entitlements (GL)**^	Long-term average water available under additional efficiency entitlements (GL)^	Likely SDL adjustment amount (GL)**
28	Marne-Saunders (SS12)	Eastern Mount Lofty Ranges	SA					-
29	ACT (surface water) (SS1)	ACT (surface water)	ACT					0.0
Overall SDL adjustment amount #								605

* Some resource units may have no efficiency entitlements at a particular time, and will be shown as empty cells

** Figures sourced from MDBA SDLAM: Draft Determination Report

The Basin Plan limits the net adjustment for supply and efficiency measures to SDLs to 5% of the Basin-wide SDL, or 544 GL. The full supply contribution of 605 GL can be reached once sufficient efficiency measures have been delivered, in order to reduce the net adjustment to 544 GL

^ applies to entitlements secured as environmental water before, or after, notification of measures with which the entitlements are associated

^^ in-train registration of COFFIE (SA pilot) programme entitlements with CEWH through DoAWR, as of 17 Nov 2017