



Murray-Darling Basin Royal Commission
Submission from the South Australian Government
June 2018

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Executive Summary

1. The Murray-Darling Basin Plan is a coordinated management plan between Basin jurisdictions to ensure that the water in the Murray-Darling Basin is shared between all users, including the environment, in a sustainable way. It is a legislative instrument required by the *Water Act 2007* (Cth) that was prepared by the Murray-Darling Basin Authority (in collaboration with Basin jurisdictions) and was adopted by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities on 22 November 2012.
2. The Basin Plan as agreed in 2012 is a negotiated outcome and once fully implemented in 2024, will deliver equivalent environmental outcomes to a water recovery volume of 3,200 gigalitres. This represents an Ecologically Sustainable Level of Take.
3. The Government of South Australia considers that full and effective implementation of the existing Basin Plan policy framework remains the best option to deliver a healthy working river for the benefit of the environment, industries and communities across the Basin.
4. The long-term average Sustainable Diversion Limit Adjustment Mechanism is appropriate, has a robust assessment process and is the preferred method to transition the Basin community to achieve the Ecologically Sustainable Level of Take.
5. The Government of South Australia submits that the Basin Plan and long-term average Sustainable Diversion Limits (including the adjustment) are valid and permit a reasonable, five-year period of transition towards full implementation of the Basin Plan in 2024.
6. The Basin Plan is mid-way through its implementation process. The 2025 scheduled Basin Plan Evaluation will be the appropriate time to consider whether the Basin Plan is likely to have achieved the intended environmental outcomes.
7. It is South Australia's view that additional significant legislative or policy changes at this stage would, somewhat perversely, have the potential to impede implementation, thereby undermining the achievement of real enhanced environmental outcomes.

Background

8. Management of water resources in the Murray-Darling Basin (the **Basin**) has evolved considerably over more than a hundred years. Use has increased substantially and the Basin Plan was borne out of the collective need to address the environmental strains felt across the entire Basin.
9. In the mid-1980s to early 1990s it was becoming apparent that over-extraction had contributed to significant environmental problems, such as increased salinity and the decline of wetland health. Governments realised that there needed to be a more sustainable balance between meeting consumptive needs and looking after the health of the Basin itself, which led to the establishment of programs and reforms to address water management. Notable initiatives include:
 - a. In 1995, the Murray-Darling Basin Ministerial Council responded to growing evidence that extraction levels had become unsustainable by agreeing to cap

water extractions from Murray-Darling Basin rivers. This was the first significant step towards balancing the economic and social benefits of water extraction against the environmental benefits of leaving water in the rivers.

- b. In the early 2000s, continued concerns over the health of the river led to the development of the concept of 'environmental water' and this became a key part of water policy considerations. In 2001, the Murray-Darling Basin Ministerial Council adopted a vision for the Murray; "a healthy River Murray system, sustaining communities and preserving unique values". The Council supported the vision with a set of high-level objectives relating to river health, environmental flow, water quality and the human dimension.¹
 - c. In April 2002, the Australian and Basin governments set up The Living Murray: a long-term river restoration program aiming for a healthy, working river system. In 2003, the Murray-Darling Basin Ministerial Council announced a commitment to recover 500 gegalitres² of environmental water for six priority environmental assets (icon sites), and to help increase the efficiency of environmental water delivery.
 - d. Through the \$650 million investment, the Australian Government acquired 488 gegalitres for the environment. Between 2011 and 2015, environmental works were constructed to help deliver water more efficiently and effectively to the six icon sites along the River Murray.
10. While greater action to address environmental issues was occurring, assessments were still showing that ecosystem health in the Basin was poor or in decline. In 2008, CSIRO's *Water Availability in the Murray: A Report to the Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project* states "the hydrological changes resulting from resource development have been major, and are associated with the significant declines that have been observed in these flood dependent ecosystems".³
 11. The Millennium Drought greatly exacerbated the already significant effects of river regulation and over-extraction. At the height of the drought there were significant shortages in water available for allocation and significant environmental deterioration.⁴
 12. In November 2006 a summit of Basin governments was called to discuss a collective response to the drought, followed by then Prime Minister John Howard's [address](#) in 2007 that proposed significant reforms in a \$10 billion ten point plan. The subsequent passage of the *Water Act 2007* (Cth) (the **Water Act**), and the development and ultimate negotiation of the Basin Plan by Basin governments represents the most significant multi-jurisdictional agreement yet to address the Basin's environmental health.

¹ [The Living Murray Story](#).

² Long-Term Cap Equivalent takes into account the different characteristics of water entitlements in New South Wales, Victoria and South Australia and their reliability to provide a common unit to equitably measure and compare the amounts of water recovered across a range projects.

³ CSIRO (2008) *Water availability in the Murray*. A report to Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project. CSIRO, Australia.

⁴ Refer to <https://www.environment.sa.gov.au/topics/river-murray/about-the-river/millennium-drought> for further specific information on the impacts of the millennium drought on the Lower Murray in South Australia.

Constitutional Basis for the *Water Act 2007* (Cth)

Issues Paper No 1 at [28(i)] invites submissions on the issue of whether there is sufficient power vested in the Commonwealth Government under *The Constitution* to impose obligations on Basin States under the Basin Plan without a referral of power from those states under s 51(xxxvii) of the *Constitution*. *Issues Paper No 2* also raises this issue and notes at [87] to [90] notes that this will be the subject of a subsequent *Issues Paper*.

13. The South Australian Government provides the following submissions in relation to the validity and construction of the *Water Act* and the Basin Plan 2012, in response to the Commissioner's *Issues Paper No 2*.
14. South Australia notes the Commissioner's indication that he is likely to release a subsequent issues paper inviting submissions on the constitutional basis for the *Water Act* as mentioned at paragraph 28(i) of *Issues Paper No 1*. Accordingly the State does not propose to deal in detail with constitutional questions in this submission. However, it is necessary to set out some fundamental constitutional propositions to inform the interpretation advanced below of the *Water Act* and Basin Plan.
15. South Australia agrees with the proposition that the external affairs power (s 51xxix) is the most important head of constitutional power to the legislative scheme. Indeed, it is the only comprehensive head of power apart from s 51(xxxvii) capable of supporting the *Water Act* and the Basin Plan. The *Convention on Biological Diversity* done at Rio de Janeiro on 5 June 1992 ("the Biodiversity Convention") is particularly relevant given its focus on the conservation of biological diversity and the sustainable use of the components of biological diversity.
16. The *Water Act* and the Basin Plan must implement the obligations imposed by the international agreements in order to be constitutionally valid under s 51(xxix). Overwhelmingly the international agreements require the achievement of environmental outcomes and the laws implemented to achieve those outcomes must be reasonably appropriate and adapted to that purpose.⁵
17. An interpretation of a law that is consistent with constitutional validity should be preferred over one that is not.⁶

Validity of the Basin Plan

In Issues Paper No 2, the Commission invites submissions on specific matters relating to the construction of the Water Act 2007 (Cth), including the SDL Adjustment Amendment and the Northern Basin Review Amendment.

18. South Australia submits:

⁵ [Commonwealth v Tasmania](#) ("Tasmanian Dam Case") (1983) 158 CLR 1; *Victoria v The Commonwealth* ("The Industrial Relations Act Case") (1996) 187 CLR 416.

⁶ *Davies and Jones v Western Australia* (1904) 2 CLR 29, esp at 43 per Griffith CJ; *Lim v Minister for Immigration and, Local Government and Ethnic Affairs* (1992) 176 CLR 1 at 14; s15A *Acts Interpretation Act 1901* (Cth).

- a. Social and economic considerations may be taken into account in the calculations of the long-term average sustainable diversion limits (**SDL**), but only where the environmental objectives of the underlying international agreements are also met.
 - b. The *Water Act* can, and should, be interpreted as permitting a reasonable transitional period towards achievement in 2024 of an environmentally sustainable level of take equivalent to a 3,200 gigalitre water recovery for the Basin.⁷
 - c. Within this framework, the Basin Plan and the SDL adjustment process can, and should, be interpreted consistently with validity, for the reasons that are further developed below.
19. South Australia agrees with the observation at paragraph 29 of Issues Paper 2 that environmental concerns are the dominant focus of the *Water Act*, as disclosed by the objects of that Act (s 3), the purposes of the Basin Plan (s 20) and the general basis on which the Basin Plan is to be developed (s 21). So much is dictated by the Act's foundation in the external affairs power and the relevant international agreements it implements.
20. Three themes relevantly arising from that premise are raised in Issues Paper No 2:
- a. What role, if any, may social and economic factors play in the formulation of an environmentally sustainable level of take (**ESLT**) and SDLs?
 - b. What are the consequences, if any, of SDLs being set between 2019 and 2024 at a level which may be less than an ESLT? That is, to what extent does the *Water Act* (considering both its text and its foundations in the relevant environmental agreements) permit the implementation of an ESLT to be achieved over a period of time?
 - c. What, as a matter of fact, is the ESLT required for the Basin Plan to meet the environmental objectives of its enabling legislation?
21. Each question is dealt with in turn.

The role of social and economic factors

22. Legislation implementing international agreements via the external affairs power may provide for consideration of social and economic factors in managing Basin waters, if this is within the contemplation of those international agreements. The external affairs power and/or the incidental power (s 51(xxxix)) may also support appropriate legislation if the

⁷ It is common practice in water management to have a transition period to allow for the reductions to take effect. For example the Lower Limestone Coast Water Allocation Plan allowed licencees to apply for a bridging volume which expired on 30 June 2016.

consideration of social and economic factors is truly incidental to the implementation of the agreement and is reasonably appropriate and adapted to that purpose.⁸

23. The objects of the Biodiversity Convention are set out in Article 1:
 - a. the conservation of biological diversity;
 - b. the sustainable use of the components of biological diversity; and
 - c. the equitable sharing of the benefits of the genetic resources of biological diversity.
24. Social and economic considerations are only expressly mentioned twice in the Biodiversity Convention. The first reference is in the requirement to adopt economically and socially sound measures as incentives for conservation and sustainable use of the components of biological diversity.⁹ The Commonwealth has adopted measures that are appropriate and adapted to this requirement, both through enacting the provisions of Part 2, Division 4 *Water Act* concerning “risk allocation” and compensation payments, as well as the various non-statutory funding schemes supporting water management projects.
25. The second reference to social and economic matters is in Article 20(4), which clearly balances social and economic development against the needs of conservation, and provides that it must be the overriding consideration. However, this only applies to developing countries, and Australia is not one.
26. The provisions of the *Water Act* concerning social and economic factors are more relevant to the implementation of the Biodiversity Convention’s objective of “sustainable use”. “Sustainable use” is defined in Article 2 as “*the use of the components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.*” The Biodiversity Convention envisages that components of biological diversity (including water) may be used¹⁰ in various ways, including towards social or economic ends, so long as that use does not lead to the long-term decline of biological diversity. The Convention accordingly empowers the Commonwealth to legislate with respect to the social and economic uses of Basin water as long as sustainability is the primary consideration. Social and economic factors may not, however, compromise the environmental objective of preventing the long-term decline of biological diversity.
27. The *Water Act*’s provisions regarding social and economic factors must be read subject to this interpretation of the Biodiversity Convention. They do not permit a “triple bottom line” approach in which environmental factors are balanced against social and economic factors (except during a relatively limited implementation phase). The environmental objectives must be paramount.

⁸ *Nationwide News Pty Ltd v Wills* (1992) 177 CLR 1 at 26-27 per Mason CJ; *Victoria v Commonwealth* (1996) CLR 416 at 548-0 per Brennan CJ, Toohey, Gaudron McHugh and Gummow JJ.

⁹ Article 11.

¹⁰ The various interests in (and uses of) the components of biological diversity are recognised in the preamble to the Convention.

28. South Australia agrees with Counsel Assisting’s observation that the concept of an ESLT under the *Water Act* is defined solely by reference to environmental considerations. It is a matter of fact, ascertained through the best available scientific knowledge, of the maximum level of take the Basin can sustainably support. Social and economic considerations are irrelevant to this analysis.
29. While ESLTs are a matter of fact, SDLs are a matter of law. It is a matter of construction of the *Water Act* how the SDLs “must reflect” an ESLT for the purposes of s 23 and s 23A *Water Act* and the role, if any, of social and economic factors in the development of SDLs. It is then a matter of analysing the Basin Plan to see whether the provisions concerning the SDLs meet that standard.

The scheme of the Water Act and the operation of SDLs during the period 2019 - 2024

30. The *Water Act* was enacted to enable the Commonwealth, in conjunction with the Basin governments, to manage the Basin water resources in the national interest while giving effect to relevant international agreements.¹¹ This, of course, is no small task. The enactment of the *Water Act* followed the failure of multiple attempts of the States to establish a sustainable arrangement for the management of the Basin since pre-Federation times.
31. The subject matter of the Act is a self-evidently complex and long-term proposition. The objects in s 3 reflect the interdependent yet competing nature of the various interests in Basin water resources. Part 7 of the Act recognises the importance of the availability of scientific information and research which, of course, is constantly developing.
32. Given these complexities, the *Water Act* does not purport to lay down a regulatory framework which implements the relevant international agreements in full from day one. Rather, the central concept of the *Water Act* is the development of a *plan* for the management of Basin water resources, including the establishment of environmentally sustainable levels of take from the Basin. Laws enacted pursuant to the external affairs power may be reasonably appropriate and adapted to their purpose notwithstanding that they do not implement the relevant treaty in full or immediately.¹²
33. There is textual support in the *Water Act* for a Basin Plan which works towards the achievement of the *Water Act*’s environmental objectives over a reasonable period of time (a timeframe that is of course very short when understood in the lifetime of the river system). The temporal language of the *Water Act* is such that the Basin Plan should, for example, provide for “giving effect to” relevant international agreements¹³ and for “water to reach its most productive use through development of an efficient water trading regime across the Murray-Darling Basin”¹⁴. The Basin Plan must “promote” sustainable use of

¹¹ Subsections 3(a) and (b).

¹² [New South Wales v Commonwealth \(Seas & Submerged Lands Case\) \(1975\) 135 CLR 337](#); [Commonwealth v Tasmania \(Tasmanian Dam Case\) \(1983\) 158 CLR 1](#), Murphy J at 172, Brennan J at 233–234, Deane J at 268; [Victoria v Commonwealth \(Industrial Relations Act Case\) \(1996\) 187 CLR 416](#), Brennan CJ, Toohey, Gaudron, McHugh and Gummow JJ at 488–489.

¹³ Subsection 20(a), s 3(b) and (c).

¹⁴ Subsection 20(e).

Basin water resources”.¹⁵ It must contain management objectives “to be achieved” by the Basin Plan.¹⁶ The Act itself aims to “ensure the return to environmental sustainable levels of extraction for water resources that are over allocated or overused.”¹⁷ Sections 23 and 23A provide that SDLs must “reflect” an ESLT.

34. Further, the *Water Act* contemplates that the Basin Plan may incorporate a degree of flexibility in the achievement of its objectives during a transitional period. So much is evidenced by the provisions allowing SDLs to be adjusted under s 23A and the provisions permitting temporary diversion provisions (commonly referred to as **TDLs**) to be used. Under s 24, the purpose of TDLs “is to provide for a transitional period to minimise social and economic impacts” when SDLs are lower than baseline diversion limits. Subsections 24(5) and (7) provide a five-year maximum limit on the use of TDLs, consistently with the requirement that the *Water Act* must remain reasonably appropriate and adapted to the implementation of the relevant international agreements.
35. Significantly, subsection 24(6) provides that a fresh determination of a TDL that is not zero must not be made unless the long-term average sustainable diversion limit for the water resources in question is reduced by more than 5%. This suggests that the Act does not envisage variances of less than 5% to SDLs to be, in the context of the long-term management of a naturally variable water resource, of sufficient significance to warrant separate allowance under a TDL.
36. These considerations support an interpretation that the *Water Act* contemplates a Basin Plan which may accommodate a short period of transition towards implementation of the relevant international agreements. Any interpretation must, however, be capable of reconciliation with the requirement in s23 and s23A that SDLs “must reflect” an ESLT.
37. Counsel Assisting contends in Issues Paper No 2 that s 23 and s 23A mean that SDLs must, at all times, *equate to*, an ESLT. The State submits that the term “reflect” accommodates the approach taken by the Basin Plan to the setting of SDLs during the period 2019 to 2024. On its ordinary meaning, the term “reflect” can be read as describing a relationship between SDLs and an ESLT which does not demand immediate and direct equivalence. Such a construction can be supported by an analysis of the Basin Plan as a whole.
38. The Basin Plan can, in the State’s submission, be characterised as a plan for achieving environmental outcomes equivalent to a water recovery of 3,200GL by 2024. The SDL Adjustment Mechanism is a crucial component of this plan. Together, the *Water Act* and the Basin Plan work by:
 - a. setting SDLs commencing from 1 July 2019;¹⁸
 - b. requiring the Basin States to develop water resource plans for accreditation by the Murray-Darling Basin Authority (the **Authority**) which must, among other things, set out the method for determining the maximum quantity of

¹⁵ Subsection 21(2)(b).

¹⁶ Item 4 of subsection 22(1).

¹⁷ Subsection 3(d)(i).

¹⁸ Subsection 6.04(1) Basin Plan.

water that the plan permits to be taken for consumptive use during a water accounting period in each SDL resource unit in a water resource plan area;¹⁹

- c. requiring the Authority, when carrying out its accreditation functions, to have regard to the extent to which a proposed water resource plan is consistent with the Basin Plan;²⁰
 - d. requiring water resource plans to set out the how the quantity of water actually taken for consumptive use will be determined after the end of a water accounting period;²¹
 - e. requiring the Authority to establish and maintain a register of take to assist with determining, for each water accounting period, whether there has been compliance with the long-term annual diversion limit for an SDL resource unit and the extent of any failure to comply with that limit;²²
 - f. if a Basin Government is non-compliant with a long-term annual diversion limit for an SDL resource unit in a water accounting period, requiring the Basin Government to report to the Authority in relation to the reasons for the excess; and
 - g. conferring certain compliance and enforcement powers on the Authority.
39. Section 23A and Chapter 7 Basin Plan establish a mechanism by which the SDLs might be adjusted to take into account the effects of new measures that will increase the supply of water or the efficiency of water use. It is a program that adjusts the SDLs effective from 1 July 2019 based on the estimated contributions those measures will make to the Basin.²³ Critically, s 7.11 Basin Plan provides for a reconciliation process in 2024 to compare the actual effects of the supply and efficiency measures with the estimate of their benefits on which the first SDL adjustment was based. If they are different, the Authority must again propose an appropriate adjustment to the SDLs.
40. The effect of s 7.11 Basin Plan is that, even if the supply and efficiency measures have not achieved the full extent of their estimated contributions towards the ESLT, by 2024 the SDLs will be reconciled to account for any shortfall. The Basin Plan accordingly provides a mechanism by which SDLs will equate to an ESLT by 2024 and which will retrospectively account for any shortfall that occurs during the period 2019 to 2024.²⁴
41. Given that the overall legislative scheme provides for the achievement of the ESLT in this way, the State submits that the SDLs “reflect” an ESLT throughout the period 2019 to 2024 because they operate in anticipation of the reconciliation process established under

¹⁹ Item 11 of subsection 22(1) and Part 2, Division 2 *Water Act*; Chapter 10, Part 3 Basin Plan.

²⁰ Subsection 56(1) *Water Act*.

²¹ Section 10.15 Basin Plan.

²² Section 6.08 Basin Plan.

²³ The *Basin Plan Amendment (SDL Adjustments) Instrument 2017* effected such an adjustment to the SDLs.

²⁴ The importance of the precautionary principle assumes a lesser importance as a matter of statutory interpretation given the assurance provided by the reconciliation process.

s 7.11 Basin Plan. Such an interpretation is consistent with the validity of the Basin Plan and should be preferred over an interpretation that would render it invalid.²⁵

42. South Australia also considers that an interpretation is open that social and economic considerations may be taken into account in formulating SDLs during a short period of transition towards the paramount environmental objectives. It is within the contemplation of the Biodiversity Convention and the inherent task of implementing international agreements that full implementation is not achieved overnight. It is also indicated by the temporal provisions of the *Water Act* outlined at paragraph 30 above.
43. Critically, however, the ability to take such considerations into account is strictly limited by the constitutional requirement that laws implementing international agreements under the external affairs power must be reasonably appropriate and adapted to that purpose. The Basin Plan establishes a five year transitional period between the setting of SDLs in 2019 and the reconciliation process in 2024. The State considers this to be a reasonable period in which transition may occur.²⁶ However, laws that purported to give too great a role to social or economic considerations, or permitted such considerations to be taken into account beyond 2024, risk being declared invalid.
44. Further, the State notes that, even if a Court were to declare that SDLs must equate to an ESLT at all times, it does not necessarily lead to the conclusion that the Basin Plan itself is invalid. The Basin Plan provides for the calculation of surface water SDLs to be undertaken by reference to the formulas in column 2 of Schedule 2 to the Basin Plan. Any error is likely to lie in the Authority's calculations of the inputs into those formulas, rather than the legislative formulas themselves.

What is the ESLT?

45. South Australia has consistently maintained a level of take equivalent to a water recovery of 2,750 gegalitres from the baseline diversion limit is not an ESLT.²⁷
46. The *Water Act* recognises the importance of achieving outcomes higher than those equivalent to a water recovery of 2,750 gegalitres, particularly to South Australia. Part 2AA establishes the Water for the Environment Special Account to fund projects to ease or remove constraints measures and/or to make an additional 450 gegalitres of environmental water available. The Basin Plan also makes express provision for the SDL adjustment mechanism to be used to reflect the effects of supply, efficiency and constraints measures so that the additional of 450 gegalitres of environmental water may be achieved above the Authority's 2,750 gegalitres benchmark: s 7.09(e) and Schedule 2. The use of the SDL adjustment mechanism is accordingly a crucial component in ensuring that an ESLT equivalent to a 3,200 gegalitres water recovery is validly established.

²⁵ *Davies and Jones v Western Australia* (1904) 2 CLR 29, esp at 43 per Griffith CJ; *Lim v Minister for Immigration and, Local Government and Ethnic Affairs* (1992) 176 CLR 1 at 14; s15A *Acts Interpretation Act 1901* (Cth); s13 *Legislation Act 2003*.

²⁶ The *Water Act* contemplates a five year transition period as this is the maximum length of time that TDLs may apply: s 24(5) and (7).

²⁷ See 50 below.

47. The development of the Basin Plan, including the Environmentally Sustainable Level of Take and the Sustainable Diversion Limit, and the policy rationale for supporting the negotiated Basin Plan and the adjustment mechanism are described below.

Development of the Basin Plan

Issues Paper No 1 at [28(a)] invites submissions in relation to the Murray-Darling Basin Authority's method for determining the Environmentally Sustainable Level of Take. Issues Paper No 2 invites submissions on specific issues including the requirements of the Water Act 2007 (Cth) including the determination of an Environmentally Sustainable Level of Take and setting the long-term average Sustainable Diversion Limits.

48. This section describes the development of the Basin Plan, particularly South Australia's analysis and review of the proposed levels of take and the achievement of environmental targets, which supports the ultimate negotiated outcome of a Basin Plan that delivers equivalent environmental outcomes to a water recovery of 3,200 gigalitres year.
49. The [Guide to the proposed Basin Plan](#) (the **Guide**) was released by the Authority in 2010. The Authority outlined the analysis undertaken to determine the Basin's environmental water requirements and the amount of additional surface²⁸ water needed for the environment. In the context of this analysis, the Authority determined the amount of water needed for the environment was between 3,000 gigalitres per year and 7,600 gigalitres per year, and that based on various factors including the available social and economic information, the Authority decided to only examine scenarios for increasing the amount of water available for the environment by between 3,000 gigalitres per year and 4,000 gigalitres per year.^{29,30}
50. In 2011, the Authority's [ESLT Report](#), using a different modelling approach, proposed an environmentally sustainable level of take of 10,873 gigalitres per year. This represented a Basin-wide reduction in take of 2,750 gigalitres per year, compared to a June 2009 baseline.
51. Scientists for the Department reviewed the ecological and hydrological consequences of the proposed surface water recovery volume of 2,750 gigalitres per year using the Riverland Chowilla Ramsar site and the Lower Lakes, Murray Mouth and Coorong as key indicator sites.³¹

²⁸ For information, the Authority identified that the total amount of additional water needed for the protection of groundwater bodies across the Basin ranges from 99 GL per year to 227 GL per year (long-term average). The Murray-Darling Basin Royal Commission's Terms of Reference and subsequent documents do not invite any submissions with respect to groundwater and this submission makes no further comment about it.

²⁹ As a long-term average.

³⁰ Summarised at pg xxii in the [Guide to the proposed Basin Plan](#); and chapter 4 of [Volume 2, Technical background of the Guide to the proposed Basin Plan](#).

³¹ [Bloss CM, Steggle T, Bald M & Heneker TM \(2012\), Hydro-ecological Analysis of the Proposed Basin Plan – South Australian Floodplain, DFW Technical Report 2012/11, Government of South Australia, through Department for Water, Adelaide; Theresa M Heneker and Jason S Higham, \(2012\) 'Review of the Basin Plan Water Recovery Scenarios for the Lower Lakes, South Australia: Hydrological and Ecological Consequences' \(Technical Report, South Australian Department for Environment and Natural Resources, March 2012\); Higham, J. \(2012\), An analysis of MDBA modelling outputs for the](#)

52. The Department's work concluded that while the proposed Basin Plan would deliver some improvement, key environmental outcomes remained at risk.
53. A Goyder Institute-assembled [Expert Panel](#) reviewed the Department's work and recommended that a wider range of possible scenarios be evaluated, including an additional water recovery volume and the relaxation of constraints. It concluded that without these inclusions, the proposed surface water recovery target of 2,750 gigalitres per year was unlikely, in the long term, to maintain the ecological character of the Riverland-Chowilla and Coorong, Lower Lakes and Murray Mouth Ramsar sites and other environmental assets in South Australia.
54. The South Australian Government's [submission](#) on the draft Basin Plan in April 2012 was informed by the scientific analysis undertaken by the Department and the Goyder Institute for Water Research.³² The submission recommended that the Authority undertake further modelling of water recovery amounts greater than 2,750 gigalitres per year with system constraints relaxed or removed.
55. Differing views were presented by other Basin jurisdictions and stakeholders.
56. A revised draft Basin Plan was provided to the Murray-Darling Basin Ministerial Council on 28 May 2012. The differing stakeholder views led the Council to issue a [Notice³³ to the Authority](#) on 9 July 2012 asking it to work with Basin jurisdictions to develop a mechanism to adjust the long-term average sustainable diversion limit, providing a compromise to the competing interests and provisions to address constraints. The notice included [South Australia's individual view](#).
57. The Authority undertook the modelling work and a [report](#) of the relaxation of operational constraints in the southern-connected system was publically released in October 2012.
58. [Analysis by the Department](#) showed that three more of South Australia's comprehensive water requirements for its key River Murray floodplain environmental assets were fully met and there were improved outcomes for an additional 15 requirements. The 3,200 gigalitre per year scenario, irrespective of the level of constraints relaxation, provided greater potential to protect and restore the health of the Coorong, Lower Lakes and Murray Mouth with improved water level, salinity, Murray Mouth openness and barrage releases outcomes, compared to the 2,750 gigalitre per year scenario. The analysis by the Department was [peer-reviewed by the Goyder Institute](#) for Water Research and found to be fit for purpose and scientifically defensible.
59. Between August and November 2012, the Authority provided further [altered proposed Basin Plans](#); the South Australian Government continued to demand a greater water recovery target and protections and safeguards for the Coorong, Lower Lakes and Murray Mouth. Basin jurisdictions arrived at a negotiated consensus in November 2012 and the Basin Plan was adopted.

[draft Basin Plan: Hydrodynamic modelling of the Coorong and Murray Mouth South Australian Department of Environment and Natural Resources, Adelaide.](#)

³² See, for example, a [review of the Guide](#).

³³ under section 43A(4) of the *Water Act 2007* (Cth).

60. The Basin Plan, including the SDL and the adjustment mechanism, is a negotiated result. It is not a perfect plan and South Australia fought for greater environmental outcomes. That said, however, South Australia is committed to delivering the agreed Basin Plan as:
- a. On the basis of analysis, including by the South Australian Government with peer review, the Basin Plan produces equivalent environmental outcomes to a water recovery of 3,200 gigalitres per year at 2024. This has been reviewed extensively by the Department as being able to achieve key environmental outcomes.
 - b. The adjustment mechanism and the delivery of 450 gigalitres in efficiency contributions provides real additional water for the entire system and in particular, benefits to the Coorong.
61. South Australia recently determined that in addition to mitigating the impacts of extreme dry conditions, which is when the environment is at greatest risk, the additional 450 gigalitres of water will deliver the clearest benefits by holding salinity below important threshold levels in the Coorong and as a result, maintain the ecological character of this Ramsar-listed wetland.
62. Other benefits include shorter periods of no barrage flow, resulting in higher probabilities that fish will be able to migrate at critical breeding times; and an increase of seven to 15 per cent in flow events of 50,000 to 60,000 megalitres per day on the South Australian floodplain.
63. With respect to the Commissioner's request for comment on the matters that the Authority expressed as being the requirements of the *Water Act 2007* (Cth), including its method of determining the environmentally sustainable level of take, South Australia cannot comment on the matters the Authority considered, beyond what is described above from the Authority's published works.
64. As outlined above, the Department's analysis and review contributed to the negotiated outcome of the Basin Plan providing equivalent environmental outcomes to a water recovery of 3,200 gigalitres per year, which on the basis of the available knowledge should achieve key environmental outcomes.

Sustainable Diversion Limit Package

This section describes how the long-term average sustainable diversion limit is delivered by the Basin Plan at 2024. It includes the SDL Adjustment Mechanism amending the recovery targets in consideration of supply measures and efficiency contributions, as well as constraints relaxation.

65. The Basin Plan sets the long-term average sustainable diversion limit (the **SDL**) in Chapter 6. The total SDL is the sum of all SDLs at a SDL resource unit level.³⁴ All SDLs are subject to the SDL Adjustment Mechanism in Chapter 7.
66. The SDL is delivered in the adjustment mechanism as a three-element package that includes measures that adjust the SDLs along with measures to manage constraints.

³⁴ specified in Schedule 2 to the Basin Plan.

67. The first element is amending the Southern Basin water recovery target.³⁵ The water recovery target may be reduced after a determination that proposed ‘supply measures’³⁶ can be implemented. The supply measures must operate to increase the quantity of water available to be taken compared with the quantity available under the benchmark conditions, whilst ensuring equivalent environmental outcomes are achieved.³⁷ The Basin Plan provides a high-level default method³⁸ for calculating the increase in the SDLs for the affected units whilst ensuring environmental and policy objectives are met.
- a. The status of the supply measure projects is discussed at 87 below.
 - b. The matters raised in the Commissioner’s Issues Paper Number 2 relating to the SDL Adjustment Amendment are addressed at 26 above.
 - c. The Basin Plan also includes a process to review the water recovery target in the Northern Basin. The matters raised relating to the Northern Basin Review Amendment are addressed at 26 above and 114 below.
68. The second element is the recovery of an additional 450 gigalitres per year through ‘efficiency measures’³⁹ which, through on and off-farm water use efficiency, operate to decrease the quantity of water required for consumptive uses compared with the quantity required under benchmark conditions. Efficiency measures are required to achieve enhanced environmental outcomes with neutral or improved socio-economic outcomes⁴⁰ and are discussed at 132 below.
69. The third element is the development and prioritisation of constraints measures to address the physical, operational and management constraints that are affecting or have the potential to affect environmental water delivery.⁴¹ Constraints measures are discussed at 147 below.
70. The SDL adjustment program is delivered in 2024 as a three-element package of supply measures, efficiency contribution and constraints relaxation. The *Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin (IGA)*⁴² requires Basin jurisdiction governments to work together to deliver the package in good faith and provides the governance, process, and funding arrangements for assessing the package.

³⁵ Note The Basin Plan actually allows for the mechanism to apply in the Northern and the Southern Basin. During implementation New South Wales and Queensland decided that they would not submit projects from the Northern Basin as the Northern Basin review was underway and they preferred to address changing the SDLs through that mechanism.

³⁶ s7.15, Basin Plan.

³⁷ s7.15, Basin Plan.

³⁸ At Schedule 6 to the Basin Plan.

³⁹ s7.04, Basin Plan.

⁴⁰ s7.17, Basin Plan.

⁴¹ s7.08, Basin Plan.

⁴² Basin jurisdictions’ commitments to cooperatively implement this integrated package of measures, including Commonwealth funding, was formalised in the [2013 IGA](#). On 29 May 2015 the Ministerial Council agreed to amend Schedule 1 of the IGA to reflect revised assessment timeframes for the SDL adjustment measures and constraints measures. Schedule 1 was revised again on 27 November 2015, 18 November 2016 and 17 March 2017 with further changes to the timeframes for development and assessment of SDL adjustment issues. The [current IGA](#) is the version revised March 2017.

a. The assessment process is described at 93 below.

71. The [Water Amendment \(Long-term Average Sustainable Diversion Limit Adjustment Act 2012\)](#) amended the *Water Act 2007* (Cth) to provide for the inclusion of a Sustainable Diversion Limit Adjustment Mechanism in the Basin Plan.
72. This particular amendment to the Water Act was agreed by Australian Parliament on 21 November 2012 for the purpose of providing for the Basin Plan as adopted on 22 November 2012 which received bipartisan support from the Parliament on 29 November 2012 – a Basin Plan that included an SDL Adjustment Mechanism that allowed for adjustments to be made based on approved rather than implemented SDL adjustment (or offset) proposals.
73. This was the negotiated and intended outcome of an extensive multi-jurisdictional and bipartisan Parliamentary process.
74. This is reflected in the formal Notice by Murray-Darling Basin Ministerial Council on 9 July 2012, under section 43A(4) of the *Water Act 2007*, at paragraph 25:

Council requests the final Basin Plan should clearly state that SDLs take formal effect in 2019, as was requested by the Council at its meeting of 27 May 2011, while noting implementation of some SDLs may be deferred through the operation of the SDL adjustment mechanism...
75. Paragraph 26 in the Notice also contemplated a scenario in which “anticipated works associated with any SDL adjustment mechanism are not completed” by the time at which the SDLs would begin to take effect in 2019.
76. In respect of the SDL Adjustment Mechanism in the Basin Plan, this pre-emptive approach to offsetting the SDLs continues to be supported by all affected Basin governments and has been upheld with bipartisan votes across two separate Commonwealth Parliaments.
77. As a matter of logic, given the necessary lead times associated with implementing relevant SDL offset projects, it is suggested that a pre-emptive approach to making SDL adjustments – based on formally approved projects – is the only way in which an adjustment mechanism could operate to achieve Basin governments’ shared objectives of:
 - a. reducing or offsetting the unnecessary recovery of water from consumptive users, while still achieving the environmental objectives of the Basin Plan; and
 - b. providing maximum certainty and transparency for Basin communities and the water market by providing the earliest feasible indication about the scale of the Commonwealth’s water recovery strategy for the purpose of meeting the Basin Plan’s environmental objectives.⁴³
78. In respect of SDL offset projects, the practical effect of such a pre-emptive mechanism is to lengthen the period over which the Basin Plan’s environmental objectives are achieved,

⁴³ This is in contrast to the temporary diversion provision arrangement in the Water Act, which merely delays the final implementation of the SDLs, without improving socio-economic outcomes.

but within a finite and reasonable timeframe. The relevant reconciliation provisions of the Basin Plan ensure that this is done without compromising on the final environmental objectives, which must be achieved by no later than 2024.

79. It is also arguably reflected in the Second Reading speech, by the then Minister for Sustainability, Environment, Water, Population and Communities, Mr Burke:

Projects will be developed over time and in consultation with funding bodies, and will undergo thorough assessment in the business case stage and also due diligence checks. This means projects will be well understood by the time they are considered and assessed by the Basin Officials Committee and the authority.

80. In the context in which this Second Reading statement was made, it is suggested that the phrase “considered and assessed by the Basin Officials Committee and the authority” should be taken to mean “considered and assessed” for the purpose of making pre-emptive SDL adjustments – i.e. at a stage when SDL offset projects would be developed and approved, but not necessarily implemented
81. It is also significant that – as stated elsewhere in this submission – the existing Adjustment Mechanism not only improves socio-economic outcomes but also facilitates the achievement of improved environmental outcomes. Implementation of the full SDL Adjustment Mechanism, including implementation of both efficiency measures and SDL offset proposals that also address constraints in the southern system by 2024, will guarantee the capacity of river managers to achieve flows of 80,000 megalitres per day at the South Australian border and improved outcomes for the Coorong, Lower Lakes and Murray Mouth.
82. Finally, given the extent to which Basin Plan implementation continues to rely on co-operation across multiple Basin governments, it remains highly doubtful that a Basin Plan without the existing pre-emptive SDL Adjustment Mechanism – or a Plan in which the Mechanism had been partly or fully invalidated – would achieve equivalent or better environmental outcomes within a shorter timeframe or with a reasonable socio-economic cost.

Water Recovery

Issues Paper No 1 at [28(d)] invites submissions addressing the amount of water recovered for the environment, including particulars of the figure estimated by the Authority and the water available to the Commonwealth for environmental use, and to what extent water recovery is compromised by illegal take.

This section describes the water recovered to date, and the arrangements for the Commonwealth Environmental Water Holder to access environmental water.

83. Water recovery targets in the Basin Plan are set as:
- a. Local reduction amounts with respect to each SDL resource unit area; and
 - b. Shared reduction amounts with respect to shared zone areas (for example, the Northern Basin zone, and Southern Basin South Australia zone). The shared recovery targets are the further recovery required in addition to the local recovery targets to satisfy the environmental needs of the Murray and Darling rivers.
84. A total of 875 gigalitres of [water was recovered in 2004–09](#) before the development of the Basin Plan was taken into account when determining the baseline diversion limits and SDLs for each SDL resource unit area. The Basin Plan water recovery target builds on these historical efforts to improve environmental outcomes.
85. Misunderstandings about what constitutes the baseline diversion limit has at times led to confusion about the volume of water recovered required for the environment. For example, in 2010, the Wentworth Group recommended water recovery of 4,400 gigalitres per year, which when adjusted for the water recovered before the June 2009 baseline becomes recovery of 3,525 gigalitres per year.⁴⁴
86. Of the initial 2,750 gigalitres per year water recovery required by the Basin Plan, a total of 1,500 gigalitres of water had been recovered and was part of the Commonwealth environmental water holdings [by 30 April 2013](#). The progress made in recovering water for the environment is regularly monitored by the Authority and the Australian Government and [reported](#) publicly by them.
87. As at [31 December 2017](#), a total of 2,106.4 gigalitres of water has been recovered for the environment through:
- a. Water purchased by the Australian Government: 1,226.9 gigalitres, of which 2.9 gigalitres is exempt from the 1,500 gigalitres limit. The Australian Government amended the *Water Act 2007* (Cth)⁴⁵ to limit surface water purchases to 1,500 gigalitres, and its [current position](#) is to only undertake strategic purchases in circumstances where these would provide significant benefit while minimising negative social and economic impacts.
 - b. Water recovered from infrastructure: 702.7 gigalitres including recoveries through the Sustainable Rural Water Use and Infrastructure Program (SRWUIP), South Australian River Murray Sustainability Program (SARMS) and Water Smart programs.
 - c. Other Commonwealth recovery: 15 gigalitres. This amount was gifted by the Queensland Government.
 - d. Water recovered by State projects: 161.9 gigalitres.

⁴⁴ Murray-Darling Basin Authority, [The proposed 'environmentally sustainable level of take' for surface water of the Murray-Darling Basin: Method and Outcomes](#) (2011).

⁴⁵ [Water Amendment Act 2015](#) (Cth).

88. The reported total of 2,106.4 gigalitres in water recovered includes water contracted by, but not yet transferred to the Australian Government. Water volumes that are contracted but not yet transferred to the Australian Government and the Commonwealth Environmental Water Holdings are not available for environmental use.
89. The water available for environmental use (subject to water allocations) is the water reported in the Commonwealth Environmental Water Holdings. Holdings as at [31 March 2018](#) total 1,836 gigalitres. This includes 0.513 gigalitres of the 450 gigalitres recovered through a pilot Commonwealth On-Farm Further Irrigation Efficiency (COFFIE) program in South Australia⁴⁶.
90. Entitlements become part of the Commonwealth Environmental Water Holdings at the time the entitlement is registered by the relevant State Water Authority on the Commonwealth Environmental Water Holders licence. Registration can occur a number of months after the exchange of water so the amount in the holdings varies from the volume of entitlements transferred.
91. This reported progress of water recovery does not include environmental water recovered before 2009, or the 605 gigalitre adjustment amount for supply measures detailed below.

Supply Measures

Issues Paper No 1 at [28(b)] invites submissions about whether the 36 Supply Measure Projects should be approved, including whether the projects meet the assessment criteria. This section describes the status and assessment of the Supply Measure Projects.

92. Over the last five years, Basin jurisdictions have developed and proposed a number of projects to offset water recovery and address constraints. These have been rigorously assessed under the guidelines by both South Australia and as part of the collective process. The assessment has shown the likely SDL offset and justifies the SDL Amendment. Additionally, many of the projects are already operational and those that are in the process of being delivered are subject to a new phase of collective governance and oversight. The rigours of this process, as described more fully below, provides sufficient justification for the SDL to be amended in advance of reconciliation in 2024.
93. The [Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin](#) (the **IGA**) sets out three phases to evaluate supply and constraint measures: feasibility studies (Phase 1), business cases (Phase 2), and confirmation of projects (Phase 3). [Assessment guidelines](#) were developed for each of the three phases.
94. Basin jurisdictions initially identified 47 projects with potential to deliver environmental outcomes with less water. Pre-feasibility investigations resulted in 38 feasible projects being submitted at either Phase 1 or Phase 2 of the assessment process. Where agreed by the Basin Officials Committee, projects that had already undergone a previous assessment could progress immediately to Phase 2. This includes, for example, The Living Murray (TLM) and constraints measures.

⁴⁶ Over 1.43 gigalitres of water from 45 individual projects has been approved to 31 March 2018. Transfers to the Australian Government only occur in September of each year and the figure of 0.513 is the volume transferred in September 2017. The next transfer will occur in September 2018.

95. The purpose of Phase 1 was to identify the measures most likely to achieve a SDL adjustment.
96. High level business cases for projects were prepared for assessment under Phase 2. Business cases were assessed on their likelihood to achieve the intended outcomes of the project, as well as their assumptions, benefits, costs and risks. Additional evidence such as supporting technical and scientific analysis was also considered. A risk profile for each project was developed that outlined key risks and agreed risk treatments to be addressed in the implementation phase.
97. Phase 3 required the proponent to demonstrate that Commonwealth and/or state funding for each project was agreed in principle, provide final advice on key elements of the project and provide evidence that all works approvals, environmental approvals, cultural heritage management plans and other regulatory requirements are in train.
98. As part of the process, jurisdictions identified key risks including environmental, third party and project delivery risks. Consequently the broad environmental risks associated with the projects are well understood. Risk treatments and pathways to address the identified risks were agreed between Basin officials before the project was notified to the Authority.⁴⁷
99. Major risks identified for each project are described in a high-level brief summary on the Authority's website under the [description of each SDL adjustment project](#). Risks will be addressed by the jurisdictions through the next phases of detailed project design and implementation.
100. A [method](#) was developed for assessing the environmental equivalence of the measures under different recovery volumes. The method was developed by the CSIRO over several years in consultation with Basin governments and was independently [peer-reviewed](#) by some of Australia's pre-eminent scientific experts and found to be scientifically fit for purpose.
101. The Basin Plan requires the Authority to ensure that there are no detrimental impacts on reliability of supply of water to the holders of water access rights that are not offset or negated. The issue of reliability was considered by the Basin Officials Committee who agreed that if the operation of the SDL Adjustment Mechanism has the potential to result in reduction of reliability for entitlement holders, jurisdictional governments will work together to find real world solutions to address those reliability concerns, consistent with the requirements in the Basin Plan⁴⁸.
102. The method modelled the supply projects in a whole-of-system model, meaning that all projects are assigned to the model runs simultaneously as a package. As a result, offset

⁴⁷ The Menindee Lakes Water Savings project is the only exception to the above. It has not yet completed Phase 3 assessment: the risk profile has been developed but still needs to be agreed. To manage this process and governments' expectations and risk, a multi-jurisdictional Menindee Lakes Working Group was established.

⁴⁸ Basin Officials Committee advice to the Murray-Darling Basin Authority on the Sustainable Diversion Limit Adjustment Determination.

volumes could not be attributed to specific projects and Basin jurisdictions agreed on an approach to apportion the offsets amongst jurisdictions, and amongst catchments.⁴⁹

103. All projects had to pass through the phased assessment process by unanimous agreement. South Australia subjected each individual SDL adjustment proposal to rigorous assessment at every phase and is of the opinion that each project modelled as part of the SDL adjustment determination met the requirements of the Assessment Guidelines.
104. Nine supply measure projects are already operational⁵⁰ and four supply measure projects are in trial or under construction.⁵¹
105. Eight supply measure projects modelled relate to operational rule changes and system enhancements. Five of the seven constraints measures have also been nominated as supply measure projects, while two projects remain as constraints measures.⁵²
106. The remaining supply measure projects are works projects to deliver environmental water more effectively in the southern connected basin.
107. The Authority has modelled the projects as a total package for the 2017 determination to maximise the offset. It is not possible to identify the offset volume attributed to each individual project, unless a specific water savings volume has been identified. This is because all of the projects interact in complex ways to deliver equivalent environmental outcomes and hence determine the total level of offset. This also means that it is not possible to attribute individual volumes to individual projects from earlier tranches of modelling.
108. Although it is not possible to attribute individual volumes to individual projects it could be inferred that the currently operational projects are already contributing a significant offset. These nine projects were part of a group of ten projects⁵³ initially modelled by the Authority and reported in an independent [stocktake of the supply, constraints, and efficiency measures](#) commissioned by the Murray-Darling Basin Ministerial Council in May 2015.

⁴⁹ This apportionment was based on the ratios used for the shared reduction amounts in s 6.05 of the Basin Plan and optimising the adjustment outcome.

⁵⁰ Flexible Rates of Fall in River Levels Downstream of Hume Dam; Hume Dam airspace management and pre-release rules; Chowilla Floodplain The Living Murray (TLM) Project; Gunbower Forest TLM Project; Hattah Lakes Environmental Flows TLM Project; Lindsay Island (Stage 1) Upper Lindsay watercourse Enhancement TLM Project; Mulcra Island Environmental Flows TLM Project; Riverine Recovery Project; Koondrook-Pericoota Forest Flood Enhancement TLM project.

⁵¹ Barmah-Millewa Forest Environmental Water Allocation; Computer Aided River Management (CARM) Murrumbidgee; South Australian Riverland Floodplain Integrated Infrastructure Program (SARFIIP); South East Flows Restoration Project

⁵² Including, a project to address constraints in the Goulburn catchment and the Gwydir constraints management project, which will be addressed through the Northern Basin “toolkit” package of measures. Constraints are discussed at 147

⁵³ The six TLM environmental works projects, Hume Dam airspace management and pre-release rules, Barmah-Millewa Forest Environmental Water Allocation, South East Restoration Project⁵³ and Flexible Rates of Fall in River Levels Downstream of Hume Dam.

109. The report outlined a plausible total estimate of supply measure outcome for these ten projects alone, of 273 gigalitres. After accounting for the not currently operational Barmah-Millewa Forest Environmental Water Allocation⁵⁴ and the South East Restoration Project⁵⁵, it could be inferred from the report that more than a third of the 605 gigalitre offset is currently in operation.
110. The SDL is in the form of a formula which allows only for net adjustments within the 5 per cent allowed. Section 7.15 requires the Authority to undertake the SDL adjustment determination on the entire package of projects. At the determination, the Authority must also include the pre-requisite policy measures agreed by jurisdictions for managing environmental water in the model.
111. The Authority must assess the package against other safeguards specified in the Basin Plan. SDLs cannot be changed unless the environmental outcomes of the total contribution of the notified supply measures remain equivalent to the Basin Plan benchmark environmental outcomes, limits of change are not exceeded and there are no detrimental impacts on reliability of supply of water to the holders of water access rights that are not offset or negated.⁵⁶
112. The [Australian Government has stated](#) that a SDL adjustment offset of 605 gigalitres will likely mean that, once all contracted water recovery has been delivered, no further water recovery will be required to bridge the SDL gap in the Southern Murray-Darling Basin.
113. The Senate debated the motion to disallow the [Basin Plan Amendment \(SDL Adjustments\) Instrument 2017](#) on 9 May 2018. The instrument was not disallowed and the SDLs for the southern connected basin have been increased as follows.

⁵⁴ The Barmah-Millewa Forest Environmental Water Allocation rule changes were assessed in the Stocktake report as contributing 40 gigalitres to the estimate.

⁵⁵ Construction will be completed in June 2018 and the project is expected to be operational soon after.

⁵⁶ s7.17, Basin Plan.

Table 1: Previous and new SDLs for each resource unit.

SDL Resource Unit	Previous SDL (GL)	Current SDL (GL)
Murrumbidgee	1,938.1	2,100.1
New South Wales Murray	1,341.7	1,466.5
Lower Darling	45.5	45.5
Victorian Murray	1,251.7	1,324.5
Kiewa	23.3	24.6
Ovens	80.3	83.3
Goulburn	1,153.0	1,327.5
Broken	54.6	55.7
Campaspe	120.9	123.5
Loddon	155.8	166.7
South Australian Murray	483.1	533.2
Eastern Mount Lofty Ranges	26.4	28.3
Australian Capital Territory	47.6	47.6
Total	6722	7327

114. Basin jurisdictions and the Authority will continue to play a key role in monitoring these state projects. Governance arrangements are being developed to oversee implementation, with regular monitoring and reporting to the Basin Officials Committee, Murray-Darling Basin Ministerial Council and the Authority. The process that will oversee the implementation of projects and the reconciliation process at 2024 provides a safeguard to ensure the SDL is delivered.
115. The project assumptions within the notifications documents set a baseline for the projects and informed the Authority's modelling of the 36 projects that were approved for the 2017 determination. Any material changes after further design and community consultation will be reported at regular intervals and an assessment of the impact of these factors will be undertaken and accounted for through the mandatory reconciliation process in 2024, when the Authority will assess whether projects have been delivered and are producing outcomes consistent with the 2017 determination.
116. The Basin Plan requires the Authority to be confident that any project changes will still deliver environmental outcomes consistent with the 2017 determination. If the Authority considers that projects are not achieving the outcomes in the 2017 determination, the

Authority is required to prepare amendments of the Basin Plan for adoption by the Minister in sufficient time for the amendments to commence by 30 June 2024.⁵⁷

117. Any shortfall in water recovery outcomes would need to be made up. Multi and bi-lateral agreements linking payments under the National Partnership Agreement will clarify responsibility between Basin jurisdictions and the Commonwealth for residual water recovery required.
118. The Supply Measure Projects have been subject to a rigorous assessment criteria and South Australia is satisfied that all projects progressing to the next phase of implementation satisfy the requirements. The amendment of the SDL is justified by sound modelling of the likely offset and environmental benefits that will be achieved by the projects. Further, nine of the projects are already operational, with a further four underway; the risks of failure to implement outstanding projects will be borne by jurisdictions through funding arrangements; monitoring will continue through regular reporting at Basin Officials Committee; and the amendment provides certainty to both governments and communities as to the commitment to projects and the future of further water recovery if required.

Northern Basin Review

Issues Paper No 1 at [28(e)] invites submissions in relation to the Northern Basin review, the reduction of the recovery target from the Northern Basin of 70 gigalitres, and the “toolkit measures” referred to in the Northern Basin review. This section describes the Northern Basin review, the reduction of the recovery target and the toolkit measures.

Issues Paper No 2 invites submissions on matters relating to the validity of the Northern Basin review amendment. This is discussed at 26 above in the context of the SDL Amendment. Issues Paper No 2 also invites submissions on whether it is good policy to adjust the Basin-wide SDL prior to the implementation of all the toolkit measures. This section addresses that matter.

119. The Northern Basin total water recovery volume under the Basin Plan is 390 gigalitres made up of 247 gigalitres local reductions and 143 gigalitres shared reduction.
120. When the Basin Plan received bipartisan support in 2012, there was recognition that the knowledge about the Northern Basin and its specific requirements could be improved. The Authority, with the support of Basin jurisdictions, committed to a review of the targets in the north. This particular review was noted at section 6.06 of the Basin Plan approved by Parliament in 2012.
121. Under the proposed “[Northern Basin Review](#)” amendment, the Authority proposed a total recovery volume of 320 gigalitres made up of 279 gigalitres local reductions and 41 gigalitres shared reductions, together with environmental works and measures, referred to as “toolkit measures”. The amendment improves the local environment and the “toolkit measures” enhance these improvements.
122. There is a hydrologic link between the northern and southern Basin. The proposed change in northern Basin SDL settings is likely to result in a change in the amount of water flowing into Menindee Lakes and into the southern Basin. The Authority’s [research](#)

⁵⁷ s7.11 of the Basin Plan.

showed that an average recovery reduction of 70 gigalitres resulted in seven less gigalitres per year reaching Menindee Lakes compared to the current Basin Plan settings. This translates to a 4 gigalitres reduction in flows to South Australia, and a 3 gigalitres reduction in barrage flow, compared to the benchmark. [The Authority](#) did not consider this reduction to have a material impact on achieving Basin Plan outcomes.

123. The changes to the water recovery volumes reflect the updated knowledge gained through the Northern Basin review on how environmental outcomes are influenced by different patterns of water recovery and delivery and how local environmental needs are better met within catchment recovery. This increased the local volumes and decreased the shared component of the water to be recovered.
124. The Northern Basin review assessed the likely social, economic and environmental outcomes for nine water recovery scenarios (including current Basin Plan settings). The scenarios included recovery volumes that are both above and below the volume currently legislated in the Basin Plan. The modelling results showed that [between 19 and 27 of the 43 flow indicators](#) in the Northern Basin used in the Basin Plan could not be achieved regardless of the water recovery scenario.
125. The modelling identified a number of limitations to achieving improved environmental outcomes in each of the catchments. Examples include:
 - a. The 2012 Basin Plan contained a local water recovery target of 6 gigalitres for the Barwon-Darling Catchment and 10 gigalitres in the Namoi River Catchment. The modelling showed environmental outcomes are most heavily influenced by recovery in the Barwon-Darling itself and that improvement in the Namoi occurs only once recovery volumes in that catchment reached approximately 20 gigalitres (beyond current recovery). The Northern Basin amendments increase the recovery in the Barwon-Darling from 6 gigalitres to 32 gigalitres and in the Namoi from 10 gigalitres to 20 gigalitres.
 - b. In the Border Rivers Catchment, greater environmental outcomes occur when water recovery is from regulated water entitlements, as these can be delivered in a pattern that support the flow indicators. The recovery of unregulated entitlements enhances system flows but there is little capacity to target a specific part of the flow regime to benefit the environment.
 - c. The 2012 Basin Plan contained a local water recovery target of 42 gigalitres in the Gwydir River Catchment. An estimated 48 gigalitres has been recovered as at December 2015. The modelling results show that improvements in wetland and floodplain connectivity outcomes with 47 gigalitres or more are constrained largely due to operational constraints around the delivery of environmental water to the Lower Gwydir. These operational constraints are proposed to be addressed in the package of toolkit measures.
126. The Authority established the Northern Basin Advisory Committee (**NBAC**) to provide advice on the Northern Basin review. NBAC included members from across Queensland and New South Wales who contributed their local knowledge and perspectives and helped strengthen communication with local communities during the review.

127. The NBAC developed the concept of a “toolkit” which encompassed a broad range of actions or initiatives which they believed should accompany water recovery. The Authority considered the proposed NBAC actions and determined that the following package of toolkit measures would assist with achieving environmental outcomes:
- a. Targeted recovery of water, both in terms of geographic location and the class of entitlement, to improve environmental benefits. The aim is to improve environmental watering into Narran Lakes, Lower Balonne and Culgoa floodplains and the Barwon–Darling River.
 - b. Protection of environmental flows. Protecting environmental water as it flows through the system allows water managers to get the most out of a smaller volume and ensures the delivery of water to its final destination by preventing extraction by another water user. This measure is particularly important in the unregulated rivers systems of the Condamine-Balonne and Barwon-Darling.
 - c. Development of a range of event-based mechanisms to improve the use of environmental water such as temporary purchase of water allocations and options to store and release environmental water using private infrastructure. This measure aims to benefit the Narran Lakes, some areas of the Lower Balonne, the Border Rivers and Namoi regions.
 - d. Improved coordination and delivery of environmental water, including the deliberate altering of the timing, rate or proportion of water flows to meet flow targets for the rivers, floodplain and wetlands. This measure should improve the health of rivers downstream such as the Culgoa and Narran Rivers.
 - e. Implementation of measures that would help address the current physical restrictions to achieving higher river flows to the Gwydir wetlands without third party impacts.
 - f. Coldwater pollution mitigation and the construction of fishways to promote native fish health and their ability to move through the river system.
128. The Australian Government agreed to provide funding for toolkit measures equal to the amount that would otherwise have been required for purchases to reach the 390 gigitalres water recovery target subject to the water recovery target for the northern basin being reduced as part of the proposed amendments to the Basin Plan.
129. Thus, the [Northern Basin Review amendment](#) was made on the basis that the Australian, New South Wales and Queensland Governments [have committed](#) to implementing a number of toolkit measures through the inclusion of a new schedule to the IGA. Put another way, the reduction in water recovery is subject to implementation of the toolkit measures.
130. At the same meeting, Ministers also committed that any changes arising from the Northern Basin review should have no negative impacts on triple bottom line outcomes in the southern Basin. If any negative impacts are identified they will be addressed by the Authority as part of the established review process of the Basin Plan.

131. The schedule, the bilateral funding agreements for implementation and the risk of the adjustments not being permanent should, along with potential Australian National Audit Office reviews and the court of public opinion, commit governments to implement the toolkit measures.
132. Governments' bipartisan commitment to deliver the Northern Basin Review is demonstrated by the agreement reached by the Coalition Government and the Federal Labor Party on 7 May 2018 after the Senate disallowed the *Basin Plan Amendment Instrument 2017 (No. 1)* that contained the Northern Basin amendments on 13 February 2018.
133. Under the Agreement, the Australian Government will continue to work with the New South Wales Government to establish enduring mechanisms to protect environmental flows. The Australian Government will establish a Northern Basin Commissioner, responsible to the Minister for Agriculture, in consultation with the Minister for Environment and Energy, to oversee implementation of the Northern Basin Review. The Northern Basin Commissioner will be able to provide advice to the Ministerial Council on planning assumptions, floodplain harvesting and water trade.
134. Queensland and New South Wales have committed to cooperate fully with the work of the Commissioner who will have responsibility for auditing and reporting on progress on delivery of the Northern Basin Review outcomes and toolkit measures, the achievement of Basin Plan environmental outcomes in the northern Basin, coordination activities with indigenous communities to enhance their ability to contribute to management of water resources and implementation of compliance measures. The Northern Basin Review modelling will be released for public scrutiny.
135. The Australian Government has also committed additional funding to support improved hydrometric networks in the northern basin, support Basin indigenous communities investment in cultural and economic water entitlement and associated planning activities and grants for economic development projects for indigenous, remote, rural and regional communities most impacted by the Basin Plan⁵⁸.
136. The package, if implemented in full with the Northern Basin amendments and toolkit measures, should substantially improve environmental and social outcomes in the Northern Basin.

⁵⁸ Northern Basin communities will be prioritised.

Recovery of 450 gigalitres for Enhanced Environmental Outcomes

Issues Paper No 1 at [28(c)] invites submissions in relation to the recovery of the 450 gigalitres, the EY report and efficiency measures generally.

This section outlines the importance of efficiency measures and the delivery of 450 gigalitres to providing a Basin Plan with equivalent environmental outcomes to a water recovery of 3,200 gigalitres. The EY report was a comprehensive review of socio-economic impacts and supports the continued design and implementation of efficiency measures.

137. Implementation of all elements of the SDL are critical to achieving the best possible environmental and social outcomes in the southern Basin.
138. Efficiency projects are real water savings for the environment, made through improving water use efficiency, including on-farm infrastructure, off-farm delivery systems and urban water use efficiency projects.⁵⁹
139. The 450 gigalitres⁶⁰ of real water recovered from efficiency measures will be critical to:
 - a. delivering the outcomes outlined in Chapter 8 and Schedule 5 of the Basin Plan, and section 86AA(2) of the *Water Act 2007* (Cth).
 - b. enhancing outcomes for the Coorong and Lower Lakes and the floodplain in South Australia regardless of whether constraints are addressed⁶¹.
140. Participation in efficiency programs is voluntary and demand driven. Once the current state run projects that are currently recovering water are completed in 2019, the Commonwealth Expression of Interest (EOI) for efficiency projects will be the only on-farm infrastructure program in operation for irrigators interested in upgrading their infrastructure until 2024.
141. Implementation of programs for efficiency measures was deliberately slowed while the Murray-Darling Basin Ministerial Council commissioned an independent expert analysis on how best to design, target and resource efficiency measure programs to recover 450 gigalitres by 30 June 2024, consistent with the Basin Plan legal requirement to achieve neutral or improved socio-economic outcomes.
142. Several industries and geographical areas within the Basin have been negative towards the implementation of programs for efficiency measures. However, evidence presented to the recent [Inquiry into water use efficiency programs in agriculture](#) from irrigators and groups representing them were almost uniformly positive when describing the efficacy of water use efficiency programs and argued that investing in irrigation infrastructure offers a

⁵⁹ Two efficiency projects (“On Farm Irrigation Efficiency and Other Water Use Efficiencies” (COFFIE) and “Urban or Industrial and Mining Areas Water Efficiency”)⁵⁹ are proposed as part of the SDL adjustment mechanism.

⁶⁰ EY identified that the 450 gigalitres of water recovery represents a relatively small proportion of irrigation water volumes.

⁶¹ Refer to 54 and 55.

more comprehensive approach than buybacks, with flow-on effects such as positive socio-economic consequences for regional Australia.

143. Consultation with some of these same stakeholders informed the independent analysis by EY, [*Analysis of efficiency measures in the Murray-Darling Basin: Opportunities to recover 450GL in additional environmental water through efficiency measures by 2024, with neutral or positive socio-economic impacts*](#), that concluded there is a net financial benefit to industry of between \$70 million and \$302 million (on a 20 year net present value basis) as a result of on-farm efficiency measures.
144. The analysis recommended immediate pursuit of off-farm and urban opportunities with zero adverse socio-economic impacts and other immediate on-farm opportunities or programs with limited (or addressable) adverse socio-economic impacts that can meet the 62 gigalitres bridge-the-gap target by 2019.
145. Victoria is concerned that further investment in on-farm irrigation efficiency projects could have an adverse impact on communities.⁶² It is the South Australian Government's view that well-designed efficiency measures can deliver positive benefits to off-farm businesses in regional communities as illustrated by [a case study on the Farm Water Program](#), led by the Goulburn Broken Catchment Management Authority. There are also many positive case studies in South Australia.
146. EY's review process included analysing over 150 academic articles, stakeholder submissions, program applications, case studies and socio-economic reports and over 60 different stakeholder consultation sessions across the Basin. EY concluded that there is sufficient evidence that the 450 gigalitres can be achieved with positive or neutral outcomes, providing governments work together collaboratively and heed the EY recommendations on how best to design and deliver the program.
147. Based on stakeholder consultations, time and resources invested to obtain community and industry buy-in is important for the success of the program. In delivering on-farm projects EY recommended that governments undertake capacity building and develop regional delivery plans in partnership with industries prior to further on-farm programs.
148. Consideration of the impact of the implementation of the efficiency measures on regional communities is not required with a purely legal interpretation of the Act. Section 7.17 (2) of the Basin Plan requires the Authority to be satisfied that an adjustment based on the efficiency contributions achieves neutral or beneficial socio-economic outcomes, as evidenced by participation of consumptive water users in projects that recover water through works or, an alternative arrangement as proposed and assessed by a Basin jurisdiction to achieve recovery with neutral or improved socio-economic outcomes.
149. The legal test is deliberately precise. It was not contemplated as a question of whether the final 450 gigalitres should be pursued, but rather a check and balance before deciding on an adjustment.

⁶² <https://www.premier.vic.gov.au/victoria-fights-for-crucial-basin-plan-projects/>

150. EY's independent analysis of the efficiency measures program found that a key risk to achieving the 450 gigalitres is the current budget available for water recovery under the Water for the Environment Special Account.
151. Based on the cost and past water efficiency measures and current water entitlement prices, there is a high likelihood that it will not be possible to achieve the entire 450 gigalitres without increasing the available funds. The *Water Act 2007* (Cth) provides for two statutory reviews of the Account in 2019 and 2021, which will provide an opportunity to review whether the Account's settings are appropriate to achieve the objectives set out in section 86AA. As part of the recent agreement between the Government and the Federal Labor Party, these reports must be tabled within 15 sitting days of receipt by the Minister and the Government's response to the independent review reports must be tabled at the time the Treasurer presents the 2020-21 and 2022-23 budgets to Parliament.

Constraints Measures

Constraints Measures are not specifically mentioned in the Commission's Issues Paper No 1. Some constraints measures are progressing through the supply measures assessment process as detailed above. Addressing constraints is the third element to delivering the SDL and a Basin Plan that delivers equivalent environmental outcomes of water recovery of 3,200 gigalitres.

152. For the Commission's information, we note that Issues Paper No 1 states that efficiency measures "together with" constraints measures are aimed at the recovery of an additional 450 gigalitres of environmental water.
153. These are two separate Basin Plan inputs. The concepts were introduced at the same time in light of analysis about the environmental outcomes that could be achieved with water recovery of 3,200 gigalitres per year.
154. As detailed at 54 to 55 above, the 450 gigalitres achieves significant environmental benefit regardless of the level of constraints management, particularly for assets in the Lower Murray. With the 605 gigalitres of SDL adjustment now in place, this environmental water becomes even more important to deliver environmental benefits across the Basin.
155. As detailed in the [Constraints Management Strategy](#), constraints management is about putting in place measures to enable additional, minor overbank environmental flows while avoiding any major impacts on people or property. There is a well-established evidence base that shows that addressing constraints can significantly improve the environmental outcomes achieved under the Basin Plan. Just as importantly, the measures can help avoid and mitigate the adverse effects of natural minor flood events by funding the upgrade of infrastructure such as new levees, bridges and crossings. Addressing the physical barriers to water delivery improves community resilience to over-bank and high flow events, whether natural or augmented.
156. As detailed above, through the development of the SDL adjustment, Basin jurisdictions and the Authority concluded that constraints measures are able to contribute to achieving equivalent environmental outcomes with reduced water recovery, resulting in the

notification of five⁶³ of the seven constraints measures under the SDL adjustment mechanism as supply measures.

157. Constraints measures are uniquely placed as part of the SDL Adjustment Mechanism as they work across both supply and efficiency measures. Constraints as supply measures directly contribute to the 605 gigalitres supply offset as works and measures will allow environmental water be used more efficiently and reach greater areas of the floodplain. Managing constraints also increases the capacity of river managers to maximise use of the additional 450 gigalitres from efficiency measures to contribute to enhanced environmental outcomes. However, as noted, the 450 gigalitres will enhance environmental outcomes without constraints measures.

Water Resource Plans

Issues Paper No 1 at [28(k)] invites submissions on water resource plans and the identified risk that water resource plans may not be submitted to the Murray-Darling Basin Authority in sufficient time for accreditation by 1 July 2019.

Issues Paper No 1 at [28(f)] invites submissions on whether water resource plans are being prepared “having regard to” the views of Indigenous people with respect to cultural flows.

158. Before the adoption of the *Water Act 2007* (Cth) and Basin Plan, Basin State and Territory governments had sole responsibility for managing their respective jurisdiction’s water resources and water planning arrangements.
159. Water Resource Plans (**WRPs**) aligning Basin-wide and state/territory-based water resource management in each WRP area. Water resource plans are the main mechanism for giving effect to the sustainable diversion limits.
160. South Australia’s WRP areas include the:
- a. South Australian River Murray: all surface water resources in the area.⁶⁴
 - b. South Australian Murray Region: all surface water resources excluding the South Australian River Murray and all groundwater resources beneath the area.⁶⁵
 - c. Eastern Mount Lofty Ranges: all surface water resources in the area and all groundwater resources beneath the area.⁶⁶
161. All three WRPs are on track to be accredited by the deadline of 30 June 2019. The development of all three WRPs has been undertaken in consultation and collaboration with the Authority, which has taken an informal “no surprises” approach to working through any issues. As the Department has drafted the WRPs, tranches have been informally

⁶³ Hume to Yarrawonga (Upper Murray), Yarrawonga to Wakool (Mid Murray), Murrumbidgee, South Australia (Lower Murray) supply measures. The Lower Darling constraints will be incorporated in the Menindee Lakes supply measure.

⁶⁴ s 3.05(l) Basin Plan.

⁶⁵ s 3.07(e) Basin Plan.

⁶⁶ s 3.07(f) Basin Plan

provided to the Authority concurrent with and subject to the outcomes of consultation with the community. This has resulted in an open dialogue between the agencies.

162. The South Australian Murray Region WRP was submitted to the Authority on 8 January 2018. While the Authority's official advice back to the Department is currently still being finalised, based on the above-described informal process the Department does not expect to receive any major recommendations for change; or at the least no recommendations that will threaten the accreditation process and/or critical dates.
163. The development of the South Australian Murray Region WRP has informed the development of South Australia's other WRPs, particularly with respect to engaging with the Authority to maximise its input. To that end, the Eastern Mount Lofty Ranges WRP is in advanced development and a full draft of text was recently provided to the Authority. Based on current progress, the Department is confident that the Eastern Mount Lofty Ranges WRP will be submitted to the Authority for accreditation in early September 2018.
164. Finally, the South Australian River Murray WRP is also underway. A first tranche of drafting has been provided to the Authority. The South Australian River Murray WRP is significantly informed by the content of the commensurate water allocation plan, which is currently in the final stage of being updated for consistency with the Basin Plan. Depending on the progress of consultation on the water allocation plan, the South Australian River Murray WRP should be submitted to the Authority for a full assessment in February 2019.
165. South Australia is of the opinion that it has or will submit its WRPs and they will be accredited and adopted before the 30 June 2019 deadline. Furthermore, the Department has developed its WRPs in open collaboration with the Authority which should, in theory, streamline the accreditation process. Any risk to not delivering the WRPs on time, or in a form that is not consistent with the Basin Plan, has been greatly mitigated by this process.
166. Formal feedback has been provided to Victoria on the Mallee-Wimmera WRP and South Australia, Victoria and New South Wales have commenced conversations regarding the connected water resources plans.

Views of Indigenous People

167. The Commission's Issues Paper No 1 raises the Commission's concern that "*water resource plans are being prepared in circumstances where, as a matter of law, it arguably could be said that these plans are not being prepared 'having regard to the views of Indigenous people with respect to cultural flows' in accordance with at least some available constructions of that phrase.*"
168. The South Australian Government seeks to improve spiritual, cultural, natural, environmental, social and economic conditions of South Australian Murray Region Aboriginal Nations through full and proper engagement in water resource planning processes and instruments according to their needs, interests and capacity.
169. As part of the engagement underway to develop Basin Plan compliant WRPs within the South Australian Murray-Darling Basin. Three joint Aboriginal Nation water workshops (April 2016, December 2016, and May 2017) and 61 individual Nation meetings have been held. The workshops were attended by representatives from all of the South

Australian Murray Aboriginal Nations, Murray Lower Darling Rivers Indigenous Nations (**MLDRN**) delegates and in some instances by Aboriginal Nations representatives from neighbouring states.

170. The engagement approach centred on the following principles:
 - a. Engagement funding should be invested in building the capacity of Aboriginal nations to engage in water planning in the future.
 - b. A country-based planning approach provides a method for planning for Aboriginal cultural objectives and builds the capacity of Nations to engage in water planning in the future.
 - c. Equity in engagement across groups tailored to their specific needs, interests and capacity.
171. The South Australian MLDRN DEW Working Group was also established to provide high-level advice and guidance on engagement approaches with individual Nations and to provide clear visibility of the State's approach to having regard to Aboriginal values and uses and achieving Aboriginal objectives and outcomes for water resource planning. The Working Group consists of five MLDRN representatives that identify as First Peoples, Permangk, Ngunguraku and Ngarrindjeri and include the Ngarrindjeri and First Peoples' Water Coordinators.
172. This engagement identified high-level objectives sought by Aboriginal Nations and informs the development of WRPs. Engagement will be ongoing during individual plan development.
173. The definition currently used by Northern Murray-Darling Basin Aboriginal Nations and Murray Lower Darling Rivers Indigenous Nations is in line with the objectives and outcomes identified by SA Murray Region Aboriginal Nations.
174. The Authority released [Water Resource Plans Part 14 Guidelines](#) for meeting Basin Plan (Chapter 10) requirements in relation to Aboriginal peoples' objectives and outcomes for water. Basin jurisdictions need to give matters proper, genuine and realistic consideration and the Authority will seek evidence of the way in which regard was had to the matter. It is anticipated that Governments will use the same approach in relation to cultural flows in preparing the WRP.
175. Authority staff met with indigenous leaders and the Department to discuss indigenous views on the proposed South Australian Murray Region WRP in March 2018.
176. Cultural flows were discussed as part of the consultation. From these conversations, it was evident that cultural flows mean different things to different people and Nations and many do not have formal definitions. The South Australian Government recognises that further work is required to develop the concept, parameters and practical implementation, particularly opportunities for water entitlements in systems with over-allocated water resources.

177. In the South Australian Murray Region WRP the South Australian Government has committed to being an active participant in the National Cultural Flows Research Project and being responsive to the projects research outcomes.

Illegal Take

Issues Paper No 1 at [28(g)] invites submissions in relation to allegations raised in various investigative reports concerning illegal take.

178. As noted in its Explanatory Memorandum, the Commission has stated that it does not intend to repeat the work of other inquiries on these allegations.
179. The South Australian Government and communities remain concerned about non-compliance with the *Water Act 2007* (Cth) and the Basin Plan. Basin jurisdictions and the Authority continue to enact the recommendations of the [Basin-wide compliance review](#) through the Authority's Independent Assurance Committee and its Office of Compliance, including developing the Basin Compliance Compact.
180. South Australia has had a long commitment to a compliance culture. Accountabilities and decision-making responsibilities are clear and South Australia undertakes proactive compliance monitoring to detect non-compliant water use activities and works with individuals, business, industry, local government and other agencies to ensure that water resource activities comply with the State's water legislation. The Department provides information to the public [on compliance](#), and [current compliance operations](#).
181. The [Murray-Darling Basin Water Compliance Review](#) recognised that South Australia has had a long commitment to compliance culture and that South Australia's compliance framework is the most extensively codified by way of guidelines for staff and transparent, with detailed annual reports on compliance activity and outcomes.

Irrigated Crops

Issues Paper No 1 at [28(h)] invites submissions in relation to public discussion over whether particular irrigated crops, and the expansion of development for irrigated crops in parts of the Basin, are taking more water for consumptive use than is practical given the volume of water available for such use in the Murray-Darling Basin.

182. Water allocations in the River Murray must be within the Cap agreed by the Murray-Darling Ministerial Council in 1996 and after 30 June 2019, the sustainable diversion limits in the Basin Plan.
183. Within that framework water allocations are made according to the relevant annual Water Allocation Framework and the South Australian Government does not consider or make an allowance for the type of crops to be irrigated when allocating water, approving new irrigation developments and water rights. The crop and the water required for the business are commercial decisions by the water user in South Australia.

Darling River and Menindee Lakes

Issues Paper No 1 at [28(j)] invites submissions about reports as to the lack of flow in parts of the Darling River, and warnings about algal bloom outbreaks, and the low level of storage in the Menindee Lakes.

184. The Menindee Lakes are owned by the NSW Government and leased to the Murray Darling Basin Authority. The South Australian Government has no further information to provide.

Environmental and Ecological Health of the Murray-Darling Basin

Issues Paper No 1 at [28(l)] invites submissions on whether the Basin Plan since 2012 has achieved any of its objectives of improving the health and resilience of the eco-systems and ecological functions of the Basin, the floodplains, the wetlands and other areas of ecological significance and the extent to which progress is being made on the desired outcome of a “healthy and working Murray-Darling Basin”.

Issues Paper No 1 also invites submissions on whether the objectives of the Basin Plan can be achieved at either a water recovery target amount of 2,750 gigalitres or 3,200 gigalitres, and on public concerns that water for environmental purposes in parts of the Basin suffer from a lack of regulatory protection.

185. The decline in the condition of the Basin’s water-dependent ecosystems has occurred over many decades. Redressing this decline is a long-term process and improvements in the Basin’s environment will take some time to secure and take full effect.
186. The Basin Plan secures a share of available water for the environment. The environmental water allows managers to work together to restore the critical elements of the flow regime so that plant and animal species can complete their lifecycles and help build resilience in healthy habitats.
187. The Basin Plan will not be implemented in full until 2014 and in Australia’s variable climate ecological outcomes take time. The time to fully assess and determine whether the Basin Plan has achieved the outlined environmental outcomes will be after 2024.
188. There are many individual success stories across the Basin about environmental water supporting environmental outcomes. For example, the number of baby black bream in the Coorong estuary has recently increased due to an environmental water delivery of 500 gigalitres to the Lower Lakes and Coorong between October 2017 and February 2018.^{67,68} The [2017 Basin Plan Evaluation](#) has confirmed that there are positive signs of improved health and the trend appears promising.

⁶⁷ Available at https://www.environment.sa.gov.au/news/News_Events_Listing/180502-baby-black-bream-fish-return-to-the-Coorong?BestBetMatch=black%20brim|720cd45f-5fec-4627-9f29-24303b5b894c|1771538a-419d-4c71-bd57-9e0e00fd8c25|en-AU.

⁶⁸ Other examples can be found at the Commonwealth Environmental Water Office website <http://www.environment.gov.au/water/cewo/media-release>, Victorian Environmental Water Holder website

189. Australia's climate, compounded by the variability of its rainfall means that the Murray-Darling Basin is subject to considerable variability of flows from one year to another. Between 2000-01 and 2009-10 the Murray-Darling Basin was impacted by severe drought. Conditions started to improve in the River Murray system from late 2010, as the drought broke bringing above-average rainfall and river inflows. Natural flooding also occurred across the system in 2011-12, 2012-13 and in 2016-17.
190. As with irrigators, environmental managers have limited water allocations in times of drought. In 2009-10 there were only small volumes of environmental water available (approximately 120 gigalitres) that were used to provide drought refuges and support critical habitats.
191. Over time, water available for the environment in the Basin has increased. In 2014-15, environmental water holders delivered more than 1,290 gigalitres and in 2016-17 the Basin jurisdictions, the Commonwealth Environmental Water Holder and the Authority worked together to deliver a total of 3,388 gigalitres of environmental water (includes return flows).⁶⁹
192. Collaboration and coordination between water managers is one of the keys to delivering the environmental outcomes of the Basin Plan. In 2016-17 the number of coordinated events across multiple water holders had increased to 37 per cent of all events.
193. The Basin Plan builds on existing initiatives like The Living Murray (TLM), a joint partnership between the Australian Government, Basin state and territory governments and the Murray–Darling Basin Authority. The Living Murray was established in 2002 and has acquired almost 500 gigalitres of water for the environment.⁷⁰ In addition to recovering water for the environment, the program uses purpose-built infrastructure that helps deliver water to the icon sites and improve the health of the River Murray.
194. The six TLM icon sites have been monitored since 2006-07. The monitoring is used to assess the key indicators of health such as vegetation, fish and waterbirds, and track progress against the site ecological objectives.
195. A [recently released report](#) is the first attempt at providing a high level qualitative assessment of the performance against the icon site objectives from 2006-07 to 2016-17. This monitoring provides strong evidence that where environmental water holders and managers have been able to deliver water for the environment, the health of the southern Murray-Darling Basin rivers, wetlands and floodplains is improving.
196. South Australia is of the opinion that there is evidence that the Basin Plan has begun to improve the health and resilience of the ecosystems and ecological functions of the Basin, but that the remaining water recovery and environmental equivalents are required to deliver the full intended benefits. A full review after 2024 is therefore the appropriate time to critically assess this.

<http://www.vewh.vic.gov.au/news-and-publications>, New South Wales Office of Environment and Heritage website <http://www.environment.nsw.gov.au/topics/water/water-for-the-environment>.

⁶⁹ The water delivered includes return flows (parcels of water delivered at multiple delivered at multiple downstream sites) and planned environmental water.

⁷⁰ Included in the BDL.

Achieving the objectives of the Basin Plan

197. In simple terms the *Water Act* establishes the Basin Plan to provide for limits on the quantity of water that may be taken from the Basin water resources as a whole and from the water resources of each water resource plan area.⁷¹
198. The Basin Plan's monitoring and evaluation program requires five yearly reporting on the outcomes and effectiveness of the Basin Plan. Initially, the first five yearly evaluation was due to take place in 2017. In 2014 an independent review of the *Water Act* recommended shifting the five yearly evaluation cycle to start in 2020, so to better align with the implementation milestones and a number of other Basin Plan reviews.
199. The Australian Government agreed to this recommendation, but also suggested that the Authority consider conducting a pilot or interim evaluation in 2017 to provide preliminary results to communities on key areas of interest.
200. With the Basin Plan not yet fully implemented, the 2017 evaluation has found that many elements of the Basin Plan are on track and there have been some significant achievements, but that progress is lagging in several important areas.
201. With a renewed focus, South Australia is confident that once fully implemented in 2024, the agreed Basin Plan will deliver equivalent environmental outcomes to a water recovery volume of 3,200 gigalitres per year.

Facilitation and Protection of Environmental Flows

202. When the Basin Plan was first made, the setting of SDLs made certain assumptions, known as Pre-requisite Policy Measures (PPMs)⁷² to facilitate the efficient use of environmental water.
203. When setting the SDL, the Authority assumed that PPMs would be implemented to allow the maximum environmental benefit to arise from use of the Commonwealth's licensed environmental water. Without this implementation, proportionally more water would be required to meet the environmental outcomes of the Basin Plan, leaving less for other purposes.
204. These assumptions underpin both the SDL settings in the Basin Plan and the Plan's anticipated environmental outcomes. They include arrangements to re-credit environmental return flows from floodplains for downstream environmental uses and measures that enable environmental water to be released from dams to complement natural flow events in ways that deliver more environmental benefits.
205. Basin jurisdictions agreed to implement the PPMs under the [*Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin 2013*](#), by June 2019 and prepared implementation plans by June 2017. The Authority assessed the adequacy of state PPM implementation plans prior to the operation of the SDL adjustment

⁷¹ Section 19 *Water Act 2007* (Cth)

⁷² These measures are referred to as 'unimplemented policy measures' in the Basin Plan.

as the outcomes of these assessments are material to the size of the SDL offset adjustment.

206. In addition, as part of the development process for the water reforms being introduced, the New South Wales Government has released a [consultation paper on better management of environmental water](#) and the [draft Water Management Amendment Bill 2018](#), as an example of the mechanisms that could be enacted to enable key elements of the total water reform package. The draft exposure bill includes provision for temporary water restrictions and mandatory conditions on access licences for the purpose of protecting environmental flows from diversion.

Return Flows⁷³

207. As a consequence of joint Basin Salinity Management in the 1980s and 1990s, and the Millennium drought, irrigation practices and infrastructure had already improved significantly by 2009 and the efficiencies from this formed part of the baseline conditions for the Basin Plan.
208. Return flows are very site specific and the impact of return flows vary in the Basin from jurisdiction to jurisdiction. Where relevant, they are included in jurisdictional water resource plans prepared under the Basin Plan and the hydrological models used to determine the available resource pool include return flows in their routing routines.
209. Return flows are only one part of the total water savings obtained from irrigation efficiency refurbishment programs which include evaporation, unmetered use and meter errors, unauthorised water use and unscheduled flows caused by the difficulty of maintaining specific water levels in supply channel pools, unscheduled maintenance works to channels and rainfall.
210. Irrigation modernisation projects estimate the losses from irrigation in assessing applications for funding and in determining the water entitlements to be transferred to the Commonwealth.⁷⁴
211. Reducing return flows by more efficient irrigation infrastructure and transferring savings to water entitlements held for the environment benefits both agriculture and the environment as:
- a. return flows are not solely available for the environment and are reregulated for consumptive use;
 - b. seepage due to inefficient watering causes rising water tables and salinisation of rivers and land;
 - c. irrigation surface run-off contains high levels of nutrients, salt or other pollutants that affect water quality and aquatic organisms;

⁷³ In this section return flows are when water from irrigation channels or excess water from irrigation runs off the surface or through the soil profile back into the river system.

⁷⁴ Audit data is available.

- d. water entitlements allow more scope for environmental water to be used when and where it can have the most benefit to the environment; and
- e. in dry periods, they ensure that water is available for the environment – return flows decrease during dry periods.