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Dear Mr Walker

Thank you for your letter dated 10 September 2018 providing further questions for the South Australian government and inviting attendances at the public hearings.

Further to my letter on 14 September regarding representation at the public hearings please find attached a response to your questions.

Yours sincerely

Minister for Environment and Water

Date: 20/09/2018

Encl: Response to additional request for clarification of South Australian Government Submission

Murray-Darling Basin Royal Commission

Response to additional request for clarification of South
Australian Government Submission

September 2018



Additional Questions for South Australia

Productivity Commission

1. *In its recently published draft report concerning a five-year assessment of the Basin Plan, the Productivity Commission made the following findings and recommended the following matters upon which I seek your view:*

- a. *"The 2024 deadline for supply projects is highly ambitious, if not unrealistic". Does the SA Government agree? If not, why not?*

The South Australian Government agrees that the 2024 deadline is highly ambitious but not that it is unrealistic. As outlined in our previous submission, nine supply measure projects are already operational and four projects are in trial or under construction and it could be inferred that more than a third of the 605 gigalitre offset is currently in operation. Despite the ambitious timeframe, a number of projects involve the construction of regulators, which do not involve difficult construction techniques. Provided that adequate investigations, design works and consultation are completed before construction commences, they should be able to be built relatively quickly.

The 2024 deadline has been in place since 2012. Finalisation of the Sustainable Diversion Limit (SDL) adjustment mechanism and therefore commencement of individual project implementation was delayed at the request of the States who wanted more time to prepare business cases for additional projects. Delays from the Parliamentary debate over amending the Sustainable Diversion Limits (SDLs) have resulted in a delay of less than 12 months.

The South Australian Government does not support the Productivity Commission's recommendation 4.2 to extend the deadline past 2024. It is too early to hold that the deadlines will not be met. Work conducted in the next two years is critical for defining the scope of works, and early no-regrets works in the constraints packages will go some way towards making up time.

The Australian Government has recently proposed measures to provide initial funding to the States to further develop projects, conduct stakeholder consultation and assess any risks and impediments to implementation. Implementation funding will then be subject to the outcome of a gateway process and a National Partnership Agreement, which should assist in focussing States on implementation of these projects. Calls to extend the deadline will distract from and delay implementation. States have an incentive to undertake these projects within the timeframe as under the reconciliation process if they are not completed by 2024 there will need to be additional water recovery.

Extending the deadline at this time reduces Basin States' incentives to commence implementing the projects and further delays the environmental benefits achieved from the SDL adjustment mechanism.

- b. *In relation to efficiency measures, "The proposed constraints projects are unlikely to be fully operational by 2024 and may not achieve the required flow rates at key sites to deliver the enhanced environmental outcomes". Does the SA Government agree? If not, why not?*

The Productivity Commission states that Basin Plan modelling suggested that the extra 450 gigalitres would have few additional benefits if constraints were not eased or removed to allow river operators to meet increased demands from environmental water holders.

While this may have been correct when the Basin Plan was being negotiated it is no longer accurate. This statement assumes the volume of water to be held by the Commonwealth Environmental Water Holder in 2024 will total 3,200 gigalitres. Implementation of the SDL Adjustment Mechanism means that the Commonwealth Environmental Water Holdings in 2024 will be around 2,800 gigalitres if all of the supply measures are implemented as currently notified.

At the time the Basin Plan was negotiated, the Murray-Darling Basin Authority's judgement was that 2,800 gigalitres with the existing operational arrangements would achieve environmental objectives for in-stream processes and low-level wetlands and floodplains¹. These environmental objectives are supported by water recovery and rule changes rather than supply measure infrastructure which generally aims to water specific wetlands higher on the floodplain.

The Murray-Darling Basin Authority's (MDBA) judgement in 2012 based on the modelling, was that water recovery of 2,400 gigalitres was insufficient to achieve key environmental objectives for the River Murray downstream of the Murrumbidgee junction², including salinity targets in the Coorong³ during dry periods.

South Australia is of the opinion that the 450 gigalitres needs to be recovered to ensure the delivery of baseflows and freshes to the lower floodplain⁴ and the Coorong salinity indicators⁵ of the 2,750 gigalitre Basin Plan as well as the enhanced environmental outcomes listed in Schedule 5.

While the 2,800 GL of environmental water can be delivered within the current physical constraints, relaxing or removing key constraints would allow for more flexibility in water delivery, which means we can achieve even more with the water available and deliver the environmental outcomes of the 3,200 gigalitre equivalent Basin Plan.

As well as increasing peak flows in winter and spring the Constraints Management Strategy is also about extending the duration of natural high flow events. South Australia is of the opinion that constraints may not need to be fully operational to increase the environmental benefits that could be achieved with environmental water, and address the impacts to the community from low lying infrastructure during natural high flows.

There is still a significant body of work that needs to be delivered in the next two years to refine the actual scope of works required and their benefits. Until that work is undertaken no one can say whether they will be achieved or not and what the benefits are. Full funding for constraints projects is subject to a gateway process and 'no regrets' early works packages will help bridge the gap. In some areas these works could have a significant benefit to the delivery of water and protection of communities in their own right.

¹ Productivity Commission (2018) Murray-Darling Basin Plan: Five Year Assessment, p 128

² MDBA (2012) Hydrological modelling report p viii

³ Ibid p 237

⁴ Needs to be achieved before you can achieve Schedule 5 2(f) of the Basin Plan

⁵ Ibid Schedule 2(a) of the Basin Plan

In 2017, the States developed the Enhanced Environmental Water Delivery supply measure project which will complement the constraints management projects by improving coordination, forecasting, planning and operations across the Basin to better synchronise managed environmental watering events with natural flows.

Flows of 80,000 megalitres per day at the South Australia border require an unregulated flow component, together with releases made from storage to supplement this flow. Releases from storage need to be made with cross-region cooperation and strategy, and agreed triggers for such events. The hydrological character from each region varies, and so a proper strategy will understand this and actively use each region to its potential to supplement unregulated flow conditions. This requires utilising flows taking into account building a volume, a peak flow and a duration and could mean that more can be achieved within the current constraints and not all existing proposals would be required.

While the downstream environmental benefits of these flows to South Australia are often highlighted, there are also local environmental benefits for upstream floodplains within each reach and tributary of the southern connected system where constraints will be managed that contribute to the enhanced environmental outcomes (Schedule 5 (2)(f)(g)).

- c. *Still on efficiency measures, "there is a material risk that recovering the additional 450GL could be significantly more expensive than anticipated...the benefits and costs of the program as a whole have not been assessed". Does the SA Government agree? If not, why not?*

At the time the *Water Amendment (Water for the Environment Special Account) Bill 2012* was debated in the Australian Parliament it was recognised that up to twelve years later, the funds in the Special Account may not be sufficient to acquire the 450 gigalitres and remove key constraints. The Bill was amended during debate to include two independent reviews to be conducted in 2019 and 2021 (section 86AJ of the *Water Act 2007*). These reviews were intended to enable parliamentary scrutiny of the account and provide an opportunity for the Australian Parliament to increase funding for the Water for the Environment Special Account should the program be more expensive than anticipated.

The costs and benefits of the Basin Plan as a whole, including all aspects of the SDL adjustment mechanism, were assessed in the *Regulation Impact Statement Basin Plan Water Act 2007 (Cth)* in 2012. The Statement highlighted that infrastructure investments under Water for the Future substantially reduce the impacts of water recovery.

- d. *Draft recommendation 5.2 states "the Department of Agriculture and Water Resources should release a new strategy for recovering the additional 450GL in a no-regrets fashion in early 2019". Does the SA Government agree that a new strategy is required for recovering the additional 450GL? If not, why not?*

The SA Government does not agree that a new strategy is required to recover the additional 450 gigalitres. The recent agreement between the Government and the Federal Labor Party links payments under the National Partnership Agreement for the delivery of SDL supply measures to states who are able to demonstrate their full cooperation with the delivery of efficiency measures as defined under the Basin Plan. Beneath this Basin governments are currently working together to develop an implementation plan for consideration by the Ministerial Council.

- e. *At page 113 of the draft report, "the hydro-cues" supply measure is mentioned. As stated by the Productivity Commission: "realising the full benefit of hydro-cues is critically dependent on implementing constraints projects...which are highly unlikely to be completed by 2024".*
- i. *What level of confidence does the SA Government have that constraints projects will be completed by 2024?*

The South Australian Government is currently confident that the constraints measures will be implemented, but the next 18 months will be critical in maintaining that confidence.

If constraints projects are not completed as notified by reconciliation in 2024, the SDL adjustment will have to be reduced and water recovered from consumptive users, either through additional water purchase or reductions in SDLs through water resource plans.

- ii. *If that level of confidence is low, why did the SA Government support the supply measure at the Basin Officials Committee?*

The Productivity Commission's comments in relation to hydro-cues being critically dependent on implementing constraint projects relate to the size of the SDL adjustment not the benefits of the Enhanced Environmental Water Delivery project (EEWD).

EEWD is an environmental water delivery strategy closely linking environmental water management and river operations across the southern connected basin. Synchronising operations of all the southern connected basin sites to hydrological cues is complex in the current administrative and operational frameworks. The river operating frameworks are not designed to deal with large volumes of environmental water (to multiple sites from multiple water holders). EEWD is designed to build on existing knowledge to improve information gaps and increase the forecasting abilities of environmental water managers and river operators.

Environmental water released in conjunction with a natural event has increased effectiveness when targeting floodplain inundation as less water is needed to achieve the desired flow and ecological responses. Maximisation of the environmental benefits and SDL adjustment requires parallel delivery of the constraints projects but it does not necessarily mean that there are no environmental benefits if the constraints proposals are not fully implemented to maximise the SDL adjustment.

If EEWD is not implemented as notified at reconciliation in 2024, the SDL adjustment will have to be reduced and water recovered from consumptive users, either through additional water purchase or reductions in SDLs through water resource plans.

- f. *Commencing at page 289, the Commission addresses the issue of "Have institutional and governance arrangements been effective?"*
- i. *Does the SA Government agree with the draft findings at 14.1 (page 300) concerning key deficiencies in institutional and governance arrangements?*
- ii. *Does the SA Government agree with draft recommendation 14.2 recommending a restructure of the Murray-Darling Basin Authority?*

The Productivity Commission's draft report has only just been released and at this point in time the South Australian Government has not considered the findings and recommendations regarding institutional and governance arrangements in any depth.

SDL Adjustment Mechanism

The following general information on the assessment process is provided for reference with respect to the responses below for individual offset projects.

The majority of the SDL offset projects are not only complex in themselves but also interact with other projects. During 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.

In response to issues and risks raised by jurisdictions, projects were refined, further analysis or reports were provided, or actions were agreed to manage issues and risks. Examples of further work include, but are not limited to, additional ecological assessment, monitoring and modelling. In some cases, the work required related to interactions with other projects that were in different stages of development.

In many cases, agreement to progress to the implementation phase is conditional on further investigation and resolution of the identified issues and risks. To ensure this occurs, the issues and risks were included on a Post Phase 2 Issues Register, with agreed treatments. For each project, the final Post Phase 2 issues register then forms part of the Phase 3 Confirmation Statement and will be dealt with as part of further project design and development in the implementation phase to 2024.

The two stage funding approach for implementation of most projects, combined with the reconciliation process under section 7.21 of the Basin Plan, provides confidence in moving forward with the implementation of the agreed set of projects at this time.

Menindee Lakes Water Saving Project

2. *How did the SA Government, as a member of the Basin Officials Committee (BOC), satisfy itself that the Menindee Lakes Water Saving Project business case met the following criteria required by the Phase 2 Assessment Guidelines for Supply and Constraint Business Case Measures:*

- a. 3.1.1 – *It will “achieve equivalent environmental outcomes with a lower volume of held environmental water than would otherwise be required”;*

The criteria was assessed as being met by South Australia based on the following:

- The long-term average annual evaporative savings from the reconfiguration of Menindee Lakes and the changes to operating rules will provide “new” environmental water that can be used to achieve environmental outcomes. This new water replaces an equivalent volume that now does not need to be recovered from consumptive users.
- A requirement for the enduring protection of the water savings generated by the project. This can be delivered in a number of ways, including held environmental water entitlements, changes to the operating arrangements (rules) and the creation an environmental account to manage the savings when they occur.
- A requirement for further scientific work to better identify ecological objectives, environmental water requirements and ecological risks for the Menindee Lakes system as a result of the

changed operating arrangements. Based on these outcomes and any associated project updates, an assessment of environmental equivalence can be undertaken, which will inform the reconciliation assessment.

- b. 4.4.1 – *It “includes an ecological assessment that is detailed enough to provide a clear picture of the likely ecological benefits of the project, including some quantitative assessment where this is possible”;*

The environmental benefits of the project are primarily due to the water savings that can be used to deliver defined environmental outcomes in the Lower Darling and the River Murray.

There is limited detail on the anticipated environmental outcomes at Menindee Lakes and in the other areas affected by the proposal (i.e. the Lower Darling and the Darling Anabranch). As such, support of the project to implementation includes requirements for further scientific work to better identify ecological objectives, environmental water requirements and ecological risks for the Menindee Lakes system as a result of the changed operating arrangements. This work will inform the development of appropriate operating strategies and risk management plans.

- c. 4.4.2 – *“There is a demonstration that any adverse [ecological] impacts can will (sic) be managed, mitigated or are managed to acceptable levels”; and*

As for the identification of benefits under 2.b. above, further investigation of the ecological impacts and risks will be undertaken as part of the implementation phase of the project. This includes through the development of the required environmental impact statement (EIS) and any required referrals under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). This work will inform the development of appropriate operating strategies and risk management plans.

- d. 4.7.7 – *“All significant operating risks and impacts have been identified and analysed, and robust treatments and mitigations proposed”.*

The business case provides a high level assessment of risk and impacts as a result of the operation of the measure. A comprehensive list of potential operating risks and impacts were identified through the Phase 2 evaluation. These have been incorporated into the Post Phase 2 Risk Register and treatments identified, including future modelling and assessment work.

3. *Does the SA Government have a view as to whether the Menindee Lakes Water Saving Project is capable of achieving “equivalent environmental outcomes”, as required by Basin Plan ss 7.09(b), 7.15(1)(c) and 7.17(2)(a), in light of the fact that “the Menindee Lakes falls outside of the SDLAM framework for testing environmental equivalence.... Any trade-off of environmental outcomes associated with generating water savings at Menindee Lakes will not contribute to lower environmental outcome scores using the Ecological Elements method and therefore is not taken into account in determining the adjustment volume”? See MDBA Analysis: Menindee Lakes Water Saving Project Phase 2 Business Case, page 5.*

In supporting the Menindee Lakes project as part of the package of notified supply measures, the SA Government is of the view that the project is “capable” of achieving equivalent environmental outcomes.

Through the implementation phase, the ecological benefits and risks will be established (including through the EIS process) and the suite of identified issues and risks (including ecological and

operational) further investigated and addressed. The implementation investigations may result in updates to aspects of the project such as changes to the proposed operational arrangements or the implementation of risk management strategies.

Once the final project configuration and ecological assessment can be finalised, an evaluation to confirm that the net environmental outcomes of the final proposal are environmentally equivalent will be undertaken. Any impact on the supply contribution would then be determined at reconciliation.

4. *The MDBA noted that it "would expect that a qualitative assessment be undertaken to confirm that the net environmental outcomes of the final proposal are environmentally equivalent": see MDBA Analysis: Menindee Lakes Water Saving Project Phase 2 Business Case, page 5. Is the Government aware of any such assessment having been commenced, completed, or made available to the BOC or the MDBA?*

This assessment is contingent on the final structural configuration and operating rules, which will be further developed and refined during the implementation phase. It is anticipated that such an assessment would be undertaken and finalised prior to reconciliation in 2024. At this point it could inform the confirmation of the supply offset, or adjustment as required.

5. *Why did the BOC decide to include the Menindee Lakes Water Saving Project in its notification of the supply measures package to the MDBA, in light of:*
 - a. *The large number of issues identified as needing to be resolved or about which "further detail [is] required" as listed at pages 10-11 of MDBA Analysis: Menindee Lakes Water Saving Project Phase 2 Business Case; and*

South Australia cannot speak for the decisions of other members of the BOC. South Australia was of the view, at the time the supply measures package was notified, the potential benefits of the Menindee Lakes project had been identified, including its likely contribution to the supply offset. It was considered that treatments for the identified issues could be determined and outlined as part of the Phase 3 Confirmation Statement and then resolved through the project implementation phase.

- b. *The fact that a Phase 3 Confirmation Statement, which might address these issues, was not approved by the BOC before the notification was made?*

The Phase 3 Confirmation Statement has not yet been approved as a number of the required components are still to be finalised and agreed. This confirmation statement includes the final Post Phase 2 Risk Register and forward work plan to ensure that the identified issues are investigated and managed appropriately. The project will not progress further for funding until the Phase 3 Confirmation Statement is approved by BOC. The reconciliation process will ensure that changes to the project since notification can be assessed and any changes to the supply contribution determined. South Australia regarded the risk to South Australia of agreeing to notify this project without the Phase 3 Confirmation Statement to be minimal.

Enhanced Environmental Water Delivery Project

6. *The Royal Commission has received evidence that the Enhanced Environmental Water Delivery project should not be considered as a supply measure, because it represents an “unimplemented policy measure” in that it implements policies to credit return flows for downstream environmental use and allows the call of held environmental water from storage during unregulated flow events: see Basin Plan s 7.15(2). What is the SA Government’s response to this?*

South Australia’s understanding of this question is that the Commission has received submissions from Ms Slattery to the effect that the Enhanced Environmental Water Delivery project is in effect, an unimplemented policy measure and not a supply measure. “Including an unimplemented policy measure, already assumed in benchmark modelling, as a supply measure is double counting, not a water saving.”

In essence the Enhanced Environmental Water Delivery project (EEWD) is an environmental water delivery strategy. EEWD will build on existing knowledge to improve information gaps and increase the forecasting abilities of environmental water managers and river operators to enable synchronisation of environmental water delivery across the southern connected basin sites, based on hydrological cues. Maximisation of the environmental benefits requires parallel delivery of the constraints projects and the unimplemented policy measures.

Constraints projects will upgrade infrastructure, channel capacity and public and private landholders’ capacities to allow the existing flow limits to river operations in designated reaches to be increased to deliver environmental watering at higher regulated flow limits; the ultimate aim being to achieve inundation of low to mid-level floodplains. In essence, constraints projects provide the framework for the physical delivery of the environmental water.

In order to achieve the Basin Plan objectives the MDBA assumed that arrangements would be in place to protect and enable the re-use of environmental water. Protection and re-use of environmental water is necessary to realise the full asset value of Commonwealth environmental water and the investment of public funds.

EEWD cannot protect environmental water from extraction by consumptive users or allow the re-use of environmental water through return flows as limits on consumptive take and accounting for return flows are the responsibility of the States. The States have to amend their existing policies and processes to ensure that environmental water is not taken for consumptive use and that environmental water holders can be re-credited for return flows (not allowed for consumptive users).

Implementation of unimplemented policy measures provides new rules within a state which will then allow river operators to work outside the current rules for consumptive water and physically make the calls for water and build hydrological events. EEWD cannot be fully implemented if the unimplemented policy measures are not in place by June 2019.

As described in the Basin Plan at 7.15, when modelling the SDL adjustment, the Murray-Darling Basin Authority needed to, in its modelling, remove any unimplemented policy measures where those measures, at the time of determination, are not expected to come into effect by 30 June 2019. The most recent update to the Basin Officials Committee by proponent Basin states is that the implementation

plans will be given full effect by 30 June 2019, thereby negating any need for an adjustment to the Authority's modelling.

The combination of implementing the constraints projects, unimplemented policy measures and EEWD will provide river operators the capacity to coordinate the operating regime to deliberately manage the river system to provide a flow of 80,000 megalitres per day at the South Australian border.

MDBA Analyses of business cases

7. *In relation to the MDBA analyses of business cases:*

a. *When were these made available to the BOC?*

Individual business cases were submitted by the States from 22 September 2014 to 22 June 2017. Each of the proposals progressed through phases 1 and 2 at different rates, depending on when States submitted the required documentation (additional documentation was often provided to answer questions following the submission of the business case) and the time that was taken and needed to analyse the proposal and resolve issues.

A proposal could not progress to the next phase until all parties' responses were considered and relevant issues were addressed or agreed to be managed by the proponent.

b. *How did the BOC take these into account when assessing the proposals and finalising the package of proposals to be notified to the MDBA?*

The BOC was provided with a confirmation statement for each proposal containing an appendix outlining the remaining issues and associated treatments for the proposal in the Post-Phase 2 issues register.

Implementation of supply measures

8. *The Ministerial Council noted in its Communique: Murray-Darling Basin Ministers meet in Albury on 19 December 2017 that: "In relation to the implementation of SDL adjustment outcomes, Ministers requested officials finalise negotiations on a new Schedule to the 2013 Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin on agreed implementation arrangements".*

a. *What is the status of these negotiations, and when does the SA Government anticipate that the new Schedule will be agreed to?*

The Minister for Agriculture and Water Resources has agreed to arrangements for funding the implementation of SDL adjustment measures that supersede the decision by Murray-Darling-Basin Ministers on 19 December 2017. The Australian Government has advised South Australia that funding is to be provided through Commonwealth State arrangements under the Intergovernmental Agreement on Federal Financial Relations⁶. The Commonwealth intends to fund project implementation through a two stage process:

⁶ Under the Intergovernmental Agreement on Federal Financial Relations, National Partnership payments to the States are facilitated by the following types of agreements:

Stage 1 funding is expected to be provided bilaterally between each state and the Commonwealth through a Project Agreement under the *Intergovernmental Agreement on Federal Financial Relations* covering that state's relevant projects. Milestones in project agreements for initial funding would include the State:

- demonstrating continued cooperation with the delivery of Efficiency Measures consistent with the decision by Ministerial Council on 8 June 2018;
- implementing arrangements to ensure transparency for stakeholders of project development and implementation plans, including a defined launch of individual projects and regular reporting on progress with implementation;
- addressing issues identified with projects during the phased assessment process (either resolution or a strategy to address the issue); and
- progressing and completing project outputs as specified in the project agreements.

The National Partnership Agreement for the implementation of supply and constraint measures is expected to require the states to:

- deliver all notified supply measure projects including projects not eligible for supply measure funding (rule based projects) and those that are funded from other sources;
- clarify responsibility between Basin States and the Commonwealth for residual water recovery required as a consequence of any reconciliation adjustment by the Authority in 2024;
- demonstrate full cooperation with the delivery of Efficiency Measures as defined under the Basin Plan (and informed by decisions of Ministerial Council), with the payment of supply measure funding to the states being dependent on continuing progress with Efficiency Measures water recovery;
- specify the ownership of assets created by supply measure projects and responsibility for costs of ongoing maintenance and operation;
- implementation arrangements to ensure transparency of project development and implementation plans for stakeholders;
- resolve all issues identified in the phased assessment of projects for the SDL adjustment mechanism; and
- report regularly (expected to be quarterly) to the Commonwealth on progress with the implementation of the measures and other obligations.

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- National partnerships, which support the delivery of specified projects, facilitate reforms or reward those jurisdictions that deliver on nationally significant reforms;
 - Implementation Plans, may be required where there are jurisdictional differences in context or reward approach to implementation under National partnerships, or where information additional to the National partnership is required to increase accountability and transparency; and
 - Project Agreements, which are a simpler form of National partnership, for low value and/or low risk projects.

Commonwealth funding for individual projects would be provided through State specific and project specific schedules. Funding payments would be based on the satisfactory achievement of milestones which would address progress with implementation of the supply measure and other specified obligations.

Governance bodies for implementation of the package of measures are to be established, including an overarching body comprising the Commonwealth and the States overseeing the package of projects. The Commonwealth also expects that it will be invited to be represented on project oversight or steering committees for the implementation of the various supply measures.

Senior Officials commenced discussions on the National Partnership Agreement in August 2018 and expect to finalise a draft for consideration of Basin Governments by mid-2019 with subsequent approval by First Ministers in late 2019.

b. *What does the SA Government understand will be included in that new Schedule?*

Refer to Question 8 a. above

SDL Adjustment Mechanism Process Review

9. *The MDBA has published a slide show of a presentation delivered by Brett Tucker, Peter Davies and Graeme Turner titled 'SDL Adjustment Mechanism Process Review', delivered at the SDL Adjustment Technical Workshop on 28 June 2018.*

a. *Has the SA Government received any documents related to the findings of this review, other than this slide show, that it can provide to the Royal Commission?*

The South Australian Government has not received any other documents.

b. *Slide 14 states that "the SDLAM processes have been followed for all notified projects, however adaptations have been necessary for several complex supply measures where the required activities have thus far prevented resolution of some elements of the evaluation process." What does the Government understand these "adaptations" to the process to have been?*

Pages 10 and 11 of the *Phase 3 Confirmation Guidelines For Supply and Constraint Measure Projects* outline the expectations for the confirmation of supply and constraint measure proposals.

Many of the complex projects such as the River Murray constraints projects and Menindee Lakes Water Savings project will have elements that are subject to statutory planning, environmental and cultural approvals at both State and Commonwealth levels. These approvals require detailed designs to be completed which in turn requires funding to be released. The process agreed by Ministerial Council in May 2015 was adapted to enable confirmation statements to be issued for these projects with these regulatory approvals identified but not commenced. Similar adaptations were made in regard to the requirement for a process for dealing with landholder agreements and for amendments to the Murray-Darling Basin Agreement and its subsidiary documents.

Similarly, the SDL volume (605 gigalitres) is the modelled volume from the package of projects not the sum of the results from each projects. This means that it was also not possible to meet the requirement

to estimate the proposed SDL adjustment or advise whether the SDL adjustment volume of the measure is enhanced or reduced by other measures as part of the confirmation of supply measure proposals.

- c. *Slide 5 states that "final funding for implementation of all projects is contingent upon satisfactory resolution of outstanding issues." What are the specific arrangements that provide for this linking of funding to the resolution of outstanding issues?*

Under the Intergovernmental Agreement on Implementing Water Reform in the Murray-Darling Basin, the Commonwealth committed to fund supply and constraint measures.

Funding for the projects will be provided to the States by the Commonwealth Government according to a new National Partnership Agreement under the *Intergovernmental Agreement on Federal Financial Relations* and the requirements of the *Public Governance, Performance and Accountability Act 2013* (Cth).

Stage 1 funding is expected to be provided bilaterally between each state and the Commonwealth through a Project Agreement under the *Intergovernmental Agreement on Federal Financial Relations* covering that state's relevant projects. Milestones in project agreements for initial funding would include the State:

- demonstrating continued cooperation with the delivery of Efficiency Measures consistent with the decision by Ministerial Council on 8 June 2018;
- implementing arrangements to ensure transparency for stakeholders of project development and implementation plans, including a defined launch of individual projects and regular reporting on progress with implementation;
- addressing issues identified with projects during the phased assessment process (either resolution or a strategy to address the issue); and
- progressing and completing project outputs as specified in the project agreements.

The National Partnership Agreement for the implementation of supply and constraint measures is expected to require the states to:

- deliver all notified supply measure projects, including projects not eligible for supply measure funding (rule based projects) and those that are funded from other sources;
- clarify responsibility between Basin States and the Commonwealth for residual water recovery required as a consequence of any reconciliation adjustment by the Authority in 2024;
- demonstrate full cooperation with the delivery of Efficiency Measures as defined under the Basin Plan (and informed by decisions of Ministerial Council), with the payment of supply measure funding to the states being dependent on continuing progress with Efficiency Measures water recovery;
- specify the ownership of assets created by supply measure projects and responsibility for costs of ongoing maintenance and operation;

- implementation arrangements to ensure transparency of project development and implementation plans for stakeholders;
- resolve all issues identified in the phased assessment of projects for the SDL adjustment mechanism; and
- report regularly (expected to be quarterly) to the Commonwealth on progress with the implementation of the measures and other obligations.

Commonwealth funding for individual projects would be provided to the states in instalments based on the satisfactory achievement of milestones which would address progress with implementation of the supply measure and other specified obligations. Governance bodies for implementation of the package of measures are to be established, including an overarching body comprising the Commonwealth and the states overseeing the package of projects. The Commonwealth also expects that it will be invited to be represented on project oversight or steering committees for the implementation of the various supply measures.

Water Recovery

10. Does the Government have a position in relation to whether the 1500GL 'cap' on buybacks should remain in place?

The South Australian Government understands that based on the current water recovery planning assumptions and finalisation of the amendment to make an SDL adjustment of 605 gigalitres that the 1,500 gigalitre cap on buyback will have no effect on the water recovery target for the existing Basin Plan.

Should it become apparent that the 605 gigalitres will not be delivered as notified at reconciliation in 2024, the SDL adjustment will have to be reduced and water recovered from consumptive users, either through additional water purchase or reductions in SDLs through water resource plans. The National Partnership Agreement for the implementation of supply and constraint measures is expected to clarify responsibility between Basin States and the Commonwealth for the residual water recovery required as a consequence of any reconciliation adjustment by the Authority in 2024.

The 1,500 gigalitre limit on water purchases ceases to have effect when a report of the results of a review of the Basin Plan (subsection 50(5)) is provided to the Commonwealth Minister (subsection 85C(2)).

11. In relation to [87a] of the Government's submission, why is 2.9GL of water purchased by the Australian Government exempt from the 1,500GL limit?

The 2.9 gigalitres of water was purchased directly from the government of South Australia and exempt under section 85C(4) of the Water Act 2007. Note that the purchase was for 3.2 gigalitres of South Australian water access entitlement shares, which delivers 2.9 gigalitres (LTAAY) towards the long-term water recovery target.

Monitoring and Evaluation

12. On page 9 of its report titled 'Environmental Assets – 2017 Evaluation', the MDBA stated:

"Currently, there is no suitable framework outlining how asset-scale information will be consistently reported by the states; nor how the MDBA will aggregate and evaluate asset-scale information to inform future Basin Plan Evaluations. This work should be developed as a matter of urgency in order to optimise consistency of reporting from states..."

And:

"Many of the current monitoring programs at the asset scale were established for a range of purposes and predominantly established prior to the Basin Plan. Therefore, there are not yet explicit linkages to the Basin-wide Environmental Watering Strategy, nor the priority assets and functions to be described in the Long Term Watering Plans.

[It is recommended that the MDBA and states] review alignment of existing asset-scale monitoring programs within the Basin-wide Watering Strategy and Long-Term Watering Plans' objectives and targets as they are finalised."

In relation to this statement:

- a. *Is the SA Government aware of any work being undertaken to develop a framework outlining how asset-scale information will be reported by the states and evaluated by the MDBA?*

Basin Plan evaluations are a collaborative task and the Authority is already, in consultation with the Basin Governments, Commonwealth Environmental Water Holder and the Department for Agriculture and Water Resources, working on a Monitoring and Evaluation Framework (draft recommendation 13.2 from the Productivity Commission) that will encompass the reporting and aggregation of asset-scale evaluation in future Basin plan Evaluations. The revised framework will define the specific evaluation questions that are to be used to evaluate the outcomes and effectiveness of the Plan and is expected to be completed by the end of November 2018.

The BWEWS is due to be reviewed in 2019. This review process should be heavily influenced by adaptive management currently being practiced in the environmental watering space. In addition, a review of each long-term watering plan is triggered when the corresponding Water Resource Plan is accredited. That means that all the states' LTWPs will be triggered for review by 30 June 2019 (assuming all WRPs are accredited as planned).

- b. *Is the SA Government confident that its own current monitoring arrangements are sufficient to enable the Government to report on "the achievement of environmental outcomes at an asset scale" from July 2019, as required by Basin Plan Schedule 12 s 8?*

Yes. South Australia's monitoring arrangements will, as far as possible, draw on existing monitoring and data sources and adhere to the principle of 'collect once, use multiple times'. Consequently South Australia will predominately utilise the monitoring currently undertaken as part of The Living Murray program.

South Australia's approach to reporting on "the achievement of environmental outcomes at an asset scale" was presented to representatives from the Basin States, Commonwealth Environmental Water Office, Department of Agriculture and Water Resources and Murray-Darling Basin Authority in February 2018. It focuses on the three Water Resource Plan Areas and reflects the ecological targets and objectives outlined in each of the long-term environmental watering plans (LTWP) for the WRP areas - reporting on the outcomes achieved for each priority environmental asset (as defined in the LTWP).

The proposed approach was tested in 2017 for the SA River Murray WRP area and the learnings from that exercise are being used to engage with the MDBA and other jurisdictions around reporting expectations to ensure useful reporting is produced.

South Australia views Matter 8 evaluation and reporting as having the following multiple purposes:

- to meet Basin plan reporting obligations under Schedule 12;
- to communicate Basin plan outcomes to key stakeholders, including the community;
- to inform South Australia's, the Australian Government's, and other States' environmental water delivery decision-making and adaptive management capacity; and
- to make a meaningful contribution to the Authority's evaluation of the effectiveness of the Basin Plan.

The key questions South Australia aims to answer in the Matter 8 evaluation are:

- to what extent are expected environmental outcomes being achieved;
 - if expected environmental outcomes are not being achieved, why not; and
 - to what extent is the provision of water, in line with environmental water requirements, contributing to achievement of expected outcomes.
- c. *Does the SA Government have any other comments to make regarding whether the current monitoring and evaluation programs and arrangements are sufficient to enable the states and the MDBA to measure the ecological impact of the Basin Plan?*

The MDBA commissioned a consultant to review the 2017 Evaluation process. The review identified a lack of clarity about the role of the MDBA and the jurisdictions in the evaluation and that jurisdictions felt that they had limited ownership of the evaluation findings. Once the Monitoring and Evaluation framework has been agreed, the MDBA proposes to collaborate with jurisdictions to develop an Engagement Plan for the 2020 Evaluation. The aim is to ensure that there is clarity on what input is required and in what timeframe, as well as opportunities for input and review. The engagement plan is expected to help jurisdictions with project planning and allocating resources. The MDBA will provide a draft plan to the jurisdictions for discussion in late 2018.

Accessibility of data and data management was identified as an issue in the recent review of the 2017 Evaluation process. Identifying data requirements, who will collect it, and co-design of data sharing and use approaches with jurisdictions is seen as an opportunity to mitigate the risk of this re-occurring for the 2020 Evaluation. The identification of data requirements, and information gaps (given the evaluation questions specified in the framework) is consistent with draft recommendation 13.3 of the Productivity

Commission. Incorporating principles for sharing and using data within the Evaluation Framework will help ensure that there is clarity across jurisdictions and reduce risks associated with concurrent reporting timeframes. It will also draw a line of sight between the purpose of the evaluation, what is being evaluated and data requirements.

Socio-economic outcomes

13. *In June 2018, the Ministerial Council announced that "in relation to the potential for on-farm infrastructure efficiency measures, state and territory governments and the Commonwealth government will work to develop agreed additional program criteria to ensure neutral or beneficial socio-economic outcomes. Additional program criteria could take into account wider regional impacts and the impact of cumulative implementation of programs"; see Communiqué: Murray-Darling Basin Ministers meet in Canberra, 8 June 2018. In relation to this issue:*

- a. *What is the SA Government's position as to whether the definition of "socio-economic outcomes" should "take into account wider regional impacts and the impact of cumulative implementation of programs"?*

The South Australian Government does not support a change to the definition of "socio-economic outcomes" in the Basin Plan. South Australia does support understanding the broader distribution of impacts so that program criteria can be defined to mitigate potential risks and maximise opportunities for positive outcomes for communities across the Basin.

- b. *What progress has been made by the Ministerial Council in relation to this work to refine this definition or develop additional program criteria?*

Officials are working together to identify key issues and opportunities beyond the existing efficiency measure program criteria to further ensure that neutral or beneficial socio-economic outcomes are achieved. Engagement with community and industry leaders around the possible additional program criteria is being planned, ahead of the work being considered by Murray-Darling Basin Ministerial Council.

Water resource plans

14. *Please provide an update as to the status of the SA Government's Water Resource Plan development since its submission? What progress has been made since that time?*

The assessment of the SA Murray Region is almost complete with South Australia awaiting advice from the MDBA that they have received advice from MLDRIN. Once the Murray-Darling Basin Authority receives this advice, the assessment can be finalised and the plan progressed through to accreditation.

Since providing the submission to the Royal Commission, South Australia has provided the first full draft of the River Murray WRP to the Murray-Darling Basin Authority for initial advice. Initial advice has been received from the MDBA and a workshop was recently held between staff from the Murray-Darling Basin Authority and the Department for Environment and Water to work through the MDBA advice. While there is still further work required for the River Murray WRP to reach accreditation, the plan is very well progressed and is expected to be submitted for accreditation as scheduled on 28 February 2019.

Advice on the draft Eastern Mount Lofty Ranges WRP has been received from the Murray-Darling Basin Authority and changes to the text are being progressed. This plan is also expected to be submitted for accreditation as agreed with the Murray-Darling Basin Authority at the end of 2018.

15. *In the context of developing its Water Resource Plans, what steps is the SA Government taking in relation to:*

a. *The connectivity of Water Resource Plans across valleys, and between states; and*

South Australian officers attended a cross-jurisdictional (South Australia, Victoria and New South Wales) River Murray connected water resources workshop hosted by the Murray-Darling Basin Authority in early September. Staff from the Authority provided overviews from technical staff and river operators to assist the jurisdictions understand the complexity of connections and the issues to be considered in developing WRPs. The MDBA also provided a detailed breakdown of where regard to connected water resources is required throughout WRPs, whether explicit or implicit. Discussions focussed on consistency of approach as far as practicable within connected water resource plans. It has been agreed that some common words and products, such as flow diagrams, will be developed to support the States in providing a common approach. These will be developed over the coming weeks and a second workshop to identify further opportunities for consistency across connected WRPs for extreme events, classifying risks, enabling coordination of environmental watering between WRP areas and approaches to incorporating information from Aboriginal Nations that cross borders is currently being organised for 24 September 2018.

b. *The protection of environmental flows?*

South Australia typically receives volumes of flow each year above the Entitlement, including unregulated flows, water traded to South Australia (including environmental water deliveries), and other dilution flows as determined by the Agreement – such as Additional Dilution Flow and Lindsay River Dilution Flow.

The Water Allocation Plan for the River Murray Prescribed Watercourse clearly states that apart from water traded to South Australia for consumptive purposes, this additional 'required flow' remains in the river system for environmental purposes.

The Department for Environment and Water is currently finalising an Environmental Water Return Flow Policy.

For environmental flows within connected water resources please refer to Question 15 a.

South East Flows Restoration Project

16. *Further to evidence that was given to me in a public hearing on 5 September 2018, can you please advise:*

a. *The basis for the assertion by DEWNR in an email dated 19 October 2017 to Ms Fiona Paton that the South East Flows Restoration Project business case was not publicly available by reason of it being 'commercial in confidence';*

The business cases prepared for the SDL supply projects are government-to-government working documents that seek Commonwealth funding and assess project feasibility. As stated previously, the South Australian Government's practice has not been to make specific business cases seeking Commonwealth funding publically available as these documents are developed for the purpose of securing funding not public communication. Projects can undergo significant changes during the due diligence process and as such, the information contained in the business case, if made public, can cause greater public confusion and consternation. Accordingly, project specific communication processes and materials are developed for stakeholders and the wider community when funding for a project has been agreed by the Commonwealth.

The Government does not undertake this type of construction itself and external suppliers are sought and engaged through a tender process. There are a limited number of suppliers prepared to tender for environmental construction projects in regional South Australia and where that process is foreshadowed or active, it is entirely appropriate to keep certain project details, including cost estimates and planning assumptions that may influence competitive tenders, private. That said, the Government recognises that the community expectation that public funds will be spent appropriately needs to be balanced with community expectations of transparency.

With respect specifically to the South-East Flows Restoration Project (SEFRP) business case, in October 2017 when Ms Paton requested a copy, an additional proposal was seeking funding and undergoing due diligence with a competitive tender process being contemplated. Given the similarities between the two projects, the release of cost estimate and related information from the SEFRP business case could negatively influence the competitive tender of the other proposal. Ms Paton was offered an explanation and was provided with publically available information and the contact details for the project manager to discuss further.

- b. The outcome of the workshop hosted by the SA Government on 5 June 2018 involving experts from the science community and water resource managers, regarding the South East Flows Restoration Project.*

The Coorong Summit brought together more than 70 attendees including scientists, members of the local community, traditional owners, site managers, government representatives from state, federal and local governments and environmental water managers. Its purpose was to consolidate a variety of perspectives on the current scientific understanding of the site, and the key processes that are driving its condition.

Exercises conducted included identifying long-term actions and knowledge gaps relevant to the above vision. An independent facilitator conducted the Coorong Summit and has provided a draft Summit Summary Report which will shortly be released to the attendees and general public.

- 17. Can you please provide a response to the evidence from Professor David Paton (provided to the Commission through his submission, and in evidence on 5 September 2018), that history shows that the salinity fluctuates across the system over time such that the assertion that there is an excessive salinity problem in the Coorong is a fallacy, and attempts through this project to address it are misplaced. Secondly, that the SE flows project creates a risk of increasing blue-green algae in the Coorong.*

The salinity of the Coorong generally increases with increasing distance from the Murray Mouth, but varies over time, mainly in response to barrage outflows from the Murray-Darling Basin (MDBC 2006). Avoiding extreme salinities (greater than 140 grams per litre) and low water levels that expose the habitat for *Ruppia tuberosa*, are essential at avoiding harm to the ecology of the Coorong. Salinities and water levels experienced by the South Lagoon during the Millennium Drought (late 1996 to mid-2010), have been demonstrated to result in a significant impact on the diversity of species and international values of the Coorong.

The Coorong South Lagoon is in a slow recovery from the adverse impacts of the Millennium Drought and has been managed to a target salinity range between 60 to 100 grams per litre based on historical understanding and management approaches advised by independent scientific experts including Professor Paton⁷. This strategy was considered the most likely to provide (amongst other benefits) the best conditions for the recovery of mudflat foraging habitat for migratory wading birds. Salinity objectives are in addition to the realisation of water depths in the lagoons necessary to inundate the aquatic ecological communities that the site is internationally recognised for.

It is widely accepted that salinities in excess of 100 grams per litre in the South Lagoon for prolonged periods have lethal effects⁸ on the Coorong foodweb⁹ and hence the target outlined in Schedule 5(2)(i) of the Basin Plan and section 86AA(2)(a)(i) of the *Water Act 2007*. This is an upper threshold where 50 per cent of the individuals would be dead and should be treated with great caution as persistence is not always the most appropriate measure of ecological health.

Fundamental components of the Coorong foodweb¹⁰ also have an optimum salinity level lower than 60 grams per litre¹¹. The most recent research commissioned by the Department in 2017 indicates that the optimum salinity for *Ruppia spp.* flowering and seedbank formation (as opposed to turion development) is ~35-60 grams per litre.¹² Growth, flowering, seed set, and turion growth in *R. tuberosa* is severely curtailed at extreme salinities. In this respect, the latest science is supporting a significant change in the management of the Coorong that is less concerned about the possibility of 'over-freshening' and more

⁷ Coorong, Lower Lakes and Murray Mouth Scientific Advisory Group (SAG) comprises relevant scientific experts across a broad range of scientific disciplines to advise Government on the environmental/ecological management of the site. Until October 2017, Professor Paton had been a long-standing member of this advisory group.

⁸ The LC50 value for a species or an assemblage is an extremely coarse measurement of a tolerance (as 50% of the individuals would already be dead), so it is not appropriate for use in setting target environmental conditions to maintain and restore the Ramsar-listed ecological character.

⁹ Lethal salinities for Chironomids (non-biting midges) that provide food for fish and some wading birds begin to manifest at salinities greater than 100 grams per litre.

¹⁰ Most macro invertebrates that occur in the Coorong have preferred salinity ranges of up to approximately ~45 grams per litre, most fish have preferred salinities ranges of ~36 to ~50 grams per litre and *Ruppia tuberosa* will re-establish in a salinity range of 32-110 grams per litre.

¹¹ Brookes, J.D., Lamontagne, S., Aldridge, K. T., Bengner, S., Bissett, A., Bucater, L., Cheshire, A.C., Cook, P.L.M., Deegan, B.M., Dittmann, S., Fairweather, P.G., Fernandes, M.B., Ford, P.W., Geddes, M.C., Gillanders, B.M., Grigg, N.J., Haese, R.R., Krull, E., Langley, R.A., Lester, R.E., Loo, M., Munro, A.R., Noell, C.J., Nayar, S., Paton, D.C., Reville, A.T., Rogers, D.J., Rolston, A., Sharma, S.K., Short, D.A., Tanner, J.E., Webster, I.T., Wellman, N.R. and Ye, Q. 2009. *An Ecosystem Assessment Framework to Guide Management of the Coorong*. Final Report of the CLLAMMecology Research Cluster. CSIRO: Water for a Healthy Country National Research Flagship, Canberra

¹² Collier C, van Dijk K, Ertemeijer P, Foster N, Hipsey M, O'Loughlin E, Tidli K and Collier M (2017). Optimising Coorong *Ruppia* habitat. *Strategies to improve habitat conditions for Ruppia tuberosa in the Coorong (South Australia) based on literature review, manipulative experiments and predictive modelling*. University of Adelaide, Department of Environment Water and Natural Resources, University of Western Australia and DAMCO Consulting.

concerned in supporting the salinity and water level requirements of the entire Coorong foodweb to flourish.

Salinity in the Coorong that permits the growth of *Ruppia spp.* may also lead to increased competition through the growth of the filamentous green algae that includes *Enteromorpha spp.* Filamentous algae was predicted to have a negative impact on distribution of *Ruppia spp.* by Rogers and Paton in 2009.

Algae species are common in the Coorong and a natural part of the foodweb. Mats of filamentous green algae have been observed in the Coorong as far back as the 1970's. Whilst the historical frequency of filamentous green algae blooms is unknown, it is assumed they are now more frequent than prior to the Millennium Drought, indicating the Coorong environment is out of balance, most likely as a legacy of impacts caused during the Millennium drought but this remains unconfirmed at this time.

In 2017, the Department undertook a project titled *Optimising Coorong Ruppia Habitat Project* which examined the interaction between filamentous green algae and *R. tuberosa*. This project, which utilised a combination of field observations, experimental work, and hypotheses supported by literature, indicated that filamentous green algae is problematic in the Coorong and had impacted the recovery of *R. tuberosa*. It concluded that there are still significant knowledge gaps relating to filamentous green algae, including why blooms have been occurring annually after the Millennium Drought.

The Government recognises the need to understand the spatial scale of the filamentous green algae problem in the Coorong, the sources of the nutrients causing the algal blooms, as well as the intra-Coorong cycling of nutrients. Opportunities to undertake this work are currently being explored. Only then will we be able to understand whether particular management approaches are impacting algal blooms and be in a position to consider more active management, if warranted:

All of the investigations to date indicate that there remains an ongoing requirement for substantial flows from the Murray-Darling Basin into the Coorong to maintain a healthy ecology. This source of water flow is the only action able to materially alter water levels in the Coorong, the inundation being required to submerge the aquatic plants and mudflats critical to the ecological function of the Coorong.

With respect to the South East Flows Restoration Project, it has been proposed that project flows will increase nutrients, reduce salinity, and increase algal blooms. As part of the due diligence environmental investigations, a water quality risk assessment process and comprehensive water quality monitoring was undertaken by the Department, Environment Protection Authority and The University of Adelaide. The water quality risk assessment¹³ found that the water quality risks to the Coorong ecosystem posed by increased inflows from the South East drainage network are low and manageable. The "Assessment and modelling of the effects of the 2013-2016 Morella Basin Releases on Coorong Water Quality" report by Mosley *et al.*, (2017) concluded:

- the release of water from Morella Basin (via Salt Creek) to the Coorong during winter-spring periods from 2013 to 2016 did not appear to have any negative water quality effects.
- in contrast, for the most comprehensive dataset in 2014, there were indications of significant improvements in water quality for nutrients, chlorophyll, and salinity along the South Lagoon.

¹³ Wilson, H., Maxwell, S., Kilsby, N. and Taylor, B. (2016). *South East Flows Restoration Project: Water quality risk assessment for the Coorong*. DEWNR Technical report 2016/01, Government of South Australia, through Department of Environment, Water and Natural Resources, Adelaide

- the South East Flows Restoration Project, through provision of additional fresh/brackish water flows, has the potential to improve water quality in the Coorong over the medium to long term.
- optimising these flows to deliver the best water quality outcomes should be a priority once the project is commissioned.

Additionally, since the commencement of the SEFRP, the Department for Environment and Water has developed a hybrid channel/watercourse design and established the capacity to store water in 6,500ha of the Tilley Swamp Watercourse. This permits the restoration and enhancement of wetlands in the region, increasing waterbird habitat, filtration of the flows when detained in en-route wetlands while also offering operators the flexibility to optimise the management of release of flows to the Coorong South Lagoon in response to antecedent conditions and subject to the best available science into the future.

The most recent modelling commissioned by the Department in 2017 indicated that all increased south east flow scenarios result in a net export, or flushing, of salinity and nutrients from the Coorong South Lagoon.

Notwithstanding, the South East Flows Restoration Project also includes the operational safeguard to control the timing and quantity of additional water released to the Coorong South Lagoon. If, in the future, it is demonstrated that additional flows are not required to manage salinity for a specific period of time, they can be diverted to sea, or stored in/delivered to en-route wetlands.