Dear Minister Burke

Please find enclosed the South Australian Government response on matters of disagreement under Section 43A of the Water Act 2007 (Cth) (Water Act), on the altered proposed Basin Plan provided to the Murray-Darling Basin Ministerial Council for comment on 6 August 2012.

As noted, this response does not seek to repeat previous South Australian Government submissions on the proposed Basin Plan and should be considered together with the South Australian Government submission of 16 April 2012 and Ministerial Council notice of disagreement of 9 July 2012.

I understand that the response will be appended to the Council's overall submission by the Secretariat and provided to other Council members and released on the Department for Sustainability, Environment, Water, Populations and Communities website.

The development of an effective and robust Basin Plan is critical to securing a healthy working river. The Basin Plan must deliver on the requirements of the Water Act and our moral and international obligations to protect and restore our unique and irreplaceable river, floodplains and wetlands and prevent long term decline in biodiversity. It must adopt an environmentally sustainable level of take that will not compromise key environmental outcomes for environmental assets, ecosystem functions, water quality and biodiversity.

This includes recovering sufficient water and securing delivery of flow regimes that ensure healthy River Murray floodplains and in-channel environments and that protect and restore the Riverland-Chowilla Floodplain and the Coorong, Lower Lakes and Murray Mouth Ramsar sites.

Unfortunately the current version of the proposed Basin Plan is inconsistent with the findings of the best available science. The science demonstrates that the proposed 2750 GL water recovery volume will not deliver these key environmental outcomes or prevent long term decline in biodiversity in South Australia.

The final Basin Plan must include a water recovery volume greater than 2750 GL and provide the mechanism to ensure key constraints limiting delivery of environmental water...
are addressed. This will also require investment from the Commonwealth Government to ensure key constraints, including purchasing flood easements, are addressed as a priority.

Not only must the final Basin Plan adopt a higher water recovery volume based on science but this water recovery volume must be the benchmark to determine equivalent environmental outcomes in any sustainable diversion limit adjustment mechanism. A benchmark model run of 2750 GL does not represent a sound starting point from which to adjust water recovery volumes.

You will note that I have raised a number of issues regarding the proposed SDL adjustment mechanism. It is important that this mechanism does not place the environment at undue risk. In particular strong safety nets for the Coorong, Lower Lakes and Murray Mouth currently in the altered proposed Basin Plan must be retained and strengthened to avoid unintended adverse environmental outcomes.

The modelling being undertaken by the MDBA of a volume of 3200 GL of environmental water recovery with key constraints relaxed is an important step in determining a water recovery volume based on science. Once the modelling results are available they will be analysed by South Australian Government scientists and this analysis will be peer reviewed by the Goyder Institute for Water Research. The result of this analysis will underpin my Government’s final position on the proposed Basin Plan.

In addition any approach to apportionment of the downstream component of any water recovery target must be consistent with our position that any further contribution by South Australia should only be through strategies agreed by the South Australian Government and relevant industry organisations.

As far as practical the South Australian Government response identifies the specific changes required to achieve a better Basin Plan. I recommend that this response is considered in the context of our previous Government submissions. I also recommend that Commonwealth Government officials consult with South Australian officials to clarify our issues and recommendations.

Thank you for the opportunity to provide you with further feedback on key issues and recommended changes. I look forward to working with you to achieve a better Basin Plan.

Yours sincerely

PAUL CAICA
MINISTER FOR WATER AND THE RIVER MURRAY
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007

1. CONSIDERATION OF THE SOUTH AUSTRALIAN GOVERNMENT’S PREVIOUS SUBMISSIONS

This notice of disagreement does not seek to repeat previous South Australian Government submissions on the draft Basin Plan. It is recommended that this notice of disagreement is considered together with the South Australian Government submission of 16 April 2012 and the previous South Australian Government notice of disagreement of 9 July 2012.

2. BASIN PLAN ENVIRONMENTAL WATER RECOVERY THAT MEETS KEY ENVIRONMENTAL OUTCOMES

2.1 The Proposed Water Recovery Target does not achieve Key Environmental Outcomes

2.1.1 Nature of the Disagreement

The Basin Plan must adopt a water recovery target greater than 2750 GL that meets key environmental outcomes and meets the requirements of the Water Act 2007 (the Water Act).

This is necessary, amongst other things, to secure delivery of flow regimes that ensure healthy River Murray floodplains and in-channel environments and that protect and restore the Riverland-Chowilla Floodplain and the Coorong, Lower Lakes and Murray Mouth Ramsar sites.

Scientific analysis demonstrates that the proposed 2750 GL water recovery volume in the draft Basin Plan will not protect and restore the key ecosystems, habitats and species reliant on Basin water resources, conserve declared Ramsar wetlands, or prevent long term decline in biodiversity in South Australia.

The draft Basin Plan does not meet the requirements of the Water Act, and potentially compromises our international obligations to protect our unique and irreplaceable rivers, floodplains and wetlands and prevent long term decline in biodiversity.

2.1.2 Issue and Rationale

In regard to the proposed water recovery target to meet the sustainable diversion limits, the draft Basin Plan is inconsistent with the findings of the best available science. As a result the proposed environmental water recovery volume of 2750 GL fails both to achieve an environmentally sustainable level of take and to meet the requirements of the Water Act.

The Water Act requires that water is used in a way that achieves sustainability in the use of water resources to give effect to certain international agreements, including the Convention on Biological Diversity and the Ramsar Convention. In simple terms, this means that a minimum environmental outcome must be achieved and, provided this outcome can be achieved, the Basin Plan must subsequently develop and implement provisions to optimise social, economic and environmental outcomes.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

The MDBA has inappropriately taken into account social and economic interests and physical and operational constraints in determining the environmentally sustainable level of take (ESLT). This is not consistent with the Water Act and obscures the scientific process required to derive a robust and defensible sustainable diversion limit (SDL).

The MDBA has noted that the proposed 2750 GL water recovery volume represents a ‘starting point’ for an adaptive process that will allow further adjustments to be made in the future. This is not a valid reason for failing to include an appropriate water recovery volume in the Basin Plan that meets key environmental outcomes consistent with the requirements of the Water Act. In addition, the proposed SDL adjustment mechanism will allow water recovery volumes to be reduced if ‘equivalent environmental outcomes’ are achieved. If the Basin Plan adopts an inadequate starting point of 2750 GL as the water recovery volume then this adaptive management process will place the environment at even greater risk.

Further modelling is currently underway by the MDBA which will assist to better define the required volume of environmental water required and any associated actions necessary in the Basin Plan, such as addressing key constraints, to achieve the key environmental outcomes and meet the requirements of the Water Act. This includes modelling of a 3200 GL water recovery volume with key constraints relaxed or removed.

The process of determining the ESLT should be undertaken again, using only the scientific data and modelling to:

- determine which ecosystem functions, and which environmental assets and environmental outcomes in the Murray-Darling system water resources, are key to implementing the obligations of the relevant international agreements; in particular, the prevention of long term decline in biological diversity required by the Convention on Biological Diversity and the protection of wetlands required by the RAMSAR Convention; and

- determine the maximum level of take, above which those assets, outcomes and ecosystem services would be compromised.

Scientific analysis demonstrates that the proposed 2750 GL water recovery volume will not protect and restore the key ecosystems, habitats and species reliant on Basin water resources; conserve declared Ramsar wetlands; or prevent long term decline in biodiversity in South Australia.

The Goyder Institute for Water Research expert panel report finds that the draft Basin Plan is unlikely, in the longer term, to maintain the ecological character of the Riverland-Chowilla floodplain and the Coorong, Lower Lakes and Murray Mouth Ramsar wetlands (Goyder, 2012).

As demonstrated in documents prepared by the MDBA, the proposed 2750 GL water recovery volume does not meet key environmental water requirements for South Australian assets or for floodplain communities and wetlands across the Basin including in the Murray catchment (e.g. Barmah-Millewa Forest, Hattah Lakes, Riverland-Chowilla floodplain), Goulburn and Mid-Murrumbidgee catchments (MDBA, 2012).

The science indicates that better environmental outcomes could be achieved by recovering additional environmental water and/or by addressing the key constraints limiting delivery of mid to high flows to the Lower Murray.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

The MDBA has indicated that the ability to meet many of the environmental water requirements may be limited by physical, policy and operating constraints (system constraints) on environmental water delivery (MDBA, 2011; MDBA, 2012). CSIRO has indicated that while some shortfalls could be attributed to constraints on delivery, other shortfalls appear to be the result of insufficient water (Young et al, 2011).

Constraints are not a valid reason for failing to recover the volume of water that is required to achieve key environmental outcomes across the Basin or for reducing the proposed water recovery volume when all the environmental water requirements are not being met.

There are opportunities to address constraints and improve the achievement of environmental outcomes particularly for floodplain ecosystems. System constraints limiting the delivery of environmental water must be identified and addressed as a matter of the highest priority in order to achieve the requirements of the Water Act.

The issues outlined above have been clearly documented in the South Australian Government submission on the draft Basin Plan (available at http://www.waterforgood.sa.gov.au) and in a range of scientific reports, including reports commissioned by the South Australian Government (available at http://www.waterforgood.sa.gov.au) and reports prepared by the CSIRO and MDBA (available at http://www.mdba.gov.au).

The South Australian Government’s submission on the draft Basin Plan made a number of recommendations (recommendations 3 to 20) on this matter which, if adopted, would resolve significant issues with the draft Basin Plan SDLs. These include that:

- the MDBA must undertake, as a priority, further modelling (including 3200GL, 3500 GL and 4000 GL) where system constraints are relaxed or removed to determine a water recovery volume that meets key environmental outcomes;

- the Basin Plan must be amended to include sustainable diversion limits that reflect an environmental water recovery volume and an ESLT that meets key environmental outcomes. Based on available information and scientific analysis to date, a volume greater than 2750 GL would be needed. The South Australian Government therefore requires the MDBA to adopt an environmental water recovery target greater than 2750 GL that meets key environmental outcomes; and

- as outlined in the Government’s submission, key environmental outcomes for key environmental assets and functions located in South Australia which must be met by any proposed environmental water recovery volume include:
  - exporting salt loads of 2 million tonnes per year over a rolling 3 year average;
  - keeping the Murray Mouth open without the need for dredging in at least 95% of years, with flows through the barrages out to sea every year;
  - maintaining average daily water levels in the Lower Lakes above 0.4 metres Australian Height Datum (AHD) for 95% of the time and above 0.0 metres AHD at any time;
  - maintaining average daily Coorong south lagoon salinity levels below lethal thresholds for key species (less than 100g/L);
  - avoiding adverse salinity impacts on the ecology by maintaining average daily salinity in Lake Alexandrina below 600 mg/L (1000 EC) for 95% of the time and below 900 mg/L (1500 EC) for 100% of the time;
  - maintaining a mosaic of healthy floodplain habitats;
- securing delivery of flow regimes up to 40,000 ML/day to meet in-channel environmental water requirements and support low-lying temporary wetlands and associated fish and bird habitats;
- securing delivery of flow regimes between 40,000 and 80,000 ML/day for floodplains (exceedence of maximum intervals between watering events should be avoided) to support lateral connectivity, higher elevation wetlands, recruitment and maintenance of key vegetation communities, and important bird habitat and bird breeding events; and
- maintaining the current frequency of unregulated flow events.

The South Australian Government’s submission on the draft Basin Plan also made a number of recommendations (recommendations 6 to 9) about addressing constraints.

### 2.1.3 Proposed Resolution

The Basin Plan must be amended to include sustainable diversion limits (SDLs) that reflect an environmental water recovery volume that meets key environmental outcomes and the requirements of the Water Act.

The available information and scientific analysis to date demonstrates that a volume greater than 2750 GL is required. The South Australian Government recommends the MDBA adopt an environmental water recovery volume greater than 2750 GL that meets key environmental outcomes. This new water recovery volume must become the benchmark for identifying equivalent environmental outcomes under any SDL adjustment mechanism.

The MDBA is undertaking further modelling including modelling of a 3200 GL water recovery volume with key constraints removed or relaxed. This modelling must be considered in revising the water recovery volume and the sustainable diversion limits for the final Basin plan through a process that appropriately considers the scientific data and modelling consistent with the requirements of the Water Act.

The Constraints Management Strategy outlined in the current version of the altered draft Basin Plan must be supported by the Commonwealth Government committing to invest in addressing key system constraints, including purchasing flood easements, as an important step to improve environmental water delivery.

### 2.2 Constraints Management

#### 2.2.1 Nature of the Disagreement

The inclusion of a Constraints Management Strategy in the draft Basin Plan is an important addition to the altered draft Basin Plan. The connections between this strategy and other elements of the Basin Plan must be made more explicit.

#### 2.2.2 Issue and Rationale

System constraints limit the effective delivery of environmental water to achieve the objectives of the Environmental Watering Plan. Links between the constraints management strategy and the objectives for water dependent ecosystems in Part 2 of Chapter 7 would assist to inform development of the constraints management strategy. In addition links to reporting in schedule 10 would ensure regular information from Basin States on progress with implementing the strategy.
2.2.3 Proposed Resolution

(i) Amendments to section 6.07

Amend section 6.07 and include any relevant changes to Chapter 7 to include a new section which links the Constraints Management Strategy to the achievement of the objectives and outcomes of the Environmental Watering Plan. Section 6.07 should include a requirement for the Authority to have regard to the objectives for water dependent ecosystems in Part 2 of Chapter 7 in preparing a Constraints Management Strategy.

(ii) Amendments to Schedule 10

Amend Schedule 10 evaluation and reporting requirements to include an additional item requiring the Authority and Basin States to report annually on progress with implementing actions and measures to relax or remove constraints, to improve environmental water delivery and to address downstream impacts and impacts on third parties in the short, medium and long term. This would be consistent with the reporting arrangements under the Constraints Management Strategy.

3. SECURING THE HEALTH OF THE COORONG, LOWER LAKES AND MURRAY MOUTH

3.1 Environmental objectives, salinity targets and application of environmental water

3.1.1 Nature of the Disagreement

The Coorong, Lower Lakes and Murray Mouth (CLLMM) is a unique Ramsar wetland of international importance. Scientific analysis shows that how and when environmental water is delivered to this site will have significant impact on achieving environmental outcomes. This site is not adequately protected, particularly during dry periods, under the proposed 2750 GL water recovery scenario. The delivery of environmental water will need to be managed effectively to meet key flow, salinity and environmental outcomes for this site under any water recovery scenario.

3.1.2 Issue and Rationale

The analysis of the MDBA’s 2750 GL water recovery scenario and the sensitivity analyses of 2400 GL and 3200 GL scenarios highlight that the Coorong, Lower Lakes and Murray Mouth remains at risk of acidification, low water levels and high salinity levels that threaten the survival of key plants and animals during dry periods (Heneker and Higham, 2012; Higham, 2012). This risk is reduced when additional environmental water is recovered and delivered to the site as demonstrated by assessment of the MDBA’s 3200 GL sensitivity analysis.

The timing of flows being delivered to the Coorong further alters the effects of the proposed recovery volume on environmental outcomes (Webster et al, 2009, Lester et al 2011) with minor changes in the delivery timing and average volume also affecting peak salinities (Higham, 2012). The Basin Plan must provide for the delivery of flows to the Coorong at the volumes and timing necessary to deliver environmental outcomes for this site, including through setting water level and salinity management objectives and targets.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

To maintain water levels in the Lower Lakes, prevent salinity levels from exceeding thresholds lethal to plants and animals and deliver environmental water to the Coorong to avoid environmental damage, the Basin Plan must provide for:

- a secure minimum reserve or annual allocation for the site, and
- delivery of water to this site to be prioritised during dry periods.

Salinity and water level targets measured in Lake Alexandrina will help manage flows, salinity and water quality in Lakes Alexandrina and Albert, in the Coorong and along the River below Lock 1, and reduce the threat of ecological collapse and adverse community and economic impacts. The disconnection of wetlands caused by low river inflows, low lake levels, exposure of acid sulphate soils, and increasing salinity have severely affected the ecology of this area.

To maintain the health of the site, Lake Alexandrina water levels should be managed to be above 0.4 metres AHD on average. Below this level adverse ecological and water quality impacts occur. This water level allows for water releases from the barrages into the Coorong. At lower heights water cannot be released through the barrages placing the Coorong and Murray Mouth at increased risk.

As an absolute minimum, water levels must be maintained above 0.0 metres Australian Height Datum (AHD) to prevent extremely high levels of salinity and broad scale acidification of the Lower Lakes and the river below Lock 1.

Salinity levels should be maintained below 1000 EC for 95% of the time and below 1500 EC for 100% of the time to avoid exceeding the health limits of plants and animals in the Lower Lakes and Coorong.

Both water level and salinity targets are necessary to support management of flows to:

- manage salinity, potential acidification and allow access to good quality water supplies;
- allow flows through the barrages;
- allow the release of sufficient flows to the Coorong (below this level releases are severely restricted), to enable fish to migrate between the lakes and Coorong, support critical vegetation e.g. Ruppia species, and reduce salt build up;
- prevent levee cracking and failure, riverbank collapse and cracking and subsidence of irrigated river flats below Lock 1; and
- maintain water quality to a standard suitable for both human use and irrigation.

Analysis of modelling undertaken for the draft Basin Plan by Heneker and Higham (2012) shows that the proposed targets are achievable taking into consideration additional environmental water recovery, likely management actions and how and when water is delivered to the site. The proposed targets are consistent with the environmental watering requirements identified for this site (Lester, Fairweather, Heneker, Higham and Muller 2011; Lester et al 2011) and a variable lake operating strategy.

Other issues relating to safety nets for this site are discussed under section 6.2 of this document.
3.1.3 Proposed Resolution

The Basin Plan through the Environmental Watering Plan (and other relevant sections) must:

- provide for a minimum reserve or allocation of environmental water for the Coorong, Lower Lakes and Murray Mouth to be delivered annually including during dry periods;
- provide for the delivery of flows to the Coorong at the volumes and times necessary to secure the health of this site; and
- prioritise delivery of environmental water to the Coorong in times of drought to sustain key vegetation communities, species and ecosystem functions.

The Basin Plan’s Environmental Watering Plan should include a requirement to provide for the use of Commonwealth held water and other relevant environmental water to achieve key flow and salinity outcomes in the Lower Lakes.

Specific changes are recommended as follows:

(i) Add an additional salinity target for managing water flows in Chapter 8

Insert the following text at section 8.14 - Targets for managing water flows, as a new subsection 5 (d):

‘to maintain salinity in the Lake Alexandrina below 1500 EC for 100% of the time measured as average salinity levels across at least five monitoring locations in Lake Alexandrina’

(ii) Amend the Lower Lakes environmental objective

Amend section 7.06 (3) (e) of the draft Basin Plan so it includes text to the effect that:

‘as far as practicable, average daily water levels in the Lower Lakes are maintained above 0.4 metres Australian Height Datum for 95% of the time and above 0.0 metres Australian Height Datum at all other times’ (measured in Lake Alexandrina).

(iii) Amend the Environmental Watering Plan to include a clear safety net requirement to prioritise application of environmental water to protect end of system outcomes.

Include a principle in Division 6 requiring application of environmental water to be prioritised to the Coorong, Lower Lakes and Murray Mouth to protect key environmental outcomes for this site including, but not limited, to:

- achieve the objectives listed in section 7.06 (3) (c) and (d) and amended 7.06 (3) (e) [as proposed above];
- achieve or better the ‘safety net’ outcomes for the flow, salinity and environmental indicators as referred to in 1.07 of Schedule 5 [with amendments proposed under section 6.2 of this document] or achieve or better the targets related to these indicators where the modelled Basin Plan (‘safety net’) outcomes do not achieve the targets, and
- not exceed the 1000 EC salinity target and the additional 1500 EC salinity target [as proposed above] in Lake Alexandrina.
Based on previous scientific work undertaken by the South Australian Government, and previously provided to the MDBA, it is anticipated that the inclusion of provisions such as these will assist to support the Coorong and Lower Lakes as a healthy and resilient wetland of international importance. These provisions would reduce the risk of not achieving minimum environmental outcomes for this site and would complement environmental water delivery consistent with the State long term watering plan, and State and Basin wide annual watering priorities.

The drafting will need to take into account any changes associated with adoption of a higher water recovery volume in the Basin Plan as per the recommendation in section 2 of this document.

4 DRAFT BASIN PLAN MANAGEMENT OBJECTIVES AND OUTCOMES

4.1.1 Nature of the Disagreement

The management objectives and outcomes, as articulated in Chapter 5 of the draft Basin Plan, fail to correctly reflect the purposes and objects of the Water Act 2007 (Cth) (Water Act).

4.1.2 Issue and Rationale

The Water Act requires that water is used in a way that achieves sustainability in the use of water resources to give effect to certain international agreements, including the Convention on Biological Diversity and the Ramsar Convention.

In simple terms, this means that a minimum environmental outcome must be achieved and provided this outcome can be achieved, consideration can then be given in the Basin Plan to optimising social, economic and environmental outcomes. The environmentally sustainable level of take must be the level of take which does not compromise key environmental outcomes. In outlining its overall objectives (section 5.02) and in defining objectives for long term sustainable diversion limits (section 5.05), the draft Basin Plan invalidly places social and economic outcomes on the same level as environmental outcomes and implementing relevant international agreements.

The objectives and outcomes of the altered draft Basin Plan should be amended to correctly reflect this hierarchy of outcomes and the objects of the Water Act.

Chapter 5 should also state in broad terms the management objectives and outcomes in relation to management of the risks to the condition or continued availability of Basin water resources identified in Chapter 4. Currently this clear link is missing.

4.1.3 Proposed Resolution

(i) Amend Chapter 5

The objectives and outcomes to be achieved by the Basin Plan must be amended to:

- correctly reflect the Water Act requirements to give priority consideration to key environmental concerns before optimising social, economic and environmental outcomes; and

- include objectives and outcomes which address the risks to Basin water resources identified in Chapter 4.
5 RISK MANAGEMENT STRATEGIES

5.1.1 Nature of the Disagreement

The Basin Plan must be amended to include more comprehensive identification of risks that are clearly linked to specific risk management strategies. There is no clear ‘line of sight’ between the identified risks to water resources and environmental outcomes, which are only expressed in broad terms, and the risk management strategies.

In addition, key risk management strategies are not included or not adequately articulated in Chapter 4.

5.1.2 Issue and Rationale

The Water Act requires the Basin Plan to identify the risks to the condition or continued availability of Basin water resources and develop strategies to manage or address these risks. The risks outlined in the altered draft Basin Plan are not comprehensive and are expressed in such broad terms that they fail to reflect the previous work undertaken by the MDBA on key risks to water resources. The risks must be properly identified so that strategies to manage them can be developed and the objects of the Water Act met. These issues have also been covered in detail in previous South Australian Government submissions.

The Basin Plan must be amended to include more comprehensive identification of risks and associated management strategies to deal with risks to the availability of Basin water resources.

In addition the reference in section 4.02 (2) to the consequences of the materialisation of the risks in subsection 4.02 (1) fail to identify consequences to the environment.

It is essential to continue to improve the broader management of natural resources of the Murray-Darling Basin to restore the condition of water dependent ecosystems and to maximise the ability to protect and restore dependent ecosystems through environmental watering. This was acknowledged by the MDBA in its Proposed Basin Plan Consultation Report released on 28 May 2012. To give effect to this proposal it is recommended that a relevant risk management strategy be included in Chapter 4.

Enabling recovery of drought affected key environmental assets and functions is a critical step towards successful implementation of the Basin Plan. The South Australian Government has recommended the Basin Plan and MDBA support a remediation program and priority watering of key drought affected sites. It is proposed this be supported with a relevant risk management strategy in Chapter 4.

Consistent with the MDBA’s position that there is opportunity for improved knowledge of climate change to be incorporated during future reviews of the Basin Plan this must be clarified in the risk management strategies under Chapter 4. The requirement to improve knowledge of connectivity between groundwater and surface water must also be made clearer.
5.1.3 Proposed Resolution

(i) Amendments to Chapter 4

Section 4.02 of the Basin Plan must include comprehensive identification of risks that are clearly linked to the objects and requirements of the Act and to specific risk management strategies.

(ii) Amendments to subsection 4.02 (2)

Subsection 4.02 (2) must be amended to include reference to the environmental consequences of the materialisation of the risks in section 4.02. For example the inclusion of words to the effect that ‘...insufficient water is available, or water is not suitable to protect and restore key environmental assets, key ecosystem functions, the productive base and/or key environmental outcomes’.

(iii) Amendments to section 4.03 strategies to manage, or address, identified risks

Section 4.03 must be amended to specify risk management strategies in more explicit terms with a clear line of sight to a comprehensive identification of risks.

Amend sub-section 4.03 (3) to include the following additional risk management strategies:

- to ensure, as far as practicable, that the water resource planning and management of environmental water is integrated with broader natural resource management activities; and
- to support measures to assist recovery of drought affected key environmental assets and functions.

Amend subsection 4.03 (h) (iii) to state: ‘climate change and to incorporate this improved knowledge into future reviews of the Basin Plan’.

Amend subsection 4.03 (i) (i) to state: ‘groundwater and surface water resources and the connections between groundwater and surface water resources, including through improved measurement’.

6 SUSTAINABLE DIVERSION LIMITS

6.1 Downstream Apportionment

6.1.1 Nature of the Disagreement

The issue of downstream apportionment has yet to be agreed by the Murray-Darling Basin Ministerial Council.

6.1.2 Issue and Rationale

The South Australian Government considers that any State level apportionment must be based on surface water diversions excluding urban water use or critical human water needs. Any approach to apportionment must be consistent with the South Australian Government’s position that any further contribution by South Australia to water recovery should only be through strategies agreed by the South Australian Government and relevant industry organisations.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

The Water Act recognises that critical human water needs are the highest priority water use for communities who are dependent on Basin water resources. The South Australian Government has made significant investment in desalination, and stormwater and wastewater recycling as well as efficiency measures to address our current and future urban needs but it cannot reduce the State’s base level urban water requirements from the River Murray.

Without removal of these critical human water needs in calculating State level apportionment, water recovery will have an unreasonable and disproportionately high impact on South Australian irrigators and regional communities.

In the event that it is not practical or possible to exclude critical human water needs, then other means to alleviate the disproportionate burden on South Australian irrigators, as a result of the large portion of our diversions that are for critical human water needs, must be found.

South Australia is doing its share to recover water for the environment including offering water for purchase from SA Water’s non-critical water holdings and providing a six GL entitlement to the environment in return for investment in the Adelaide Desalination Plant.

6.1.3 Proposed Resolution

(i) Apportionment excluding urban water use or critical human water needs

Any downstream reduction apportionment to determine State targets must be based on surface water diversions excluding urban water use or critical human water needs.

6.2 SDL Adjustment Mechanism

6.2.1 Nature of the Disagreement

The benchmark for any SDL adjustment must be a water recovery volume that meets key environmental outcomes as required under the Water Act and the draft Basin Plan objectives. This benchmark must be the environmental outcomes resulting from a higher volume of water recovery with the removal or relaxation of key constraints.

Any SDL adjustment mechanism must operate to allow for SDLs to be reduced (i.e. increase water recovery) as well as for SDLs to be increased (i.e. reduce water recovery). Currently the draft provisions are far too restrictive in regard to measures that could increase water recovery with neutral socio-economic effect. In addition the definitions of supply measure versus efficiency measure do not appear to adequately define the difference in these two types of measures consistent with the underlying policy intent of the mechanism.

The mechanism must be legally valid, objective and scientifically robust. The benchmark model run used must be updated, at the appropriate time at the beginning of the SDL adjustment process, to address technical issues and to develop a modelling basis that is fit for the purpose of an SDL adjustment mechanism.
6.2.2 Issue and Rationale

It will be essential that any SDL adjustment mechanism operates on a transparent and legally sound basis using the best available science and a method developed in consultation with jurisdictions. The provisions for independent audit must more clearly identify any actions arising as a result of the audit.

Benchmark Environmental Outcomes

The starting point for any SDL adjustment must be a water recovery volume that meets key environmental outcomes as required under the Water Act and the draft Basin Plan objectives. The benchmark environmental outcomes referred to in subclause 1.04 (3) of Schedule 5 and relating to a benchmark model run of 2750 GL do not represent a sound starting point from which to adjust water recovery amounts.

The final Basin Plan must adopt a larger water recovery volume. The benchmark modelling and associated environmental outcomes will need to be amended to reflect the environmental outcomes achievable from a higher water recovery volume with key constraints removed or relaxed.

The benchmark environmental outcomes must include removal of key system constraints, or a process must be adopted to allow key constraints to be addressed to enhance environmental outcomes, before considering any increase in SDLs (i.e. water recovery being reduced). This is necessary to ensure key environmental outcomes are achievable under the Basin Plan. Addressing key constraints should improve environmental outcomes with the recovery of the same or additional water. There must be a complementary process for addressing constraints that includes Commonwealth Government investment in addressing key constraints impeding environmental water delivery.

Benchmark Modelling

MDBA modelling to date was undertaken for the purpose of Basin Plan decision making, not for supporting a SDL adjustment mechanism. A number of technical issues have been identified by the MDBA with using this model run to support SDL adjustment. There is a risk that SDL adjustment could occur as a result of lack of model accuracy putting the environment, and the Commonwealth Government’s investment in bridging the gap at risk. A new refined benchmark model run that is fit for the purpose of making SDL adjustment must be developed.

Initial Conditions of Development

The underlying basis for an SDL adjustment mechanism is that it allow for additional projects to those considered in the MDBA’s decision making for the Basin Plan to be proposed. Revision is required to the current drafting to ensure it unambiguously reflects that the mechanism applies exclusively to works and measures that are separate and additional to those works and measures in operation at the time the Basin Plan commenced or anticipated to be in operation by 2019, i.e. works and measures considered or anticipated in the decision making on the final Basin Plan SDLs. Works and measures already in place or anticipated for the purposes of the MDBA’s decision making include those works and measures incorporated into the hydrologic modelling used to inform the MDBA’s environmentally sustainable level of water recovery report (MDBA, 2011; MDBA, 2012).
Safety Nets

The proposed safety nets outlined in section 1.07 of Schedule 5 must be retained and strengthened to manage risk and ensure that the environmental outcomes the Basin Plan seeks to achieve are not compromised. The specific safety net for the Coorong, Lower Lakes and Murray Mouth (CLLMM) is essential and must be strengthened given the River has only one estuarine system and the uniqueness of the site. Failing to achieve key environmental outcomes for this site would be inconsistent with the requirements of the Water Act.

The environmental water requirements for the CLLMM developed by South Australia and backed by an international peer review and published scientific investigations are directly related to maintaining key biota, communities and the described ecological character at the site.

The environmental indicators used by the MDBA, and included in Schedule 5, are less conservative than those developed by South Australia which are supported by international peer review. The MDBA indicators must be strengthened to address the identified gaps and risks. Additional indicators are proposed that will provide greater confidence that salinity impacts can be managed, the Murray Mouth maintained in an open state and the Coorong’s ecology supported at an acceptable level of risk.

To ensure real time achievement of the modelled outcomes for the environmental indicators, complementary management provisions, including prioritising delivery of water to this site, objectives and targets are required in the Basin Plan as outlined in section 3 of this document.

Definition of Supply Measures versus Efficiency Measures

The draft Basin Plan provisions should more clearly define supply measures which operate to increase SDLs (reduce water recovery) vis a vis efficiency measures which operate to reduce SDLs (increase water recovery). A supply measure should operate to enable the given environmental outcomes to be achieved with less water through environmental works and measures or changes to rules and procedures. It is unclear how reducing the quantity of water required to deliver water for the purpose of consumptive use, as per section 6.09 (b) (ii), achieves this outcome. Rather this appears to be an efficiency measure where less water is required to achieve the same level of consumptive use and hence should be used to increase water recovery.

Measures that can increase water recovery

The proposed mechanism does not allow for water recovery through trade or transfer of water entitlements where this does have a neutral socio-economic impact. An assumption has been incorrectly made that all water purchase has an adverse socio-economic impact and this has led to an overly restrictive and narrow definition of measures that may increase water recovery (reduce SDLs). The mechanism must enable water purchase projects to be considered where these have a overall neutral socio-economic impact and/or have a socio-economic benefit.

Definition of Terms

Terms such as frequency, flow event and dry spells are not defined but are used in the context of the SDL adjustment mechanism in certain ways. The MDBA should define these terms.
6.2.3 Proposed Resolution

(i) **Adopting a higher benchmark for environmental outcomes**

The benchmark environmental outcomes for SDL adjustment must reflect the outcomes as a result of a higher water recovery volume and relaxing or removing key constraints. This is consistent with the requirement for the Basin Plan to adopt a higher water recovery volume that achieves key environmental outcomes outlined in section 2.1 of this document.

(ii) **Benchmark Model Run in Schedule 5**

Amend Schedule 5, subsection 1.02 (1) to include provisions to the effect that a new benchmark model run will be developed to address identified technical issues to ensure it is fit for the purpose of the SDL adjustment mechanism and to reflect the water recovery volume and decision making for the final Basin Plan. The new benchmark would provide additional sensitivity to allow for incremental improvements in existing or anticipated works and measures to be considered.

To ensure these changes are clear and bounded, the modelling issues that will be addressed need to be clearly identified either in the Basin Plan or via reference in the Basin Plan to a relevant technical paper prepared by the MDBA based on the paper on key modelling issues circulated to the SDL adjustment modelling workshop on 18 July 2012. The paper must address issues to allow for assessment of incremental improvements in Living Murray works and measures only, noting that the Living Murray works and measures have already been incorporated in the MDBA’s Basin Plan modelling.

(iii) **Strengthen the safety nets in Schedule 5**

Include the following additional flow and salinity indicators for which outcomes achieved in the benchmark run must be maintained:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of years 3 yr rolling average barrage flow greater than 2,000 GL/y with a minimum of 650 GL in any year</td>
<td>&gt; 95%</td>
</tr>
<tr>
<td>Barrage flows exceed 0 GL/y</td>
<td>100%</td>
</tr>
<tr>
<td>No exceedence of average salinity of 100g/L in the Coorong South Lagoon in any two consecutive years</td>
<td>100 %</td>
</tr>
</tbody>
</table>

To ensure these outcomes are achieved in reality rather than just as modelled outcomes, Basin Plan environmental watering plan must include provisions to prioritise delivery of environmental water to the CLLMM to meet the environmental water requirements for this site.

The provisions must ensure the modelled safety net outcomes or targets where modelled outcomes do not achieve the targets and relevant environmental objectives, salinity targets and water level objectives (including the additional salinity target and
revised environmental water level objective proposed in section 3.1 of this document) are achieved as a minimum.

Based on previous scientific work undertaken by the South Australian Government, and previously provided to the MDBA, it is anticipated that the inclusion of provisions such as these will assist to support the Coorong and Lower Lakes as a healthy and resilient wetland of international importance.

The drafting will need to take into account any changes associated with adoption of a higher water recovery volume in the Basin Plan as per the recommendation in section 2 of this document.

(iv) **Initial Conditions of Development in Chapter 6 and Schedule 5**

Amend section 6.08 to include a definition of initial conditions of development that is consistent with the relevant notes on pages 30 and 31. This definition will inform which works and measures are eligible for consideration through the SDL adjustment mechanism.

Amend Schedule 5, subsection 1.02 (2) so that it is clear this defines the sub-set of initial conditions of development that were incorporated in or assumed for the purposes of the Basin Plan model run and hence need to be incorporated into the SDL adjustment benchmark model run. The current inclusion in the benchmark modelling run of ‘economic activity’ is questioned as this does not appear to be a valid consideration for determining an environmentally sustainable level of take.

Consequential changes may also be necessary to sections 1.01 and 1.02 (4) among others.

(v) **Amendment to Chapter 6 and Schedule 5 to enable consideration of measures to transfer or trade in water entitlements**

Amend Chapter 6 and make consequential amendments to schedule 5 to enable the transfer or trade in water entitlements to be an eligible measure for reducing SDLs where this has a net neutral socio-economic impact.

(vi) **Review and amend the meaning of supply measures and efficiency measure**

Review the drafting of sections 6.09 and 6.10 to ensure this accurately reflects the policy intent. Remove the reference to reducing delivery volumes for the purposes of consumptive use from the definition of supply measure.

(vii) **Audit of the Adjustment Mechanism, Chapter 6**

Amend section 6.20 to include provisions to the effect that:

- the report, along with comments from the Authority, Commonwealth and Basin States, be published (on the Authority's website); and
- the Authority take into account the findings in the audit and make any necessary corrections.
6.3 Bridging the Gap

6.3.1 Nature of the Disagreement

The gap between baseline diversion limits and SDLs must be bridged by the Commonwealth Government through a combination of water purchase from willing sellers and water savings from investment in infrastructure and other projects. This includes bridging the gap to meet SDLs associated with a higher water recovery volume than 2750 GL that must be included in the final Basin Plan.

Issue and rationale

The South Australian Government’s position is that there should be no forced reductions, because the gap between the BDLs and SDLs will be bridged by the Commonwealth Government through a combination of water purchase from willing sellers, water savings from investment in infrastructure and other projects. In South Australia, this must be done in consultation with, and with the agreement of, the South Australian Government and relevant industry organisations.

With the Commonwealth bridging the gap between baseline diversion limits and sustainable diversion limits by water purchases and water savings, the Basin Plan will not require compulsory acquisition of water entitlements or the States to reduce allocations in order to achieve SDLs. In order for the Commonwealth Government to achieve this outcome it is critical that no trade restrictions are introduced that would hinder its ability to bridge the gap.

Proposed resolution

The gap between baseline diversion limits and SDLs must be bridged by the Commonwealth Government through a combination of water purchase from willing sellers and water savings from investment in infrastructure and other projects. This includes bridging the gap to meet SDLs associated with a higher water recovery volume than 2750 GL that must be included in the final Basin Plan.

6.4 Water Trading Rules

6.4.1 Nature of the Disagreement

The altered draft Basin Plan proposes that all trade rules will commence on 1 July 2014 which extends the period where it is possible for inappropriate barriers to trade to still be put in place. There should be no further delays in commencement of the trade rules and ideally the surface water trade rules should commence from 1 July 2013.

6.4.2 Issue and Rationale

The 28 November 2011 version of the draft Basin Plan proposed that water trade rules with exceptions for some surface water trade rules would commence from 1 July 2013. This has been amended so that all trade rules would commence from 1 July 2014. The 2014 date extends the period where it is possible for inappropriate barriers to trade to still be put in place.

While it is recognised that States will require a transition period, this could be achieved by allowing the trade rules to commence on 1 July 2013 thus preventing any new trade
restrictions but for the MDBA to exercise discretion in implementing compliance and enforcement regarding any existing trade rules that may require transition until 1 July 2014.

In addition, for the Commonwealth Government to achieve its bridging the gap commitment it is critical that Basin States are not able to introduce trade restrictions which would hinder the Commonwealth’s ability to bridge the gap.

6.4.3 Proposed Resolution

Sections which deal with preventing inappropriate trade restrictions must commence on 1 July 2013 particularly to prevent new and inappropriate restrictions being introduced. The MDBA is to exercise discretion in implementing compliance and enforcement regarding any existing trade rules that may require transition until 1 July 2014.

Complementary measures through an intergovernmental agreement will also be required to ensure Basin States do not introduce new trade restrictions or use existing trade rules to hinder the Commonwealth’s ability to bridge the gap.

6.5 Groundwater Sustainable Diversion Limits

6.5.1 Nature of the Disagreement

The Basin Plan must specify a precautionary approach to managing groundwater that requires an assumption of connection to surface water unless proven otherwise.

The MDBA and the Basin Plan must not allow for increased groundwater SDLs unless it can be demonstrated that, based on scientific evidence and analysis, increased diversions will not have an impact on surface water resources or environmental watering.

6.5.2 Issue and Rationale

The MDBA and the Basin Plan must not allow for increased groundwater SDLs unless it can be demonstrated that, based on scientific evidence and analysis, increased diversions will not have an impact on surface water resources or environmental watering.

A precautionary risk management approach must be taken to manage groundwater extraction to avoid impacts on surface water flows and key environments. Consistent with the National Water Initiative (NWI), the National Water Commission advises that:

‘To mitigate the risks to the water resource, the Commission considers that unless and until it can be demonstrated otherwise, surface water and groundwater resources should be assumed to be connected, and water planning and management of the resources should be conjunctive.’ (National Water Commission, 2009, pg 36).

It is noted that the MDBA has indicated that the potential impact of groundwater extraction on surface water resources has been explicitly considered in determining the groundwater SDLs, including the risk associated with lack of knowledge, and that it considers the SDLs in the proposed Basin Plan reflect a precautionary approach. A precautionary approach should also be applied in future reviews of the Basin Plan.

Consistent with this principle, the MDBA must include the precautionary principle in the Basin Plan along with provisions to require appropriate scientific analysis and risk assessment to be
undertaken to demonstrate that the extraction of groundwater will not adversely impact on surface water flows, environmental watering or associated ecosystems before allowing for increased groundwater SDLs.

### 6.5.3 Proposed Resolution

#### (i) Amendments to Chapter 6

Amend section 6.06 to include provisions to the effect that in reviewing groundwater SDLs:

- long-term average sustainable diversion limits for groundwater must embrace the precautionary principle that assumes connection between surface and groundwater unless demonstrated otherwise by science; and
- groundwater SDLs cannot be increased unless it can be demonstrated that the increase will not impact on surface water resources or environmental watering.

#### (ii) Amendments to Chapter 9

Amend Chapter 9, Division 3 to include a new section to the effect that a precautionary approach must be taken to manage groundwater in water resource plans along the following lines:

‘A water resource plan must be prepared consistent with a precautionary approach such that unless and until it can be demonstrated otherwise, surface water and groundwater resources should be assumed to be connected.’

### 6.6 Baseline Diversion Limits for the Eastern Mount Lofty Ranges and Marne Saunders SDL Resource Units

#### 6.6.1 Nature of the Disagreement

The MDBA is requested to include a revised note regarding the baseline diversion limit (BDL) for the Eastern Mount Lofty Ranges.

#### 6.6.2 Issue and Rationale

This change is proposed to avoid any confusion understanding the BDL in relation to the split between take from watercourses (diversions) and interception activities.

#### 6.6.3 Proposed Resolution

#### (i) Amendments to Schedule 3

Amend Schedule 3, item 27, Eastern Mount Lofty Ranges (SS13) to include a note to the effect that the Authority estimates the BDL to be 28.3 GL comprised of 15.3 GL per year of watercourse diversions and 13 GL per year from runoff dams and commercial forestry.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

7 WATER QUALITY AND SALINITY MANAGEMENT

Some specific changes to guide management of salinity and water quality in relation to the Coorong, Lower Lakes and Murray Mouth are recommended under section 3 above consistent with previous South Australian Government submissions. Additional issues and changes are outlined below.

In considering whether to adopt the Basin Plan, the Commonwealth Government should ensure that the Water Quality and Salinity Management Plan and the associated water resource plan requirements in the draft Basin Plan are not further weakened to the point that there is little obligation placed on Basin governments to take action.

7.1 Salt Export

7.1.1 Nature of the Disagreement

The Basin Plan must include provisions to ensure end of system flows that export a minimum of 2 million tonnes of salt each year measured as an average over three years. The Murray-Darling Basin Ministerial Council’s proposal to ensure the Basin Plan includes a salt export objective to be achieved by the export of 2 million tonnes of salt each year averaged over the preceding 3 years is supported.

7.1.2 Issue and Rationale

Export of a minimum of 2 million tonnes of salt per year through the Murray Mouth is needed to prevent poor water quality and adverse impacts for human water supply, irrigation and the environment along the River Murray, as well as for the Lower Lakes and Coorong.

The MDBA in its hydrologic modelling report indicates that salt export is estimated to be approximately 1.96 and 2.00 million tonnes per year under modelling of water recovery scenarios of 2800 GL and 3200 GL respectively (MDBA, 2012). It notes that these salt load export estimates do not include the projected increase in salt mobilisation in future. In addition to ensuring adequate water recovery for the environment, the Basin Plan must also ensure measurement and monitoring of salt export.

Including a salt export objective in the Basin Plan is an important provision. The South Australian Government has been concerned that significant peaks in salinity can be experienced over a 10 year time frame (which was proposed as the measurement period in the altered draft Basin Plan) that could damage the ecological character of the site. Measurement of the target over a three year rolling average is necessary to address this risk. This is supported by modelling analysis (Heneker, 2010) which shows:

- the impact of a single large inflow event to the Lower Lakes and the resulting ability to export salt is generally exhausted within any 2-3 year period, due to evaporation in the Lower Lakes; and

- a 10 year rolling average target can be met while still experiencing significant peaks in salinity in the lakes that could damage the ecological character of the site.

Scientific analysis including modelling undertaken by the South Australian Government (Heneker, 2010) shows that adequate exporting of salt requires sufficient discharge via the barrages as part of a rolling average minimum is required. Complementary work (Lester et al., 2011) demonstrated that this results in additional benefits including maintaining
connectivity (hydrological and populations of biota), avoiding the exposure of sulfidic sediments, ecological damage and the need for dredging and costly remedial works.

It is noted that the consequential amendment proposed by the Murray-Darling Basin Ministerial Council so that State Water Quality Management Plans are not required to specify measures to be undertaken to contribute to the salt export objective addresses an unintended consequence of previous amendments. The unintended consequence arose as a result of redrafting the salt load target to a salt load objective. The salt load target was never intended to require measures to be specified in State Water Quality Management Plans.

7.1.3 Proposed Resolution

(i) Amend section 8.09 – Salt-load objective

Amend the section 8.09 to refer to a salt export objective as per the Murray-Darling Basin Ministerial Council consensus notice and so that the Authority must assess, on an annual basis, achievement of the salt export objective by comparing the estimated number of tonnes of salt exported per year averaged over the preceding 3 years with the modelled estimate of 2 million tonnes of salt per year.

7.2 Replace the Lock 6 Salinity Target with a Target at the South Australian Border.

7.2.1 Nature of the Disagreement

A salinity target to manage flows should be located at the South Australian border rather than Lock 6.

7.2.2 Issue and Rationale

Flow management actions upstream of the South Australian border can significantly affect water quality and salinity levels in South Australia. The South Australian Government recommends that a target be set at or just upstream of its border to provide a basis for assessment of water quality entering the State and to guide upstream management actions. The MDBA proposes a site at Lock 6 located below the South Australian border. South Australia has provided information to the MDBA on the border target site at monitoring station A4261022 and detailed rationale for using this border location, including:

- the site at the South Australian border is fully telemetered and the equipment operates well with monitoring data readily available;
- water at this location is fully mixed including main channel flows from above Lock 7, Lake Victoria/Rufus River inflows and Lindsay River inflows; and
- it provides more precise insight into the quality of water entering South Australia.

There is sufficient modelling information to support this site being included in the Basin Plan. While previous South Australian Government submissions indicated the target value should be 517 EC it is understood that the MDBA’s modelling indicates the target value should be around 580 EC.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

7.2.2 Proposed Resolution

(i) Amend section 8.14 to include a reporting site at the border

Amend subsection 8.14(5)(c) Item 3 to refer to a reporting site at South Australian Border (A4261022) with a target value of 580 EC as follows:

<table>
<thead>
<tr>
<th></th>
<th>River Murray at South Australian Border (A4261022)</th>
<th>580 EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.3 Raw Water Targets for Drinking Water to be Reinstated

7.3.1 Nature of the Disagreement

The water quality targets for raw water for human consumption should be reinstated to support source water protection measures as part of an integrated approach to managing the safety and reliability of public water supplies under the Basin Plan.

7.3.2 Issue and Rationale

The altered draft Basin Plan includes objectives to manage raw water for treatment for human consumption. However unlike all other water quality objectives these objectives no longer have corresponding targets to clarify desired outcomes and inform water resource planning. It is very concerning that the targets for the raw water objectives which were in the first draft Basin Plan of 28 November 2011 have been removed.

The removal of the targets provides reduced clarity for planning with no clear link between the raw water objectives and more detailed targets to be considered in developing management measures for water resource planning. In relation to water resource plans, there is now no explicit requirement for a water quality management plan to identify or manage against water quality targets for raw water. Reference to the Australian Drinking Water Guidelines (ADWG) is only provided as a note.

An integrated approach to source water protection by the Basin States and the Murray-Darling Basin Authority through clear guidance for water resource planning should be clearly articulated in the Basin Plan. Source water management is required to ensure that adverse pollution loads do not place undue reliance on the downstream interventions, such as filtration and disinfection. None of the treatment systems and options available are absolutely effective and all processes are subject to failures at times. Removal of a clear focus on source water protection implies an increased risk to public health and the water utilities.

Although the States have adopted the ADWG, this should not be taken as a reason for abandoning source water quality protection guidance in the Basin Plan. Doing so is clearly against the guiding principles of the ADWG.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

7.3.3 Proposed Resolution

(i) **Reinstate raw water quality targets**

Raw water targets must be re-instated as per the November 2011 version of the draft Basin Plan as follows:

**Division 3—Water quality targets for raw water for human consumption**

8.13 **Water quality targets for raw water for treatment for human consumption**

(1) The water quality targets for raw water for treatment for human consumption are that the values for each water quality characteristic meet the target values set out in this section.

(2) The target values in this section apply to surface water and groundwater at sites in the Murray Darling Basin where water is extracted by a water supply authority for treatment and supply for human consumption.

Note: Water resource plans are required to identify these sites (see section 9.38).

(3) The target value for total dissolved solids (salinity) is 500 mg/L.

Note: This target value achieves a palatability rating of ‘good’ as provided for in the ADWG.

(4) The target values for cyanobacteria cell counts or biovolume are the values that will ensure that there is a low risk that water, once treated by a water supply authority, will not meet the standards for treated water set out in the ADWG relating to:

(a) odour compounds (geosmin and 2 methylisoborneol); and

(b) toxins (total microcystins, cylindrospermopsin, saxitoxins).

Note: Measures expected to be included in water resource plans to manage high cyanobacteria cell counts or biovolume (Part 7 of Chapter 9) will be relevant to the characteristics at paragraphs (4)(a) and (b). Research Report 74 titled ‘Management Strategies for Cyanobacteria (Blue-Green Algae): A Guide for Water Utilities’ and published by Water Quality Research Australia Limited in 2010 may be useful for deriving applicable targets.

7.4 Drafting Errors in Relation to Targets for Managing Water Flows

7.4.1 Nature of the Disagreement

The draft provisions under subsection 8.14 (5) (c) do not correctly reflect the policy intent of this section and incorrectly state that management of flows must aim to meet the listed targets.

7.4.2 Issue and Rationale

The draft provisions incorrectly state that management of flows must aim to meet the listed targets i.e. that if salinity levels were less than the targets then action would be needed to increase salinity to meet the target. This is clearly not consistent with the policy intent that the targets are values that should be avoided and not exceeded. This appears to be a drafting error.

7.4.3 Proposed Resolution

(i) **Correct drafting error in section 8.14**

Amend 8.14 - Targets for managing water flows 5(c) as follows:

‘to not exceed the target values for levels of salinity at the reporting sites set out in the following table, 95% of the time’.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

7.5 Water Quality Management Measures in a Water Quality Management Plan

7.5.1 Nature of the Disagreement

The provision requiring measures to be specified in the Water Quality Management Plan for a Water Resource Plan must be redrafted to recognise that in preparing those measures, regard must be had to a number of factors, of which cost-effectiveness is one. Specific links requiring regard to be had to the risks to water quality identified under section 9.41 should also be included.

7.5.2 Issue and Rationale

The provision as currently drafted places undue emphasis on cost-effectiveness, by elevating this matter to subsection 9.33(1), when it is properly a matter, amongst others, to which regard must be had (as outlined in subsection (2)). While it is not envisaged that measures that are not cost-effective must be implemented, cost-effectiveness must be weighed amongst other appropriate factors.

It is also recommended that changes be made to reference the risks to water quality identified under section 9.41 as currently this explicit link is not made. Similarly to avoid doubt and provide clear guidance for water resource planners, reference to the Australian Drinking Water Guidelines is recommended.

7.5.3 Proposed Resolution

(i) Amend section 9.33

Amend section 9.33 which outlines how a Water Quality Management Plan must include specific measures to be taken in relation to managing water quality as follows (changes in blue):

(1) The WQM Plan must specify measures to be undertaken in or in relation to the water resources of the water resource plan area that contribute to the achievement of the water quality objectives in Part 3 of Chapter 8, unless there are no such measures that can be undertaken cost-effectively.

(2) The measures must be prepared having regard to:
   (a) the causes, or likely causes, of water quality degradation identified in accordance with section 9.30; and
   (b) target values identified in accordance with section 9.32; and
   (c) the targets in Division 4 of Part 4 of Chapter 8;
   (d) the risks identified in accordance with section 9.41;
   (e) the Australian Drinking Water Guidelines; and
   (f) cost effectiveness of the measures.

(3) The measures may include land management measures.

7.6 Other issues

Section 3 of this document also outlines matters and proposes amendments relevant the Basin Plan Water Quality and Salinity Management Plan.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

8 ENVIRONMENTAL WATERING PLAN

8.1 Environmental Management Framework

8.1.1 Nature of the Disagreement

The environmental management framework requires amendment to avoid duplication and ensure better coordination amongst planning processes. States' long term watering plans must be given greater weighting in the environmental management framework and be able to be inform the development of a Basin wide environmental watering strategy. Issues relating to governance and coordination of decision making raised in previous South Australian Government submissions still remain to be addressed. There is still potential for unnecessary duplication, particularly in regard to community consultation, amongst the various layers of planning and prioritisation in the proposed framework.

8.1.2 Issue and Rationale

The MDBA in its response to the matters raised by the Murray-Darling Ministerial Council notes that the Basin wide environmental watering strategy and States' long term watering plans may be developed concurrently. This must be made more explicit. The 2 year delay proposed by the development of a Basin wide environmental watering strategy is not supported by the South Australian Government. The Government intends to commence development of long term watering plans as soon as possible and recommends that State long term plans must inform any Basin wide environmental watering strategy or prioritisation processes. Further long term watering plans are key elements of the environmental water planning framework and must be given greater weighting in the planning and prioritisation process.

The process for developing State long term watering plans, including the consultation requirements, is sufficiently robust to ensure that the long-term watering plan can inform the Basin-wide environmental watering strategy.

Past experience shows that good governance arrangements, including multi-jurisdictional advisory committees to advise planners and water holders, for coordinated planning, delivery and real time management of environmental water are critical to achieve more effective outcomes in the southern connected Basin, particularly for the River Murray system. South Australia still considers that the inclusion of provisions to ensure good governance and more effective planning and delivery are necessary.

Other issues include:

- the need to support development of a coordinated Environmental Watering Plan for connected systems, in particular the southern connected Basin informed by State long term watering plans. While the MDBA has now altered the draft Basin Plan to include reference to a Basin-wide environmental watering strategy, it is not clear that this strategy would adequately perform this function as currently drafted;

- ensuring review and update is required for long term watering plans only where there is a change that materially affects the plan or it is 5 years since the last review; and

- reducing the potential duplication of effort in planning and prioritisation, in particular community consultation, that the management framework establishes.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

- address the potential 3 year delay in environmental water planning by the development of a specific interim environmental watering plan for the southern connected system in consultation with relevant jurisdictions and the Commonwealth Environmental Water Holder, to commence in the 2013-14 water year and which guides the application and delivery of environmental water.

8.1.3 Proposed Resolution

(i) Amendments to Basin wide environmental watering strategy provisions

Add the following additional sub-section to section 7.15 (4) to ensure the Basin wide environmental water strategy has regard to available long term watering plans:

‘Any long term watering plans provided to the Authority and/or published by the Authority or Basin State’;

Add a note to section 7.15 (4) to the effect that where the views of local communities and persons materially affected by the management of environmental water have already been considered in development of long term watering plans which have informed the Basin wide environmental watering strategy then it is not necessary to undertake additional or duplicative consultation.

Add a new sub-section to section 7.14 to the effect that:

‘The Basin-wide environmental watering strategy must include best practice mechanisms and governance arrangements for coordinated management of environmental water, including planning, priority setting, delivery and monitoring of environmental water’.

(ii) Amendments to Division 3 – Long-term watering plans

Add the following text “if a strategy is in place” to subsection 7.20 (2) to reflect that the first long-term watering plans may be developed ahead of the Basin-wide environmental watering strategy.

Redraft 7.22 so that the requirement to review and update long-term watering plans only applies if any of the listed matters materially affect the long term watering plan or it is 5 years after the last time the plan was reviewed under this section. Currently this essential qualifier on the requirement to review and update only applies to 7.22 (1) (d).

Include a provision requiring the Commonwealth Environmental Water Holder to have regard to States’ long term watering plans.

(iii) Amendments to Division 5 – Preparation of Basin annual environmental watering priorities

Amend section 7.29 to include a new sub-section to clearly state that the Authority must take into account or at least have particular regard to the long term watering plans for all water resource plan areas; and annual environmental water priorities for all water resource plan areas. The other matters to which the Authority must have regard can then be listed in a separate sub-section.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

(iv) **Amendments to enable the development of an interim water plan for connected resources**

Include additional provisions under Part 4 – Environmental Management Framework to enable the MDBA, in consultation with relevant jurisdictions and the Commonwealth Environmental Water Holder, to develop an interim watering plan or environmental watering schedule for the southern connected system which guides the application and delivery of environmental water. The plan or schedule would commence in the 2013-14 water year.

8.2 **Other issues**

Section 3 of this document also outlines matters and proposes amendments relevant the Basin Plan environmental watering plan.

9 **WATER RESOURCES PLANNING**

9.1 **Transparency in Water Resource Planning**

9.1.1 **Nature of the Disagreement**

The process for development and accreditation of Water Resource Plans along with agreements with Basin States in relation to the requirements of Chapter 9 should be transparent.

9.1.3 **Issue and Rationale**

To ensure compliance and transparency, amendments are suggested to require demonstration of compliance with the ‘have regard to’ aspects of Chapter 9. In addition publication of accreditation of Water Resource Plans will create a body of knowledge for future accreditation and promote transparency in the assessment process.

Similarly, publishing implementation agreements with Basin States will assist to ensure consistency and transparency across jurisdictions in relation to relevant standards and implementation of requirements in Chapter 9, while also allowing for this to be fit for purpose. It will also ensure there is confidence that any agreement is reasonable and defendable in terms of the overall objectives of Chapter 9. The same requirement for transparency is necessary where implementation agreements relate to all Basin Plan obligations.

9.1.2 **Proposed Resolution**

(i) **Amend section 9.06 Matters relating to the requirements of the Chapter**

Add the following text to Part 2 of Chapter 9 under section 9.06:

- Add a new subsection 9.06 (8):

  **Demonstration of consideration of water resource plan requirements**

  (8) A water resource plan must describe what was done to comply with the requirements of this Chapter including describing how consideration was given to ‘have regard to’, ‘having regard to’ and ‘regard must be had’ to certain matters.
Notice of disagreement by the South Australian Murray-Darling Basin Ministerial Council Member under section 43A of the Water Act 2007, 27 August 2012

- Add a new subsection 9.06 (7) (noting that similar amendment will be required should these provisions apply to all Basin Plan obligations consistent with Ministerial Council recommendations):

  (7) Any agreement reached with a Basin State shall be documented and made available to all Basin States.

(ii) **Add an additional sub-section to Part 2 of Chapter 9**

Add the following text to Part 2 of Chapter 9 under a new sub-section 9.08:

  **Reporting on accreditation**

  9.08 (1) The Authority must develop a report outlining the findings of the accreditation process for each Water Resource Plan and make it publicly available.

9.2 **Determining Actual Take**

9.1.1 **Nature of the Disagreement**

The process for determining actual take must be based on the best available, and fit for purpose methods, as well as information.

9.1.3 **Issue and Rationale**

The process for determining actual take must be based on the best available, and fit for purpose methods, as well as information.

9.1.2 **Proposed Resolution**

(i) **Amendments to Chapter 9**

Amend the text in subsection 9.15 (2) to include reference to best methods available as follows (proposed amendment in blue):

  (2) For a particular form of take, and subject to the requirement that a determination use the best methods and information available at the time, a determination may be made by:

  (a) measuring the quantity of water actually taken; or
  (b) estimating the quantity of water actually taken; or
  (c) a combination of the above.
REFERENCES


MDBA (Murray-Darling Basin Authority), 2011, The proposed “environmentally sustainable level of take” for surface water of the Murray-Darling Basin: Methods and outcomes, Murray-Darling Basin Authority, Canberra.

