

Background

Southern Riverina Irrigators (SRI) is the peak advocacy group for irrigators in the Murray Valley, situated in the Southern Riverina of NSW accessing water through Murray Irrigation Limited (MIL). Since the 60's SRI has had input into state and federal water policy that impacts the regions productivity. The MIL footprint spans across a 748,000-ha land mass and 1200 farming families.

Farming families in the Southern Riverina need to be able to operate their irrigation businesses with confidence and reliability to remain viable. This draft WRP does put many extra protections in place for E water usually at the expense of the reliability of productive water. Having confidence in Basin governments – especially the NSW Govt to manage this most precious resource to deliver the highest volume of water efficiently would enable communities to invest and plan for the future, feeding the nation the staple food groups that have tried and proven viability in this region. Since the 1930's when Hume Dam was built, this region has thrived and grown to capitalise on the huge capacity our high clay content soil offers to produce rice, wheat, corn, dairy, barley, canola, oats, peas, beans, beef, lamb, various horticultural enterprises and many other markets as they develop, most importantly at a level that is sustainable.

Multi-Jurisdictional Management and Execution of the Murray Darling Basin Plan

Opening Statement

The Water Act 2007 was described to the public as legislation to balance social, economic and environmental factors for water management in the Murray Darling Basin and to act in the National interest of Australia. While the objectives of the Act acknowledge these values, the body of the Act does not. This is shown in the implementation of the Murray Darling Basin Plan (MDBP), with 43 reviews to date, with no material directional changes as a result of these reviews, with continued calls to Can the Plan and have a Royal Commission into the MDBP and the MDBA as both continue to decimate regional communities in the MDB.

The Murray Darling Basin Authority (MDBA) Regulatory Impact Statement (RIS 2012) severely underestimated the social and economic consequences of the Basin Plan. This is in part related to how the Basin Plan produces economic inequities in geographical areas of the Basin. It is also how the MDBA reports on the social and economic impacts for regions most affected.

There has been no feasibility assessment of the consequences of the Water Act 2007 or Basin Plan, impacts of removing impediments to trade, or enacting the Constraints Management Strategy to achieve higher Basin Plan flow volume targets for the Murray River, measured at the Coorong, Lower Lakes, Murray Mouth (CLLMM) in South Australia.

The Water Act 2007 utilised Section 51 of the Australian constitution which enabled the Federal Government to use international environmental agreements as a mechanism to obtain new powers over water from the States. However, the Basin Plan also delivers inequitable environmental weightings across the Basin.

The Murray Darling Basin Authority (MDBA) was established as an independent authority. Documented decisions suggest that the MDBA's decisions have not been truly independent, nor consistent with a 'whole of basin' approach or reflective of achieving the objectives of the Water Act 2007 - A balance of social, economic and environmental outcomes.

Instead, the Water Act 2007 and current Basin Plan, ensures there has been a concentration of physical water recovery for the 'environment' in the Southern Basin. Primarily in the Murray system (NSW/Vic), the Goulburn River (Vic) and the Lower Darling. Social and economic impacts are not confined to a reduction in irrigation entitlements used for regional agriculture. Impacts extend to pricing and supply of Water Markets, stranded assets in irrigation regions and how the Murray River system will be operated in future and associated third party impacts.

Australia's water policy affecting the Murray Darling Basin is influenced by the Murray Darling Basin Agreement, internal State water management decisions, the Water Act 2007 and the MDBP.

Both the Murray-Darling Basin Agreement and the Murray Darling Basin Plan have over recent years led to major inequities in water management in the Southern Basin. NSW Murray Valley General Security (GS) has incurred higher impacts because of Murray Darling Basin Agreement requirements to South Australia and changes to inflows from the Northern Basin.

The Murray-Darling Basin Agreement currently is enabling;

- A reduction in-flow contributions from the Northern Basin's Darling River system to the Menindee Lakes, to be subsidised from water resources in the Southern Basin with specific effects on NSW Murray General Security water property rights
- Negative ecological impacts of (SA) infrastructure changes affecting the Coorong, Lower Lakes and Murray Mouth to be offset by increased flow demands on the Murray River
- Cumulative changes, including additional drought/or urban water reserves, environmental outcomes, and river operational changes within Objectives/Operating Plans, to reduce consumptive pool, with risks applied to General Security licenses
- transmission losses by not implementing and updating user pays principle for downstream usage outside the historical valleys as enabled by the separation of land and water by the Water Act 2007

The Water Act 2007 and Murray Darling Basin Plan establishes;

- The Murray Darling Basin's Baseline Diversion Limit (BDL) modelled at 13,623 (GL) per year (surface water volume estimates)
 1. Basin Plan set a new Sustainable Diversion Limit (SDL) of 10,873 (GL) per year
 2. A reduction of 2,750GL of surface water extractions
- Decisions on Basin Plan, environmental water recovery and Murray River operational changes, to occur prior to finalisation of licensing/metering in the Northern Basin (Qld/NSW)
- SA to increase its share of Basin Water:
 1. Retention of SA minimum entitlement flow of 1154GL + 696GL loss/dilution=(1850GL)
 2. Continuation of Pre-Basin Plan average flows (MDBA 4100GL average+ 5100GL long term average)

- MDBA Live River data states Long term average is 5549GL per annum to SA since 1967
3. Increased flows of 2000GL (3-yr rolling average, min of 650 GL/yr.) to SA barrages

- Murray River operations to be amended to allow higher volumes/flow rates above the natural capacity of the riverbanks (Constraints Management Strategy)
- MDBA and NSW Government documents confirm intent for both environmental and operational water (irrigation orders) below Barmah Choke, to utilise Constraints Management Strategy
- Water Act 2007 requirements for 'reduction in trade impediments will have major impacts on water markets and additional system losses

There are numerous rolling targets deliverable by each state in the MDB and the Commonwealth leading up to the full implementation of the MDBP by 2024, given the direct contravention of the National Water Initiative 2004 and the Water Act 2007 with its vehicles of delivery – The Murray Darling Basin Plan and Murray Darling Basin Authority, a moratorium on the MDBP itself. There is still up to \$4.5bn on the table for the 450GL and 605 SDL Projects that states are keen to access this, which would, like the previous 2861GL recovered under the MDBP, have massive negative social, economic and environmental impacts.

Further steps must be taken - the plan is failing to date, to achieve any of the eight objectives the various involved governments promised the Murray Darling Basin Communities that it would achieve, despite the 43 reports commissioned by public pressure whereby numerous governmental departments admitted failure and commenced them, which each state and federal government promptly ignored and continued on their destructive path. This is more than enough to trigger a:

***A Federal Royal Commission into the
Murray Darling Basin Plan and Murray Darling Basin
Authority***

Short term:

National Water Initiative 2004

INTERGOVERNMENTAL AGREEMENT ON A NATIONAL WATER INITIATIVE Between the Commonwealth of Australia and the Governments of New South Wales, Victoria, Queensland, South Australia, the Australian Capital Territory and the Northern Territory.

"IMPLEMENTATION 8.

The Parties agree that actions under this Agreement will be implemented in accordance with the timetable at Schedule A and in accordance with implementation plans to be developed by each jurisdiction within 12 months of signing this Agreement, to reflect their particular circumstances. The Parties will make substantial progress towards implementation of this Agreement by 2010."

Full implementation of the National Water Initiative (NWI 2004) is imperative. The NWI within Southern NSW is the last meaningful engagement with tangible outcomes that irrigators have had with water reform within NSW or Federally. Various Schedules that are woven within the NWI are in the Appendix of this document and enshrine which governments are obligated to deliver these outcomes, given the nature of the Intergovernmental NWI and every states reaffirmed commitment through the WRP, MDBP and Water Act, it is imperative that the deliverables in the NWI that permeate through to the Water Act 2007 are achieved, to "promote and optimise" the triple bottom line.

Water Markets and Trading

Outcomes

58. The States and Territories agree that their water market and trading arrangements will:

- i) facilitate the operation of efficient water markets and the opportunities for trading, within and between States and Territories, where water systems are physically shared or hydrologic connections and water supply considerations will permit water trading;
- ii) minimise transaction costs on water trades, including through good information flows in the market and compatible entitlement, registry, regulatory and other arrangements across jurisdictions;
- iii) enable the appropriate mix of water products to develop based on access entitlements which can be traded either in whole or in part, and either temporarily or permanently, or through lease arrangements or other trading options that may evolve over time;
- iv) recognise and protect the needs of the environment; and
- v) provide appropriate protection of third-party interests.

Actions

59. The States and Territories agree to have in place pathways by 2004, leading to full implementation by 2006, of compatible, publicly-accessible and reliable water registers of all water access entitlements and trades (both permanent and temporary) on a whole of basin or catchment basis, consistent with the principles in Schedule F. The Parties recognise that in some instances water service providers will be responsible for recording details of temporary trades.

60. The States and Territories agree to establish by 2007 compatible institutional and regulatory arrangements that facilitate intra and interstate trade, and manage differences in entitlement reliability, supply losses, supply source constraints, trading between

systems, and cap requirements, including:

- i) principles for trading rules to address resource management and infrastructure delivery considerations, as set out in Schedule G;
- ii) where appropriate, the use of water access entitlement exchange rates and/or water access entitlement tagging and a system of trading zones to simplify administration;
- iii) the application of consistent pricing policies (refer paragraph 64 below);
- iv) in respect of any existing institutional barriers to intra and interstate trade:
 - a) immediate removal of barriers to temporary trade;
 - b) immediate removal of barriers to permanent trade out of water irrigation areas up to an annual threshold limit of four percent of the total water entitlement of that area, subject to a review by 2009 with a move to full and open trade by 2014 at the latest, except in the southern Murray-Darling Basin where action to remove barriers to trade is agreed as set out under paragraph 63; and
 - c) jurisdictions may remove barriers earlier than those in (b) above;
- v) subject to (i) above, no imposition of new barriers to trade, including in the form of arrangements for addressing stranded assets; and
- vi) where appropriate, implementing measures to facilitate the rationalisation of inefficient infrastructure or unsustainable irrigation supply schemes, including consideration of the need for any structural adjustment assistance (paragraph 97 refers).

61. To support the above actions on trading, the Parties also agree to complete the following studies and to consider implementation of any recommendations by June 2005:

- i) a study taking into account work already underway, on effective market and regulatory mechanisms for sharing delivery capacity and extraction rates among water users, where necessary to enhance the operation of water markets and make recommendations to implement efficient ways to manage changes in water usage patterns, channel capacity constraints and water quality issues;
- ii) a study to facilitate cross system compatibility, that analyses the existing product mix, proposes possible choices of product mix, makes recommendations on the desirable model and proposes a transition path for implementation; and
- iii) a study to assess the feasibility of establishing market mechanisms such as tradeable salinity and pollution credits to provide incentives for investment in water-use efficiency and farm management strategies and for dealing with environmental externalities.

62. Recognising the need to manage the impacts of assets potentially stranded by trade out of serviced areas, the Parties agree to ensure that support mechanisms used for this purpose, such as access and exit fees and retail tagging, do not become an institutional barrier to trade (paragraph 60(v) refers).

63. In regard to the Southern Murray-Darling Basin, the relevant Parties (Commonwealth, New South Wales, Victoria and South Australia) that are members of the Murray Darling Basin Ministerial Council agree to:

- i) take all steps necessary, including making any corresponding legislative and administrative changes, to enable exchange rates and/or tagging of water access entitlements traded from interstate sources to buyers in their jurisdictions by June 2005;
- ii) reduce barriers to trade in the Southern Murray-Darling Basin by taking the necessary legislative and other actions to permit open trade and ensure competitive neutrality, and to establish an interim threshold limit on the level of permanent trade out of all water irrigation areas of four per cent per annum of the total water access entitlement for the water irrigation area by June 2005, including:
 - a) in the case of NSW, making necessary legislative changes to give effect to a Heads of Agreement between Government and major irrigation corporations to permit increased trade, including to remove barriers to trade up to the above interim threshold limit; and
 - b) in the case of Victoria and South Australia, bringing into effect change to permit increased trade including to remove barriers to trade up to the above interim threshold level, in the respective Authorities and Trusts, at the same time that NSW amends its legislation;
- iii) review the above actions in June 2005 to assess whether all relevant parties have met their obligations to enable achievement of the interim threshold;
- iv) a study into the legal, commercial and technical mechanisms necessary to enable interstate trade to commence in the Southern Murray-Darling Basin by June 2005;
- v) review the outcome of 63(ii)(a) by 2007 and, if the actions are shown to be insufficient to ensure the desired level of open trade, to take any further action, including legislation, determined necessary to achieve the desired opening of water trading markets in the Southern Murray-Darling Basin;
- vi) the National Water Commission monitoring the impacts of interstate trade and advising the relevant Parties on any issues arising; and
- vii) review the impact of trade under the interim threshold in 2009, with a view to raising the threshold to a higher level if considered appropriate.

Best Practice Water Pricing and Institutional Arrangements

Outcomes

64. The Parties agree to implement water pricing and institutional arrangements which:

- i) promote economically efficient and sustainable use of:
 - a) water resources;
 - b) water infrastructure assets; and
 - c) government resources devoted to the management of water;
- ii) ensure sufficient revenue streams to allow efficient delivery of the required services;
- iii) facilitate the efficient functioning of water markets, including inter-jurisdictional water markets, and in both rural and urban settings;
- iv) give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management;

- v) avoid perverse or unintended pricing outcomes; and
- vi) provide appropriate mechanisms for the release of unallocated water.

Actions

Water Storage and Delivery Pricing

65. In accordance with NCP commitments, the States and Territories agree to bring into effect pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements, including through the use of:

- i) consumption based pricing;
- ii) full cost recovery for water services to ensure business viability and avoid monopoly rents, including recovery of environmental externalities, where feasible and practical; and
- iii) consistency in pricing policies across sectors and jurisdictions where entitlements are able to be traded.

Actions

79. Recognising the different types of surface water and groundwater systems, in particular the varying nature and intensity of resource use, and recognising the requirements to identify environmental and other public benefit outcomes in water plans, and describe the water management arrangements necessary to meet those outcomes (paragraph 35.ii) refers), the States and Territories agree to:

- i) establish effective and efficient management and institutional arrangements to ensure the achievement of the environmental and other public benefit outcomes, including:
 - a) environmental water managers that are accountable for the management of environmental water provisions and the achievement of environmental and other public benefit outcomes
 - b) joint arrangements where resources are shared between jurisdictions;
 - c) common arrangements in the case of significantly inter-connected groundwater and surface water systems;
 - d) periodic independent audit, review and public reporting of the achievement of environmental and other public benefit outcomes and the adequacy of the water provision and management arrangements in achieving those outcomes;
 - e) the ability for environmental water managers to trade water on temporary markets at times such water is not required to contribute towards environmental and other public benefit outcomes (consistent with paragraph 35(iii));
 - f) any special requirements needed for the environmental values and water management arrangements necessary to sustain high conservation value rivers, reaches and groundwater areas;
- ii) where it is necessary to recover water to achieve modified environmental and other public benefit outcomes, to adopt the following principles for determining the most effective and efficient mix of water recovery measures:
 - a) consideration of all available options for water recovery, including:

- investment in more efficient water infrastructure;
 - purchase of water on the market, by tender or other market based mechanisms;
 - investment in more efficient water management practices, including measurement; or
 - investment in behavioural change to reduce urban water consumption;
- b) assessment of the socio-economic costs and benefits of the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (eg. impacts on water quality or salinity); and
- c) selection of measures primarily on the basis of cost-effectiveness, and with view to managing socio-economic impacts.

Water Resource Accounting

Outcome

80. The Parties agree that the outcome of water resource accounting is to ensure that adequate measurement, monitoring and reporting systems are in place in all jurisdictions, to support public and investor confidence in the amount of water being traded, extracted for consumptive use, and recovered and managed for environmental and other public benefit outcomes.

Actions

Benchmarking of Accounting Systems

81. Recognising that a national framework for comparison of water accounting systems can encourage continuous improvement leading to adoption of best practice, the Parties agree to benchmark jurisdictional water accounting systems on a national scale by June 2005, including:

- i) state based water entitlement registering systems;
- ii) water service provider water accounting systems;
- iii) water service provider water use/delivery efficiency; and
- iv) jurisdictional/system water and related data bases.

Consolidated Water Accounts

82. Recognising that robust water accounting will protect the integrity of the access entitlement system, the Parties agree to develop and implement by 2006:

- i) accounting system standards, particularly where jurisdictions share the resources of river systems and where water markets are operating;
- ii) standardised reporting formats to enable ready comparison of water use, compliance against entitlements and trading information;
- iii) water resource accounts that can be reconciled annually and aggregated to produce a national water balance, including:
 - a) a water balance covering all significant water use, for all managed water resource systems;
 - b) systems to integrate the accounting of groundwater and surface water use where close interaction between groundwater aquifers and streamflow exist;
 - c) consideration of land use change, climate change and other externalities as elements of the water balance.

83. States and Territories agree to identify by end 2005 situations where close interaction between groundwater aquifers and streamflow exist and implement by 2008 systems to integrate the accounting of groundwater and surface water use.

Environmental Water Accounting

84. The Parties agree that principles for environmental water accounting will be developed and applied in the context of consolidated water accounts in paragraph 82.

85. The Parties further agree to develop by mid 2005 and apply by mid 2006:

- i) a compatible register of new and existing environmental water (consistent with paragraph 35) showing all relevant details of source, location, volume, security, use, environmental outcomes sought and type; and
- ii) annual reporting arrangements to include reporting on the environmental water rules, whether or not they were activated in a particular year, the extent to which rules were implemented and the overall effectiveness of the use of resources in the context of the environmental and other public benefit outcomes sought and achieved.

Information

86. States and Territories agree to:

- i) improve the coordination of data collection and management systems to facilitate better sharing of this information;
- ii) develop partnerships in data collection and storage; and
- iii) identify best practice in data management systems for broad adoption.

Metering and Measuring

87. The Parties agree that generally metering should be undertaken on a consistent basis in the following circumstances:

- i) for categories of entitlements identified in a water planning process as requiring metering;
- ii) where water access entitlements are traded;
- iii) in an area where there are disputes over the sharing of available water;
- iv) where new entitlements are issued; or
- v) where there is a community demand.

88. Recognising that information available from metering needs to be practical, credible and reliable, the Parties agree to develop by 2006 and apply by 2007:

- i) a national meter specification;
 - ii) national meter standards specifying the installation of meters in conjunction with the meter specification; and
 - iii) national standards for ancillary data collection systems associated with meters.
- Reporting

89. The Parties agree to develop by mid 2005 and apply national guidelines by 2007 covering the application, scale, detail and frequency for open reporting addressing:

- i) metered water use and associated compliance and enforcement actions;
- ii) trade outcomes;
- iii) environmental water releases and management actions; and
- iv) availability of water access entitlements against the rules for availability and use.

Community Partnerships and Adjustment

Outcome

93. Parties agree that the outcome is to engage water users and other stakeholders in achieving the objectives of this Agreement by:

- i) improving certainty and building confidence in reform processes;
- ii) transparency in decision making; and
- iii) ensuring sound information is available to all sectors at key decision points.

94. Parties also agree to address adjustment issues raised by the implementation of this Agreement.

Actions

95. States and Territories agree to ensure open and timely consultation with all stakeholders in relation to:

- i) pathways for returning overdrawn surface and groundwater systems to environmentally sustainable extraction levels (paragraphs 41 to 45 refer);
- ii) the periodic review of water plans (paragraph 398 refers); and
- iii) other significant decisions that may affect the security of water access entitlements or the sustainability of water use.

96. States and Territories agree to provide accurate and timely information to all relevant stakeholders regarding:

- i) progress with the implementation of water plans, including the achievement of objectives and likely future trends regarding the size of the consumptive pool; and
- ii) other issues relevant to the security of water access entitlements and the sustainability of water use, including the science underpinning the identification and implementation of environmental and other public benefit outcomes.

97. The Parties agree to address significant adjustment issues affecting water access entitlement holders and communities that may arise from reductions in water availability as a result of implementing the reforms proposed in this Agreement.

- i) States and Territories will consult with affected water users, communities and associated industry on possible appropriate responses to address these impacts, taking into account factors including:

- a) possible trade-offs between higher reliability and lower absolute amounts of water;
- b) the fact that water users have benefited from using the resource in the past;
- c) the scale of the changes sought and the speed with which they are to be implemented (including consideration of previous changes in water availability); and
- d) the risk assignment framework referred to in paragraphs 46 to 51.

ii) The Commonwealth Government commits itself to discussing with signatories to this Agreement assistance to affected regions on a case by case basis (including set up costs), noting that it reserves the right to initiate projects on its own behalf.

Knowledge and Capacity Building

98. This Agreement identifies a number of areas where there are significant knowledge and capacity building needs for its ongoing implementation. These include: regional water accounts and assessment of availability through time and across catchments; changes to water availability from climate and land use change; interaction between surface and groundwater components of the water cycle; demonstrating ecological outcomes from environmental flow management; improvements in farm, irrigation system and catchment water use efficiency; catchment processes that impact on water quality; improvements in urban water use efficiency; and independent reviews of the knowledge base.

99. There are significant national investments in knowledge and capacity building in water, including through the Cooperative Research programme, CSIRO Water Flagship and Land and Water Australia, State agencies, local government and higher education institutions. Scientific, technical and social aspects of water management are multidisciplinary and extend beyond the capacity of any single research institution.

Outcome

100. Parties agree that the outcome of knowledge and capacity building will assist in underpinning implementation of this Agreement.

Actions

101. Parties agree to:

- i) identify the key knowledge and capacity building priorities needed to support ongoing implementation of this Agreement; and
- ii) identify and implement proposals to more effectively coordinate the national water knowledge effort.

Correcting the Failures of the implementation of the Basin Plan Opportunities for increases to water availability

- Ensure increased conveyance and transmission losses (outside previous history of use) or net trade conditions, on the Murray be attributed to relevant entities:
 - 1. CEWH environmental entitlements
 - 2. Commercial trades of temporary or permanent entitlements
 - 3. Net trade changes to South Australia that result in increased delivery losses

- Recalculate how/what environmental benefits from 'above average or flood flows' (currently water naturally delivered during flood does not count as environmental flows)
 1. Attribute to environmental held entitlements (usage) for that period
- Review Dry Sequence Inflow Modelling
- Salinity targets
 1. Evaluate options to return Dilution flow rule of 696GL to consumptive pool
 2. Investigate actual flow to SA (e.g. from 1968 flow rates 2.99-time minimum entitlement flows)
 3. Remove SA Additional Dilution Flow Rule – River Murray Agreement
- Moratorium on any new irrigation developments downstream of the Barmah Choke for:
 1. New approvals
 2. Expansion of existing
- Public disclosure of all WAL Numbers being transferred into different zones including
 1. CEWH
 2. Commercial users
- Ensure River Murray operations do not exceed channel capacity and operational losses are borne by the consumptive pool
 1. Attribute losses to relevant entity
 - Operate Adelaide de-salinisation plant (as per Federal Funding conditions) to offset Adelaide's water demands on the Murray (100GL saving)
- Moratorium on Federal Funding of the Basin Plan until a full review of the Basin Plan
 1. Science
 2. Modelling
 3. Inflow calculations
 4. Assessment of CLLMM and new infrastructure options
 - 2000 GL flow requirement Basin Plan, 650GL annually
- Federal funding freeze on
 1. The 450GL (up water)
 2. 605GL SDL projects until a full review of projects /Basin Plan flow targets and assessment of operational losses on the Murray System (NSW/Vic)
 3. Allowance of Complementary measures are included
 4. Reject investment in SA proposed 'Coorong Connector'. This SA project aims to create a channel link between Lake Albert and the Coorong with increased flows from the Murray River benefitting local irrigators (note: currently Lake Albert is a terminal brackish lake with no natural connection to the Coorong).
- Amend Murray River Agreement to account for reduction in inflows from the Darling
 1. To account for drought conditions more effectively and to stop cross subsidisation of inflow losses on NSW Murray
 2. Amend SA 1850GL agreement to account for changes in Northern Basin
 3. Investigate historical Valley flow contributions to SA entitlement flows annually from each valley and identify variances and/ change
- Independent review of water modelling requirements for Murray River ecosystem health and levels of inundation

1. Enable full transparent review of Basin Plan 18 indicator sites water needs on the Murray System
 2. Review Living Murray Initiative infrastructure works
- Develop rules and monitoring system to transparently account for flows passing over South Australia
 1. Full telemetry metering of extractions
 2. Fully automate the South Australian barrages and incorporate world class options for adaptive management (marine/fresh) (K Jury, 2016)
 - Moratorium on Murray Darling Basin Plan flow targets to the Coorong, Lower Lakes, Murray Mouth (CLLMM) until a full review: (
 1. Identifies alternate or additional infrastructure options to achieve sustainable outcomes for the CLLMM
 2. Identify diversions volumes from South East of South Australia's Drainage Scheme and South Australia's Upper South East Drainage & Flood Mitigation Scheme to the Southern Ocean and assess potential water savings
 3. 3. Remove Federal Government Funding rule impediment that limits flows to Southern Lagoon of the Coorong from the Upper SE of SA Drainage & Flood Mitigation Scheme (in excess of proposed SDL 26GL
 4. 4. Review alternative options to scour Murray Mouth
 5. 5. Assess volumetric savings and return to NSW Murray Valley consumptive pool

SOUTH AUSTRALIA INVESTMENT OPTIONS

ADAPTING TO CLIMATE CHANGE – COORONG, LOWER LAKES AND MURRAY MOUTH (CLLMM)

Coorong:

1. Ocean Connection: Pipe (+valve) Infrastructure through Coorong Sand dunes to allow marine waters into Southern Lagoon:
 - a. Ocean water replaces the loss of freshwater flows from SE of SA, currently diverted by drainage schemes away from the Coorong out to the Southern Ocean
 - b. Enables reduction in hyper salinity of Southern Lagoon
 - c. Delivers ecological health and native fish benefits
 - d. Potential to revive the Mulloway industry (refer: SA SARDI Aquatic Sciences paper no.22
 - e. Creates continuous flow connection using ocean waters, ocean → southern Lagoon → to Northern Lagoon → exiting in Murray Mouth
 - f. Restores flow volumes to Murray Mouth, reduction in dredging/+ reliance on additional Murray River flows
 - g. International recognition for RAMSAR significance is maintain through amendments to ecological character descriptions

2. South East of SA Drainage Scheme (Main)
 - a. Restore percentage of South East of South Australia main drainage Scheme to the Southern Lagoon (flows currently diverted to Southern Ocean)
3. South East of SA Upper South East & Flood Mitigation Scheme
 - a. Increase volumetric return rate for SA SDL Project: from 26 GL (avg)

Lock Zero:

1. Enables an adaptive management approach and risk management strategy to address climate change risks and prolonged drought
2. Infrastructure investment to protect/upgrade Adelaide's offtake water supply system
3. Eliminates risks of acid sulphate soil exposure in Lower Lakes (temporary restoration of estuary/use of marine inflows)
4. Creates evaporative savings measures bringing benefits to Southern Basin

Murray Mouth

- Full Telemetry metering on Barrages
 1. Improved flow data to allow risk management strategies to be researched and utilised
 2. Achieves reliable flow data to maximise research into management of the Murray Mouth
- Full automation of Barrages inclusive of two-way flow technology
- Enables adaptive management of Lake Alexandrina to address climate risks or prolonged drought (partial or temporary restoration of estuarine conditions)
- Eliminates risks of acid sulphate soil exposure if flow volumes to South Australia are insufficient to maintain Lower Lake volume
- Allows additional options to enable periodic/short term restoration of natural tidal prism to clear Murray Mouth
- Prevents sea water intrusions during Southerly Swells and maximises opportunities to reduce salinity levels in Lake Alexandrina
- Combination of infrastructure/technology investment, ocean inflow to Southern lagoon, partial or periodic restoration of tidal prism, helps reduce risks of dislocation of acid sulphate soil occurring from reliance on dredging operations
- Enables options to expel European Carp from Lake Alexandrina
- Helps local communities manage and prepare for sea level rise (refer SA Government: (barrages overtopped by 2100 Securing the Future 2010)

Review Mundoo and Ewe Island Barrages.

- Refer: Murray Darling Basin Commission: River Murray Barrages, Environmental Flows 'An evaluation of environmental flow needs in the Lower Lakes and Coorong' – a report for the Murray Darling Basin Commission – June 2000

Summary of Benefits: CLLMM Infrastructure Investments

- Options to achieve physical water savings
 1. Via evaporative savings and a reduction in high Murray flow system losses
 2. Via restoring flows to the Southern Lagoon using ocean water/part fresh (SE of SA)
 3. Adverse impacts individual Lower Lakes—subsidies for piped supplies (e.g. Murray Water) Water Savings potential 500GL– 1000GL annually
- Increase return of South East of SA Drainage Scheme and Upper SE of SA Drainage and Flood Mitigation Scheme to the Coorong (above current proposed return of 26GL)
 1. Water Savings potential > 500GL annually
- Water savings benefits shared proportionally between SA, Vic and NSW Murray to sustain irrigation regions
- Reduces emerging water risks demands on below choke horticulture plantations
- Allows permanent infrastructure in CLLMM region to manage climate change /drought, increased flexibility and options in Southern Basin, maintain viability of irrigation regions
- Permanent solution to hyper salinity and ecological risks in the Coorong
- Cost effective and ecological improvement for managing sedimentation risks in the Murray Mouth
- Resolves system constraints Mid Murray and Edward Wakool, including losses when Menindee cannot contribute to Murray flows
- Avoids taxpayers/or irrigation funding on action to bypass Barmah and overcome other river chokes (Edward Wakool)
- Addresses system capacities limits in the Murray River and Goulburn River (NSW/Vic).
- Resolves ongoing concerns with Basin Plan Constraints Management Strategy (identified risks in Basin Plan)
- Substantial short, medium to longer term employment opportunities in South Australia (automation of barrages, Lock Zero, Ocean inflow system to Southern Lagoon)
- Securing water from the Murray assists South Australia in reducing price rise risks for Adelaide's drinking water
- Broadscale benefits to water availability and reduced risks irrigation regions from impacts of the Basin Plan on Water Markets
- Resolves operational system capacity risks/losses and avoids bank erosion issues in the mid Murray region (e.g. Barmah Millewa) and other central Murray forests issues
- Reduces upstream flooding risk from Basin Plan target of 80GL at SA Border
- Note: the combined impact of the October 2016 catastrophic flood in the Murray River, high flows in Murrumbidgee (med flood) and Menindee achieved approximately 94GL only (limited days). Within 3 weeks of combined floods reaching barrages, dredging of the Murray Mouth had to be resumed
- Delivers increased flexibility and a reduction in system loss issues for management of Commonwealth Environmental Water Holder (CEWH)

Yours sincerely,

Chris Brooks

Chair, Southern Riverina Irrigators

Appendix A:

SRI Submission to Independent Assessment of economic conditions in the Basin. 2019.

<https://www.dropbox.com/s/dviw267ery35ked/Independent%20assessment%20of%20social%20and%20economic%20conditions%20in%20the%20Basin.pdf?dl=0>

MRSRG Submission to Inquiry into management of the Murray-Darling Basin (Keelty Review). 2019.

<https://www.dropbox.com/s/w025grrawa8s3hk/MURRAY%20VALLEY%20JOINT%20STAKEHOLDER%20UBMISSION%20FINAL.pdf?dl=0>

INTERGOVERNMENTAL AGREEMENT ON A NATIONAL WATER INITIATIVE. (IGA) 2004.

<https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/water/Intergovernmental-Agreement-on-a-national-water-initiative.pdf>

SCHEDULE A: TIMELINE FOR IMPLEMENTATION OF KEY ACTIONS

Key Actions	Date	IGA paragraphs	Responsibility
<i>Implementation</i>			
▪ Establish a National Water Commission	end 2004	10	All Parties
▪ Jurisdictions to develop implementation plans.	June 2005	8	States ¹
▪ Substantial progress towards implementation of this Agreement	2010	8	All Parties
<i>Water access entitlements and planning framework</i>			
▪ Implementation of the framework: - substantial completion of plans to address any existing overallocation for all river systems and groundwater resources in accordance with commitments under the 1994 COAG water reform framework - Legislative and administrative regimes amended to incorporate the elements of the entitlements and allocation framework in this Agreement	end 2005 end 2006	26 (i) 26(ii)	States States
▪ Water access entitlements to be defined and implemented	immediate	28-34	States
▪ Water to meet environmental and other public benefit outcomes identified in water plans to be defined, provided and managed.	immediate	35	States
▪ Water plans to be prepared along the lines of the characteristics and components at Schedule D based on the following priorities: - plans for systems that are overallocated, fully allocated or approaching full allocation; - plans for systems that are not yet approaching full allocation	end 2007 end 2009	39-40 39-40	States States
▪ Substantially complete addressing overallocation as per NCC commitments. ▪ substantial progress toward adjusting all <i>overallocated</i> and/or <i>overused</i> systems	2005 end 2010	41 43 - 45	States All Parties
▪ Risk assignment framework to be implemented immediately for all changes in allocation not provided for in overallocation pathways in water plans	immediate	46-50	States

▪ Water plans to address indigenous water issues	immediate	52 - 54	States
▪ Implementation of measures to address water interception by land use change activities on a priority basis in accordance with water plans	no later than 2011	55 - 57	States
<i>Water markets and trading</i>			
▪ Adoption of publicly accessible, compatible systems for registering water access entitlements and trades consistent with Schedule F: - pathways leading to full implementation; and - full implementation.	end 2004 end 2006	59 59	States States

¹ For purposes of this Schedule “States” is an abbreviation for “States and Territories”

Key Actions	Date	IGA paragraphs	Responsibility
<i>Water markets and trading (cont.)</i>			
▪ Establish compatible institutional and regulatory arrangements that facilitate trade, including arrangements consistent with principles in Schedule G - re institutional barriers to trade - remove barriers to temporary trade - remove barriers to permanent trade up to an annual threshold of 4 percent - review impact on trade of interim threshold - full removal of barriers to trade	end 2007 immediate immediate (except for southern MDB) 2009 end 2014	60 60(iv)(a) 60(iv)(b) 60(iv)(b)	States States States States
▪ Complete the following studies and consider implementation of any recommendations: - review of water products - new approach to sharing delivery capacity and extraction rates among users - feasibility of establishing market mechanisms such as tradeable salinity and pollution credits to provide incentives for investment in water-use efficiency and farm management strategies and for dealing with environmental externalities	June 2005 June 2005 June 2005	61(i) 61(ii) 61(iii)	All Parties All Parties All Parties
▪ Relevant Parties (Commonwealth, NSW, Victoria and SA) agree to: - take necessary steps to enable the use of exchange rates and/or tagging for interstate trade; - reduce barriers to trade in southern MDB and establish an interim limit on permanent trade out of water irrigation areas of 4 percent per annum - NSW make legislative changes to remove barriers and permit increased trade up to the interim limit; - Vic and SA make change to remove barriers and permit increased trade up to the interim limit - review actions to assess whether relevant parties have removed barriers to achieve interim limit - study into mechanisms necessary to enable interstate	June 2005 June 2005 June 2005 June 2005 June 2005 June 2005	63(i) 63(ii) 63(ii)(a) 63(ii)(b) 63(iii) 63(iv)	relevant Parties relevant Parties NSW Victoria and SA relevant Parties relevant Parties

trade - review outcome of actions by NSW - NWC monitor impacts of interstate trade - review the impact on trade under the interim threshold.	end 2007 ongoing end 2009	63(v) 63(vi) 63(vii)	relevant Parties NWC relevant Parties
<i>Best practice water pricing and institutional arrangements</i>			
<ul style="list-style-type: none"> Complete commitments under the 1994 COAG Water Reform Framework to bring into effect pricing policies for water storage and delivery in rural and urban systems 	end 2004	65	States

Key Actions	Date	IGA paragraphs	Responsibility
<i>Best practice water pricing and institutional arrangements(cont.)</i>			
<ul style="list-style-type: none"> <u>Metropolitan</u> Continued movement towards <i>upper bound pricing</i>; development of pricing policies for recycled water and stormwater; review and development of pricing policies for trade wastes; and development of national guidelines for water accounts. <u>Rural and Regional</u> full cost recovery for all rural surface and groundwater based systems: continued movement towards <i>lower bound pricing</i> per NCC commitments; and achievement of <i>upper bound pricing</i> for all rural systems, where practicable. 	end 2008 end 2006 end 2006 end 2006 ongoing ongoing	66(i) 66 (ii) 66 (iii) 66 (iv) 66 (v)(a) 66 (v)(b)	States States States States States States
<ul style="list-style-type: none"> Consistent approaches to pricing and attributing costs of water planning and management 	end 2006	67	States
<ul style="list-style-type: none"> Investment in new or refurbished water infrastructure to continue to be assessed as economically and ecologically sustainable before being approved 	ongoing	69	States
<ul style="list-style-type: none"> Release of unallocated water 	ongoing	70 - 72	States
<ul style="list-style-type: none"> Environmental externalities managed through a range of regulatory measures 	ongoing	73	States
<ul style="list-style-type: none"> <u>Benchmarking efficient performance</u> independent, public, annual reporting of performance benchmarking for all metropolitan, non-metropolitan and rural water delivery agencies develop nationally consistent report framework 	ongoing 2005	75 76	States All Parties
<ul style="list-style-type: none"> <u>Independent pricing regulator</u> independent pricing bodies to set and review prices or pricing processes for water storage and delivery and publicly report. 	ongoing	77	All Parties

<i>Integrated management of environmental water</i>			
<ul style="list-style-type: none"> Recognising the different types of surface water and groundwater systems: <ul style="list-style-type: none"> effective and efficient management and institutional arrangements to ensure the achievement of the environmental outcomes; and where it is necessary to recover water to achieve environmental outcomes, to adopt the principles for determining the most effective and efficient mix of water recovery measures. 	immediate ongoing	79(i) 79(ii)	States States
Key Actions	Date	IGA paragraphs	Responsibility
<i>Water resource accounting</i>			
<ul style="list-style-type: none"> Benchmarking of accounting systems 	mid 2005	81	All Parties
<ul style="list-style-type: none"> Consolidated water accounts <ul style="list-style-type: none"> Develop and implement robust water accounting Identify situations where close interaction between surface and groundwater exist Implement systems to integrate the accounting of surface and groundwater 	end 2006 end 2005 end 2008	82 83 83	All Parties All Parties All Parties
<ul style="list-style-type: none"> Environmental water accounting: <ul style="list-style-type: none"> develop an environmental water register and annual reporting arrangements; and apply the environmental water register and annual reporting arrangements. 	mid 2005 mid 2006	85 85	All Parties All Parties
<ul style="list-style-type: none"> Implement information measures 	ongoing	86	All Parties
<ul style="list-style-type: none"> Metering and measuring actions: <ul style="list-style-type: none"> develop metering and measuring actions; and implement metering and measuring actions. 	end 2006 end 2007	88 88	All Parties All Parties
<ul style="list-style-type: none"> National guidelines on water reporting: <ul style="list-style-type: none"> develop national guidelines on water reporting; and apply national guidelines on water reporting. 	mid 2005 end 2007	89 89	All Parties All Parties
<i>Urban water reform</i>			
<ul style="list-style-type: none"> Implementation of demand management measures, including: <ul style="list-style-type: none"> implementation and compliance monitoring of WELS, including mandatory labelling and minimum standards for agreed appliances; develop and implement 'Smart Water Mark' for garden activities; review effectiveness of temporary water restricts and associated public education strategies, and consider extending low level restrictions to standard practice; and implement management responses to water supply and discharge system losses including leakage, excess pressure, overflows and other maintenance needs. 	end 2005 end 2006 end 2006 end 2006	91(i) 91 (ii) 91 (iii) 91 (iv)	States States States States

<ul style="list-style-type: none"> ▪ Encourage further innovation in urban water use including: <ul style="list-style-type: none"> - develop and apply national health and environmental guidelines for water sensitive urban designs for recycled water and stormwater; - develop national guidelines for evaluating options for water sensitive urban developments in both new urban sub-divisions and high rise; - evaluate existing water sensitive urban icon developments; - review institutional and regulatory models for integrated urban water cycle planning and management and develop best practice guidelines; - review incentives to stimulate innovation. 	end 2005	92(i)	All Parties
	end 2006	92 (ii)	All Parties
	end 2005	92 (iii)	All Parties
	end 2006	92 (iv)	All Parties
	end 2006	92 (v)	All Parties
Key Actions	Date	IGA paragraphs	Responsibility
<i>Community partnerships and adjustment</i>			
<ul style="list-style-type: none"> ▪ Open and timely consultation with all relevant stakeholders in relation to: pathways for returning overallocated systems to sustainable extraction levels, periodic review of water plans, and other significant decisions affecting the security of water access entitlements. 	ongoing	95	States
<ul style="list-style-type: none"> ▪ Provision of accurate and timely information to all relevant stakeholders in relation to the progress of water plan implementation and other issues relevant to the security of water access entitlements. 	ongoing	96	States
<ul style="list-style-type: none"> ▪ Address significant adjustment issues affecting water access entitlement holders and communities that may arise from reductions in water availability as a result of implementing the National Water Initiative 	ongoing	97	All Parties
<i>Knowledge and capacity building</i>			
<ul style="list-style-type: none"> ▪ Identify the key science priorities to support implementation of the National Water Initiative and where this work is being undertaken. ▪ Implement any necessary measures to ensure the research effort is well coordinated and publicised, and any gaps are addressed. 	ongoing	101(i)	All Parties
	ongoing	101(ii)	All Parties

SCHEDULE B(i): GLOSSARY OF TERMS

The words and phrases that are italicised in this intergovernmental agreement are to be interpreted according to the definitions given below.

consumptive pool – the amount of water resource that can be made available for *consumptive use* in a given water system under the rules of the relevant water plan.

consumptive use – use of water for private benefit consumptive purposes including irrigation, industry, urban and stock and domestic use.

environmental and other public benefit outcomes – environmental and other public benefit outcomes are defined as part of the water planning process, are specified in water plans and may include a number of aspects, including:

- *environmental outcomes*: maintaining ecosystem function (eg. through periodic inundation of floodplain wetlands); biodiversity, water quality; river health targets;
- *other public benefits*: mitigating pollution, public health (eg. limiting noxious algal blooms), indigenous and cultural values, recreation, fisheries, tourism, navigation and amenity values.

Environmental manager - an expertise based function with clearly identified responsibility for the management of environmental water so as to give effect to the environmental objectives of statutory water plans

- the institutional form of the environmental manager will vary from place to place reflecting the scale at which the environmental objectives are set and the degree of active management of environmental water required
- the environmental manager may be a separate body or an existing Basin, catchment or river manager provided that the function is assigned the necessary powers and resources, potential conflicts of interest are minimised, and lines of accountability are clear

environmentally sustainable level of extraction – the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource.

exchange rate – the rate of conversion calculated and agreed to be applied to water to be traded from one trading zone and/or jurisdiction to another.

extraction rate – the rate in terms of unit volume per unit time that water can be drawn from a surface or groundwater system. Used in the NWI in the context of a constraint that might exist due to the impact of exceeding a particular extraction rate at a particular point or within a specified system.

lower bound pricing – the level at which to be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement. Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.

metropolitan – refers to water and wastewater services provided in metropolitan urban areas having in excess of 50,000 connections.

overallocation – refers to situations where with full development of water access entitlements in a particular system, the total volume of water able to be extracted by *entitlement holders* at a given time exceeds the *environmentally sustainable level of extraction* for that system.

overused – refers to situations where the total volume of water actually extracted for consumptive use in a particular system at a given time exceeds the *environmentally sustainable level of extraction* for that system. Overuse may arise in systems that are overallocated, or it may arise in systems where the planned allocation is exceeded due to inadequate monitoring and accounting.

regional natural resource management plans – plans that cover specific regions like those developed under the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality.

reliability – the frequency with which water allocated under a *water access entitlement* is able to be supplied in full. Referred to in some jurisdictions as “high security” and “general security”.

rural and regional – refers to water and wastewater services provided for rural irrigation and industrial users and in regional urban areas with less than 50,000 connections;

sharing delivery capacity – an approach to sharing of an irrigation supply channel capacity (supplemented systems) or a water course capacity (unsupplemented) held by an *entitlement holder* and specified as a percentage share or volumetric supply rate at a particular time.

surface water – water that flows over land and in water courses or artificial channels and is able to be captured and stored and supplemented from dams and reservoirs.

trading zones – zones established to simplify administration of a trade by setting out the known supply source or management arrangements and the physical realities of relevant supply systems within the zone. Trade can occur within and between zones without first having to investigate and establish the details and rules of the system in each zone.

upper bound pricing – the level at which, to avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes (TERs), provision for the cost of asset consumption and cost of capital, the latter being calculated using a weighted average cost of capital WACC.

water access entitlement – a perpetual or ongoing entitlement to exclusive access to a share of water from a specified *consumptive pool* as defined in the relevant *water plan*.

water allocation – the specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water plan.

water irrigation area – the area under control of an individual water service provider (eg. an irrigation corporation, cooperative or trust, or water authority).

water plan – statutory plans for surface and/or ground *water systems*, consistent with the *Regional Natural Resource Management Plans*, developed in consultation with all relevant stakeholders on the basis of best scientific and socio-economic assessment, to provide secure ecological outcomes and resource security for users.

water sensitive urban design – the integration of urban planning with the management, protection and conservation of the urban water cycle, that ensures urban water management is sensitive to natural hydrological and ecological processes.

water system – a system that is hydrologically connected and described at the level desired for management purposes (eg sub-catchment, catchment, basin or drainage division and/or groundwater management unit, sub-aquifer, aquifer, groundwater basin)

water tagging – an accounting approach that allows a traded *water access entitlement* to retain its original characteristics when traded to a new jurisdiction and/or trading zone, rather than being converted into a form issued in the new jurisdiction and/or trading zone.

SCHEDULE B(ii): NATIONAL DEFINITIONS

Recognising the importance of a common lexicon for water use and management, the Parties recognise the desirability of adopting the following words and phrases, and their definitions, in their respective water management frameworks:

environmental and other public benefit outcomes – environmental and other public benefit outcomes are agreed as part of the water planning process, are specified in water plans and may include a number of aspects, including:

- *environmental outcomes*: maintaining ecosystem function (eg. through periodic inundation of floodplain wetlands); biodiversity, water quality; river health targets;
- *other public benefits*: mitigating pollution, public health (eg. limiting noxious algal blooms), indigenous and cultural values, recreation, fisheries, tourism, navigation and amenity values.

overallocation – refers to situations where with full development of water access entitlements in a particular system, the total volume of water able to be extracted by *entitlement holders* at a given time exceeds the *environmentally sustainable level of extraction* for that system.

overused – refers to situations where the total volume of water actually extracted for consumptive use in a particular system at a given time exceeds the *environmentally sustainable level of extraction* for that system. Overuse may arise in systems that are overallocated, or it may arise in systems where the planned allocation is exceeded due to inadequate monitoring and accounting.

reliability – the frequency with which water allocated under a *water access entitlement* is able to be supplied in full. Referred to in some jurisdictions as “high security” and “general security”.

water access entitlement – a perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan.

water allocation – the specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water plan.

SCHEDULE C NATIONAL WATER COMMISSION

The National Water Commission (NWC) will be established as follows.

Institutional Arrangements: The NWC will:

- be established by the Commonwealth as an independent statutory body;
- have the functions and responsibilities as set out below;
- be funded by the Commonwealth Government;
- have up to seven members including a Chair:
 - appointed for up to 3 years and eligible for re-appointment subject to agreement;
 - with expertise in the areas of: audit and evaluation, governance, resource economics, water resource management, freshwater ecology and hydrology; and
 - with the Commonwealth to appoint four members (including the Chair) and States and Territories to appoint three members; and
- have an office to carry out secretariat services for the Commission and to prepare or manage the preparation of draft Commission reports as directed, including:
 - an Executive Director and a small staff appointed by the Commission at its discretion;
 - the ability to make use of staff employed by a Party with the agreement of the relevant Party; and
 - the ability to use consultants.

Role: To provide advice on national water issues and, in particular, to assist with the effective implementation of the National Water Initiative (NWI) Agreement.

In particular, the NWC will provide advice to COAG on the following matters:

- a baseline assessment of water resources and governance arrangements nationally, based on existing work by the Parties and undertaking further work only where required;
- accreditation of State and Territory implementation plans developed for the NWI Agreement by each jurisdiction, in accordance with paragraph 9 of the Agreement;
- commencing in 2006-07, biennial assessments of progress with the NWI Agreement and State and Territory implementation plans, and advice on actions required to better realise the objectives and outcomes of the Agreement:
 - the third biennial assessment in 2010-11 will take the form of a comprehensive review of the Agreement;
- the performance of the water industry against national benchmarks, in areas such as irrigation efficiency, water management costs and water pricing; and
- compliance with any outstanding commitments under the 1994 COAG strategic framework for the efficient and sustainable reform of the Australian water industry;

The Parties agree to work cooperatively with the NWC including through providing open access to relevant officers and timely provision of information necessary to assist the NWC in carrying out its role.

In preparing its advice, the NWC will consider the views of stakeholders. The NWC will provide annual reports of its activities.

All reports of the NWC will be publicly available.

Review of the NWC: In 2010-11, COAG will review the ongoing role and function of the NWC following consideration of its third biennial assessment. A report on the outcome of the review is to be tabled in each House of Parliament by the end of 2011.

**SCHEDULE D: PRINCIPLES FOR REGULATORY APPROVALS FOR WATER
USE AND WORKS**

1. The Parties agree that regulatory approvals enabling water use at a particular site for a particular purpose will:
 - i) be consistent with water legislation and related NRM and planning legislation;
 - ii) be consistent with relevant water plans;
 - iii) take into account environmental, social and economic impacts of use, including on downstream users;
 - iv) clearly state the conditions relating to the approval, including the circumstances and processes relating to variations or terminations of the approval;
 - v) minimise application and compliance costs for applicants;
 - vi) allow for applications to be assessed to a level of detail commensurate with the level of potential impact of the proposed activity;
 - vii) have transparent and contestable processes in place to establish whether a proposed activity is to be approved; and
 - viii) have avenues for appealing approval decisions.
2. The Parties also agree that the authority responsible for regulatory approvals needs to:
 - i) be separate from water users and providers;
 - ii) have the necessary legal authority and resources to monitor and enforce the conditions of a water use or works licence; and
 - iii) have its practices benchmarked periodically with peer authorities in other jurisdictions.

SCHEDULE E: GUIDELINES FOR WATER PLANS AND PLANNING PROCESSES

1. **The following characteristics and components will guide States and Territories in preparing water plans:** Descriptions to include:
 - i) the water source or water sources covered by the plan (ie. its geographic or physical extent);
 - ii) the current health and condition of the system;
 - iii) the risks that could affect the size of the water resource and the allocation of water for consumptive use under the plan, in particular the impact of natural events such as climate change and land use change, or limitations to the state of knowledge underpinning estimates of the resource;
 - iv) the overall objectives of water allocation policies;
 - v) the knowledge base upon which decisions about allocations and requirements for the environment are being made, and an indication of how this base is to be improved during the course of the plan;
 - vi) the uses and users of the water including consideration of indigenous water use;
 - vii) the *environmental and other public benefit outcomes* proposed during the life of the plan, and the water management arrangements required to meet those outcomes;
 - viii) the estimated *reliability* of the water access entitlement and rules on how the consumptive pool is to be dispersed between the different categories of entitlements within the plan;
 - ix) the rates, times and circumstances under which water may be taken from the water sources in the area, or the quantity of water that may be taken from the water sources in the area or delivered through the area; and
 - x) conditions to which entitlements and approvals having effect within the area covered by the plan are to be subject, including monitoring and reporting requirements, minimising impacts on third parties and the environment, and complying with site-use conditions.
2. Where systems are found to be *overallocated* or *overused*, the relevant plan should set out a pathway to correct the *overallocation* or *overuse* (paragraphs 41 to 45 refers).
3. A plan duration should be consistent with the level of knowledge and development of the particular water source; and
4. In the case of ongoing plans, there should be a review process that allows for changes to be made in light of improved knowledge.
5. Further consideration to *include*:
 - i) relevant *regional natural resource management plans* and cross jurisdictional plans, where applicable;
 - ii) an assessment of the level of connectivity between surface (including overland flow) and groundwater systems

- iii) impacts on water users and the environment that the plan may have downstream (including estuaries) or out of its area of coverage, within or across jurisdictions;
 - iv) water interception activities as indicated in paragraphs 52-54;
6. Water planning processes include:
- i) consultation with stakeholders including those within or downstream of the plan area;
 - ii) the application of the best available scientific knowledge and, consistent with the level of knowledge and resource use, socio-economic analyses;
 - iii) adequate opportunity for consumptive use, environmental, cultural, and other public benefit issues to be identified and considered in an open and transparent way;
 - iv) reference to broader regional natural resource management planning processes; and
 - v) consideration of, and synchronisation with, cross-jurisdictional water planning cycles.

SCHEDULE F: GUIDELINES FOR WATER REGISTRIES

The Parties agree that water registers will be established in each State and Territory and will:

1. contain records of all water access entitlements in that jurisdiction, and trades of those entitlements, including their location;
2. be of sufficient standard to achieve the characteristics of secure water access entitlements contained in the Agreement;
3. contain protocols for the protection of third party interests that:
 - (i) require the holder of a registered security interest to be notified prior to any proposed dealings in relation to the water entitlement, and requiring the consent of such interests to any proposed transfers;
 - (ii) allow only authorised dealings;
 - (iii) require the registration of permanent transfers of the water entitlement and encumbrances that affect the entitlement, such as mortgages and other security interests;
 - (iv) enable lenders to procure the registration of their interest independently of the holder of the entitlement (to ensure the rights of the entitlement-holder are sufficiently protected);
 - (v) prioritise competing dealings;
 - (vi) manage time lags between date of lodgement for registration and actual registration of dealings, as such time lags may affect priorities; and
 - (vii) allow for the discharge of the security interest, in conjunction with the transfer of the entitlement to a new registered holder;
 - (viii) ensure that lenders are only affected by a subsequently registered interest where the lender has consented to the subsequent dealing;
 - (ix) assist in the process of identifying water specific or unregistered interests.
4. be administered pursuant to certain procedures and protocols, based on land title office manuals and guidelines that exist in various States and Territories that seek to minimise transaction costs for market participants;
5. be publicly accessible, preferably over the internet, and include information such as the prices of trades and the identity of entitlement holders; and
6. enable resource managers to monitor and accumulate trade and water use volumes accrued under water entitlements in a separate water accounting system.

SCHEDULE G PRINCIPLES FOR TRADING RULES

The Parties agree that water trading rules will be established consistent with the principles below.

1. Water access entitlements may be traded either permanently, through lease arrangements or through other trading options that may evolve over time where water systems are physically shared or hydrologic connections and water supply considerations would permit water trading.
2. All trades should be recorded on a water register (Schedule E refers).
3. Restrictions on extraction, diversion or use of water resulting from a trade can only be used to manage:
 - i) environmental impacts, including impacts on ecosystems that depend on underground water;
 - ii) hydrological, water quality and hydrogeological impacts;
 - iii) delivery constraints;
 - iv) impacts on geographical features (such as river and aquifer integrity); or
 - v) features of major indigenous, cultural heritage or spiritual significance.
4. A trade may be refused on the basis that it is inconsistent with the relevant water plan.
5. Trades must not generally result in sustainable yields being exceeded. That is, trades shall generally not cause an increase in commitments to take water from water sources or parts of water sources or increase seasonal reversals in flow regimes above sustainable levels identified in relevant water plans such that environmental water or water dependent ecosystems are adversely affected;
6. Trades within overallocated water sources (including groundwater sources) may be permitted in some cases subject to conditions to manage long-term impacts on the environment and other users;
7. Where necessary, water authorities will facilitate trade by specifying trading zones and providing related information such as the exchange rates to be applied to trades in water allocations to:
 - i) adjust for the effects of the transfer on hydrology or supply security (transmission losses) or reliability; and
 - ii) reflect transfers between different classes of water sources, unregulated streams, regulated streams, supplemented streams, groundwater systems and licensed runoff harvesting dams.
8. Water trading zones, including groundwater trading zones, should be defined in terms of the ability to change the point of extraction of the water from one place to another, and protection of the environment. The volume of delivery losses in supplemented systems that provide opportunistic environmental flows will be estimated and taken into account when determining the maximum volume of water that may be traded out of a trading zone.
9. Exchange rates will not be used to achieve other outcomes such as to alter the balance between economic use and environmental protection or to reduce overall water use.



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10. Trade in water allocations may occur within common aquifers or surface water flow systems consistent with water plans.
11. Trade from a licensed runoff harvesting dam (ie. not a small farm dam) to a river may occur subject to:
 - i) a reduction in dam capacity consistent with the transferred water entitlement;
 - ii) retention of sufficient capacity to accommodate evaporative and infiltration losses; or
 - iii) conditions specified in water plans to protect the environment.