Final report - Review of Cost Shares for Joint Activities

15 April 2014

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Dear Basin Official Committee Member

REVIEW OF COST SHARES FOR JOINT ACTIVITIES

In accordance with the Terms of Reference for the Review of cost shares for the joint venture, I am pleased to submit to you the Review's final report.

It has had regard to material prepared by the Murray Darling Basin Authority, meetings and discussions with Basin Officials and comments received on the draft report circulated on 24 March 2014.

Yours sincerely

Mike Buckley 15 April 2014

Acknowledgements

I would like to acknowledge and thank all those who have participated in this Review process for the assistance provided and the willingness to respond to my questions and provide comments on earlier drafts on a timely basis.

I would particularly like to thank the officers of the Murray Darling Basin Authority who prepared background material and who undertook the modelling of the cost shares scenarios for me.

Finally, I would like to express my appreciation to Amanda Sichter and Garry Smith who assisted me in this preparing this report. I am, however, responsible for the Report's conclusions, findings and omissions.

Summary and Findings

Summary

i. The joint activities are primarily concerned with the management of the River Murray and the delivery of state water entitlements for NSW, Victoria and South Australian while addressing the consequences of river regulation on the river system.

The scope of the joint activities has expanded to encompass the entire Murray Darling Basin.
 Queensland joined the agreement in 1996 and the ACT in 1998 in recognition of the benefit of jointly undertaking certain natural resource management programs. Queensland estimates that around
 95% of the proposed 2014/15 budget is for Southern system activities or themes.

iii. Cost sharing is an integral component of the Murray Darling Basin Agreement. The River Murray Agreement provided for the costs of investigations and construction of works to be shared equally between NSW, Victoria, South Australia and the Commonwealth governments. The costs of operation and maintenance of assets was shared equally between the three states.

iv. The cost sharing arrangement for River Murray operations was changed in 1998 to take account of the 1994 Council of Australian Governments Water Reform Framework which, among other things, sought to recover the efficient costs of water delivery from users. The States' cost share arrangement for River Murray Operations now takes account of a State's capped water entitlements, river diversion and the assignment of local benefits to certain river structures. Salt interception schemes, however, are primarily funded on a "no-fault" basis of equal shares, with adjustments to cost shares for SIS with identified local benefits.

v. The cost sharing arrangement for the natural resource management activities was not changed in 1998 and still applies an 'equal shares' approach. Queensland and the ACT, however, contribute on an agreed dollar basis.

Findings

vi. The review found that that the cost share arrangement for River Murray Operations is broadly consistent with NWI pricing principles which, among other things, seek to allocate the cost of addressing environmental externalities to water entitlement holders. The cost shares arrangement, however, does not seek to recover a return on capital associated with the joint venture assets.

vii. Modelling work to assess the impact on cost shares of recategorising assets indicates that assigning local benefits to South Australia for the Barrages and to NSW and Victoria for Torrumbarry and Euston Locks while increasing the extent of South Australia's local benefit from Locks 1, 10 and 11 will not substantially change the cost share contributions of NSW or Victoria. The impact on South Australia is more substantial and not consistent with the State's water share.

viii. The Review recommended that any change to the categorisation of river system assets be taken following a detailed engineering study which takes account of the optimal mix of river structures required to deliver states' water entitlements and address the associated externalities

from water extraction and river regulation. This study needs to be guided by the joint activities objective of producing system-wide benefits. The equal shares "no-fault" approach, with adjustments for local benefits, is still the most appropriate for SIS. The recently constructed environmental works and measures have many of the characteristics of SIS, being used to remediate the damage caused by past decisions made without knowledge of the environmental detriment. Consideration should be given to the costs of O&M for the environmental works and measures being shared on an equal "no-fault" basis as applies to SIS.

ix. The cost share arrangements for the natural resource management activities were not previously revised to take account of the requirements of the National Water Initiative. The Review proposes consideration of four principles to be followed when developing natural resource management programs and allocating costs shares to these programs (paragraph 7.7.9). The adoption of these principles would mean a cost share framework which reflects the basis on which Queensland and the ACT currently contribute financially to the joint program activities.

x. The Review also found that there is scope under the NWI to recover water planning and management costs associated with the natural resource management joint activities from water users. This is a decision, however, for jurisdictions, but greater transparency in this matter is consistent with the NWI objective.

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Chapter 1 Introduction

1.1 Introduction

1.1.1 This Review assesses the basis of the Contracting Governments' cost shares for the joint venture activities of the Murray Darling Basin Authority (MDBA). The MDBA manages the joint activities as a service provider for the Contracting Governments in accordance with the Murray-Darling Basin Agreement and the decisions of the Murray Darling Basin Ministerial Council (the Ministerial Council).

1.1.2 The Review is required to develop a cost sharing framework for the joint activities, to provide advice on the consistency with the National Water Initiative (NWI) of the cost sharing arrangements for the Contracting Governments' assets and joint activities, and to make recommendations on any changes to costs sharing arrangements for the Contracting Governments' assets and joint activities, including beneficiary and impactor attribution. The review is required to consider changes in policy or operational environment since these cost sharing arrangements were last reviewed.

1.1.3 The Terms of Reference for the Review are at Attachment A.

1.2 Background

1.2.1 The sharing, management and utilisation of the water resources of the River Murray is almost as old as the Australian Federation. The original River Murray Waters Agreement was signed by the Commonwealth, NSW, Victorian and South Australian governments in 1914.

1.2.2 Cost sharing was an integral component of the original water sharing agreement. The four governments had a shared goal of creating a 'grand scheme of works' to enable economic development. The River Murray Waters Agreement provided for the costs of investigation and construction of works to be shared equally between the four participating governments. The subsequent costs of operation and maintenance of the assets was shared equally between the three states. This arrangement is also set out in the *Water Act 2007* (the Water Act).

1.2.3 The primary focus of the original agreement was the management of the river to allow for the capture, storage and delivery of states' water shares. The interests and concerns of the Contracting Governments have changed over time and particularly since the 1990s with increased consideration being given to river health and the reliability of water supplies.

1.2.4 Today the joint activities of MDBA encompass the management of the River Murray Operations which primarily deal with the delivery of state water entitlements while addressing the consequences of river regulation on the river system. In addition the joint activities also encompass other programs to address Natural Resource Management in the broader basin. A major natural resource management activity is The Living Murray Initiative which was established in 2002. This program was further enhanced in 2006.

1.2.5 The institutional and governance arrangements covering the water resources of the Murray Darling Basin have developed to meet changing economic, environmental and societal needs of the basin communities. The current governance arrangements are set out in the Water Act which establishes a Commonwealth – State cooperative arrangement for the management of basin water

resources operating under Commonwealth law. This act created new institutional and governance arrangements which, among other things, gave the Minister for the Environment the role of making water charge rules.

1.2.6 The water charge rules are administered by the Australian Competition and Consumer Commission (ACCC) or accredited state regulatory bodies. The water infrastructure pricing principles established by the ACCC drew on the 2004 Council of Australian Government National Water Initiative which sought to promote economically efficient and sustainable use of water resources, water infrastructure assets and government resources devoted to the management of water resources.

1.3 Structure of this report

1.3.1 The report is structured as follows:

Chapter 2 Provides an overview of the MDBA joint activities highlighting differences between the activities which rely on the assets managed by the MDBA and other natural resource management programs operated by the MDBA.

Chapter 3 Provides an overview of the development of the costs share arrangements for the joint programs including the basis for the current cost shares, which were last reviewed in 2006.

Chapter 4 Provides an overview of processes which establish the MDBA budget for the delivery of the joint activities as required by the Water Act.

Chapter 5 Provides an overview of the requirements of the NWI Pricing Principles and assesses the consistency of the MDBA joint activities cost share arrangements with those principles.

Chapter 6 Provides a summary of key issues identified by Contracting Governments with the current cost share framework in the light of recent policy and operational changes resulting from the introduction of the Basin Plan.

Chapter 7 This chapter provides a framework to be applied to the assessment of assets employed for the delivery of system wide benefits under River Murray Operations and the sharing of costs associated with the delivery of those activities.

In addition it identifies principles to be applied when establishing and financing natural resource management programs under the joint programs administered by the MDBA. These principles are intended to take account of the impact of the Basin Plan on the roles and responsibilities of Contracting Governments.

1.4 Conduct of the Review

1.4.1 The terms of reference also required a closed door discussions with jurisdictions to reach agreement on any change to beneficiary and impactor attribution for the river system assets and other joint programs.

1.4.2 In preparing this report the Review Secretariat received comment and feedback from Basin Officials in all jurisdictions and from the Murray Darling Basin Authority. As part of this process a round table with officials was held on 11 March and a further phone hook-up was conducted on 9 April.

1.5 Other Reviews

1.5.1 This review notes that a further three reviews which address issues dealt with in this Review are in progress. They are: Cost Efficiency Review of River Murray Operations, General Review of Salinity Management and the Transition of the Living Murray Program. Consideration of the findings and conclusions of this Review will need to take account of the outcomes of those reviews.

Chapter 2 Overview of MDBA Joint Activities

2.1 Overview of MDBA Joint Activities

2.1.1 This chapter presents an overview of the joint programs/activities managed by the MDBA. In addition to identifying the key activities or function of the program the intent is to distinguish between River Murray Operations programs and Natural Resource Management activities, their links with the Basin Plan and to establish a basis for determining principles for sharing the costs of these activities.

2.1.2 The joint activities consist of River Murray Operations (RMO), The Living Murray Initiative (TLM), and other joint programs, generally named as Natural Resource Management (NRM) activities (or may alternatively be referred to as non-River Murray activities). The core of joint activities are River Murray Operations (the operation of River Murray assets for the delivery of state water shares), which has evolved from the work of the River Murray Commission, through the Murray Darling Basin Commission to the MDBA today. The Living Murray programs were added in 2002 and will lead to an increase in the asset base operated by RMO (TLM environmental works and measures assets at the icon sites), as well as separate funding for the management of the TLM water portfolio. A suite of other programs were operated under the over-arching NRM banner, including the Basin Salinity Management Strategy (BSMS), the Sustainable Rivers Audit, the Native Fish Strategy and implementation of the Cap on river diversions. Many of the NRM programs were scaled back or discontinued after NSW reduced its contribution in 2012/13 and only those that are still ongoing are discussed below. The MDBA joint activities have administrative costs and these costs are met on a shared basis.

2.2 River Murray Operations

2.2.1 The majority of the joint funding is provided by the Contracting Governments to run the River Murray system, the water storage assets (both major and minor) and structures that allow the capture, storage and delivery of state water shares and the monitoring of the flow and quality of water in the river (the hydrometric network), as well as the overheads for undertaking this work. Funding under River Murray Operations also covers the cost of operating a number of Salt Interception Schemes (SIS) along the River Murray System and the environmental works and measures that were constructed under The Living Murray Initiative to maximise the effective use of the water portfolio held by the Basin States in improving the environmental health of the six icon sites. There are also a number of incidental programs, such as the Riparian Program, which are programs that seek to restore damage caused specifically by the operation of RMO assets (such as river bank erosion) and Murray Mouth Sand Dredging that are administered under the RMO joint activities budget.

2.2.2 The River Murray Water Office management provides the administrative backing to the River Murray Operations, including asset management, modelling, program management of the hydrometric network and other administrative tasks.

2.3 Water storage and distribution assets

2.3.1 The river system operated by the MDBA has a number of water storage and management assets that extend from Dartmouth Dam to the Murray Mouth and also incorporate the Menindee Lakes and Lower Darling River. The assets were constructed for a range of reasons; from water

storage and supply for the large structures such as Dartmouth and Hume Dams, navigation for the majority of the locks and regulation of the Lower Lakes environment and the maintenance of a fresh water storage in the case of the Barrages. The use of the assets has evolved over time as the use of the river has changed. As river operations changed, reviews have been undertaken that determined the assets that provided whole-of-system benefits (even if significant local benefits were also realised). Assets that provided only local benefits were transferred to the ownership of the state those assets were located in. The assets that were transferred to state ownership consisted only of the Maude and Redbank Weirs on the Murrumbidgee. The remaining assets are now managed by the MDBA under the joint activities budget and have been further classified into two categories: Category 1 assets are classified as those essential to whole of river management and Category 2 assets are those that are considered to provide significant local benefits as well as some whole-of-system functions.

2.3.2 Category 1 assets have a primary purpose of storing and supplying state water shares and consist of Hume Dam, Dartmouth Dam, Lake Victoria, Menindee Lakes, Lock 15, Lock 9, Yarrawonga Weir, Torrumbarry Weir and the Murray Mouth Barrages. Dartmouth Dam operates as a long-term carry-over storage and drought reserve for RMO, while Hume Dam supplies water for irrigation, riparian use, town water supply, and is operated in conjunction with other RMO structures to supply water entitlements to South Australia. Hydroelectric power is generated from the water released from Hume and Dartmouth; there is a small entitlement specifically for hydropower releases from Dartmouth. Lake Victoria provides storage for the water supply to South Australia, salinity management benefits and re-regulation of water released from Hume Dam and operates in conjunction with Lock 9. Menindee Lakes, which are leased by the MDBA from NSW, are similarly important in providing water supply to South Australia.

2.3.3 Lock 15 (Euston) supplies water to Victorian and NSW irrigators and urban supplies. Yarrawonga Weir is vital to re-regulation of freshes from the Ovens and Kiewa rivers, and to protect the Barmah-Millewa Forest from unseasonal flooding and rainfall rejections. It is also the point of greatest diversion for irrigation purposes and Torrumbarry Weir provides a pool for irrigation offtake including via the National Channel (not an MDBA asset) and to the new environmental works which deliver water to the Gunbower-Koondrook-Perricoota Forests and Kerang Lakes. The Murray Mouth Barrages maintain a freshwater pool at the Murray Mouth and are designed to prevent saltwater incursions which, in times of low flow, could extend many kilometres up the Murray, affecting water supplies for irrigation, urban and industrial purposes (including to Adelaide and regional South Australia). The provision of a stable freshwater pool below Lock 1 has led to the growth of an irrigation industry in the area and, in times of severe drought, provides Critical Human Water Needs, supplying up to 90% of Adelaide's water supply.

2.3.4 All other locks and weirs are Category 2 and are considered to provide considerable local benefits, as well as some system-wide benefits. Locks 10 & 11 (above the junction with the Darling River) are considered to provide local benefits to NSW and Victoria equally, while Locks 1 to 8 have their local benefits attributed to South Australia. The locks and weirs provide a range of benefits such as navigation and tourism, but also create pools for local offtake, ensure the regulated run of water down the river and are increasingly used to provide efficient and cost-effective gravity-fed environmental water inputs into environmental works.

2.4 Hydrometric Network

2.4.1 The hydrometric network consists of over 200 gauges predominantly within the River Murray and Lower Darling systems that measure the flow and/or quality of the water. A typical hydrometric site consist of a secure shed, generally located above the 1 in 100 year flood level, containing an electronic logger, measurement sensors, power supply and communication devices such as cellular or PSTN modems. The measurement sensors generally include water level, salinity and temperature.

2.4.2 Water data collected from these sites are used for variety of purposes ranging from day to day river and flood operations activities, water resource assessments, water accounting and modelling. MDBA continuously receive and monitors real time data from critical river and flood operations sites.

2.4.3 The hydrometric network is essential to the distribution of state water shares and for monitoring water quality and the network is treated as a Category 1 asset.

2.5 Salt Interception Schemes

2.5.1 Rising salinity in the Murray-Darling Basin became an increasing problem as the river was regulated, land cleared, more water was extracted and irrigation schemes expanded. This led to the development of a number of Salt Interception Schemes, starting in the 1960s, both within the framework of the joint activities and by individual states. Some of the schemes developed by states have since been incorporated into the joint activities, some are partially funded by the joint activities and partly by the state that primarily benefits from the scheme and some remain managed outside the MDBA.

2.5.2 SIS are large-scale pumping schemes consisting of a series of bores, pumps, pipelines and salt management basins. In most cases, a bore and pump system extracts saline groundwater and pumps it to salt management basins. These schemes divert saline groundwater and drainage water away from the river, reducing the salt load that would otherwise have entered the Murray or Darling, and their tributaries.

2.5.3 When the Murray-Darling Basin Commission began to assess SIS for incorporation into the joint activities, it was determined that they should be treated on a "no-fault" basis, due to the difficulty in determining impactor and beneficiary, particularly when saline discharge was often a result of decisions taken prior to there being any appreciation of the ultimate salinity consequences (the legacy of history). As a result of this no-fault approach, SIS were placed in the most cost-effective position (such as where saline groundwater is most easily pumped) and States became accountable for salinity impacts of any new water use decisions made after the Salinity and Drainage (S&D) strategy baseline date. Therefore, for the majority of schemes, costs have been divided equally between the three states.

2.5.4 For a small number of schemes that were constructed by states prior to their inclusion in the joint activities or where the some of the benefits offset the S&D baseline, or where schemes have been expanded to benefit the wider joint programs, the cost shares are adjusted to take into account the adjusted distribution of benefits.

2.6 The Living Murray Environmental Works and Measures

2.6.1 TLM is a program started in 2002 that has a large portfolio of water entitlements (approximately 500GL in long-term Cap equivalent terms), which are managed to maximise the environmental benefits to six icon sites on the River Murray. The majority of TLM work is undertaken under its own program within the joint activities budget, but the planning and construction, of environmental works is undertaken by RMO and budgeted accordingly. A decision has not yet been made on the operation and maintenance of environmental works. The other TLM functions are addressed later in this chapter.

2.6.2 The six Living Murray icon sites are:

- Barmah-Millewa Forest
- Gunbower, Koondrook-Perricoota Forest
- Hattah Lakes
- Chowilla, Lindsay-Wallpolla floodplain
- Murray Mouth, Coorong, Lower Lakes
- River Murray Channel

2.6.3 A number of environmental works were built under the TLM program, to maximise the effective use of TLM water. Initial construction of TLM environmental works, budgeted up to \$150m, was to be funded by contributions from the Commonwealth, NSW, Vic and SA. At agreed contribution rates, however, construction would have taken until about 2020. In 2006, the Australian Government invested \$500m in the MDBC to accelerate and increase a range of programs, including TLM environmental works, navigable pass upgrades, salt interception schemes and dam safety upgrades. The investment allowed TLM environmental works to be completed within 5 years and expenditure on them to be increased from \$150m to \$275m. In addition, interest on the investment has allowed the total expenditure on these works to be further increased to meet cost over-runs. No agreement has yet been reached on cost shares for any potential future renewal or upgrading expenditure on these assets.

2.6.4 The TLM works ranged from major projects including the construction of channels and regulators at Gunbower, Koondrook-Perricoota Forest, new weirs, levees and regulator structures at Chowilla, Hattah Lakes and Lindsay-Wallpolla, to the construction of the "sea to Hume fish passage" where fish passages were added to existing weirs, locks and structures.

2.6.5 The use of TLM water has been factored into the determination of the Sustainable Diversion Limits set by the Basin Plan, whereas the use of the environmental works can be considered as an offset in the SDL adjustment mechanism. The environmental works are part of the River Murray Operations budget, will be incorporated into the Asset Management Plan and will require ongoing operation and maintenance.

2.6.6 The majority of TLM environmental works will be commissioned during 2014.

2.7 River Murray Environment

2.7.1 A small number of environmental restoration programs are undertaken by RMO, under the heading River Murray Environment. The activities under this program are specifically undertaken to restore environmental damage that is caused by river operations, such as river bank erosion and the

health of the river and forest flood plains, which have been impacted by the changing flow regimes resulting from the increasing numbers of irrigation schemes. This work includes operation and maintenance of forest regulators (which contain flows within the main river channel and avoid unintended forest flooding), river bank restoration and other management works to address the range of impacts on the environments of changed flow regimes, including cultural heritage impacts.

2.8 Murray Mouth Sand Pumping

2.8.1 The NSW, Victorian, SA and Commonwealth governments made a commitment to maintain connectivity between the Murray and the sea during dry period by dredging sand at the Murray Mouth, with the costs shared on a "no-fault" basis. The MDBA manages this, with high costs incurred during drought period, where the pumping was required to keep the Murray Mouth from closing. Much lower costs may be incurred during periods of high flow, when dredging is not required, but ongoing monitoring is undertaken. The Basin Plan is intended to address the causes of the closing of the Murray Mouth (see Basin Plan 8.06 (3)(c) and (d)) and the need for dredging may diminish or cease in the future, but this has not yet been confirmed.

2.9 The Living Murray

2.9.1 While the environmental works assets of the TLM are managed by the River Murray Operations area in the MDBA as discussed at 2.6 above, the water portfolio is managed separately from the construction, operation and maintenance of the environmental works. TLM was set up by the Ministerial Council in 2002 as a long-term river restoration program with the stated aim of restoring a healthy, working river system. TLM assets consist of a portfolio of water currently valued at around \$500 million, comprising long-term Cap equivalent (LTCE) 479.9 gigalitres (GL), consisting of LTCE 217.9 GL of NSW titles, 219.5 GL of Victorian titles and 42.5 GL of SA titles. The assets are controlled jointly by the Commonwealth government (20%), the governments of NSW, Victoria and SA (26.67 % each) and the ACT (currently 0%). TLM activities managed under the joint activities budget are expected to cost around \$14 million in 2014 (this does not include the costs of the TLM environmental works, which are discussed separately above at section 2.6).

2.10 TLM Planning

2.10.1 The planning of the environmental water portfolio held under TLM is managed by MDBA in consultation with partner Governments. Their role includes icon site planning and management, planning and deciding use of TLM water and TLM modelling. This work is undertaken to determine the best use of the TLM water portfolio in maximising the environmental returns at the icon sites.

2.11 TLM Delivery

2.11.1 Currently, the delivery of TLM water is coordinated by the MDBA, and they manage the TLM portfolio and delivery charges. The MDBA also pays from the joint programs budget, the costs of delivering the water including fixed and variable charges relevant to the water licences now held by TLM. It should be noted that, since the NSW budget reduction, MDBA has not paid the NSW portion of TLM delivery charges.

2.12 TLM Monitoring

2.12.1 As an adjunct to the management of TLM water planning and delivery, the MDBA undertakes a range of work in monitoring the condition of the TLM Icon Sites, as well as intervention and risk compliance monitoring and program management. It should be noted that, since the NSW

budget reduction, joint funds have not supported any such monitoring on any of the TLM icon sites in NSW.

2.13 Natural Resource Management

2.13.1 A number of programs are undertaken under the joint activities budget. The MDBA is mandated, by the Murray-Darling Basin Agreement to undertake some of these programs; these programs are discussed under paragraphs 2.14, 2.15 and 2.16. All of the Natural Resource Management programs are intended to address natural resources issues of the Basin, where it is thought that a jointly funded program will provide Basin-wide benefits.

2.14 Water Quality and Salinity Management

2.14.1 The MDBA is responsible, under the Murray-Darling Basin Agreement, for the implementation of the Basin Salinity Management Strategy (BSMS), which is intended to meet certain salinity targets, with an emphasis on joint works and measures (Schedule B). This requires the MDBA to develop policy recommendations for the consideration of the Murray-Darling Basin Ministerial Council for meeting the targets set out under the BSMS, to review the BSMS on a regular basis and to assess end-of-valley targets at least every five years. The MDBA also needs to maintain salinity registers, report annually on the implementation of the BSMS, undertake audit and compliance work and program management.

2.15 Water Markets and Interstate Trade

2.15.1 The MDBA is required to co-ordinate the transfer of traded entitlements to water between States and between valleys and to set out principles and protocols for such transfers (Schedule D). The MDBA adjusts state shares to reflect interstate entitlement and allocation trades and audit those trades. The MDBA is currently undertaking a review of Schedule D to ensure its consistency with the trading rules under the Basin Plan.

2.16 Cap implementation

2.16.1 MDBA was required, under Schedule E to the Agreement, to undertake a range of tasks to implement the Cap on diversions, including auditing, monitoring and reporting. These tasks have now been completed.

2.17 TLM Indigenous Partnerships

2.17.1 The Murray Lower Darling River Indigenous Nations (MLDRIN) consultation group was set up during the initial stages of the TLM project and remains the MDBA's main consultation group for cultural heritage issues in the southern connected system. MDBA joint activities provide funding to MLDRIN to undertake their meetings. Joint program funding is also used for state indigenous facilitators and program management for indigenous engagement for issues relating to RMO or TLM or other joint activities that require cultural heritage issues to be addressed.

2.18 River Murray Health

2.18.1 Prior to the reduction of the NSW budget, the MDBA ran a number of programs for monitoring the health of the River Murray, including the Sustainable River Audit and the Native Fish Strategy. These programs have now been severely reduced in size and scope and only a small number of programs are undertaken by the MDBA to monitor and evaluate River Murray health. These currently include biological monitoring of the River Murray and Mitta Mitta for water quality,

several small projects for managing pest fish such as carp and tilapia and small amounts of funding to assist the management of demonstration reaches.

2.19 Environmental Monitoring and Evaluation

2.19.1 The MDBA undertakes a small program of monitoring and evaluation, to assess the results of programs and activities. While these programs do not duplicate the monitoring and evaluation undertaken under the Basin Plan, there may be the capacity to integrate the two programs closely to maximise system-wide benefits.

2.20 Murray-Darling Freshwater Research Centre Core Contribution

2.20.1 The Murray-Darling Freshwater Research Centre (MDFRC) has undertaken a range of projects for the MDBA in the past, primarily for the purpose of assessing environmental health in the River Murray. To maintain sufficient funding to ensure the MDFRC can continue to provide services of benefit to the joint governments, the MDBA has provided a core contribution to the MDFRC in 2013/14 which is not attached to any particular project.

2.21 Secretariat Services

2.21.1 The revised 2008 Agreement established two bodies, the Murray-Darling Basin Ministerial Council and the Basin Officials Committee, that work with the MDBA to coordinate joint activities. The MDBA is required to provide secretariat services to these two bodies and other high level committees established to support the joint programs, and these services are funded by the joint activities budget.

2.22 Corporate Overheads

2.22.1 The joint activities budget also covers the corporate overheads required to support the RMO, TLM and NRM functions, including information technology, financial and human resource management.

Chapter 3 Determination of cost share allocations for joint activities

3.1 Determination of cost share allocations

3.1.1 The sharing, management and utilisation of the waters of the River Murray system has always been a vital foundation stone supporting the settlement and economic development of the Murray –Darling basin. Underpinning this compact was an understanding that costs needed to be shared.

3.2 Initial cost sharing

3.2.1 The original River Murray Waters Agreement was signed by the Commonwealth, NSW, Victorian and South Australian governments in 1914, and then came in to effect in November 1915 when it was ratified by Acts of Parliament passed simultaneously by the Commonwealth and the three States.

3.2.2 Prior to 1914 there had been 60 years of political machinations in the form of conferences, Royal Commissions and inquiries, however the severe drought from 1897 to 1902 was the catalyst that led to agreement between the Commonwealth and NSW, Victorian and South Australian governments. In essence, the Agreement divided the available surface waters of the upper catchment of the River Murray (upstream of Doctors Point near Albury) equally between NSW and Victoria, attributed inflows from the tributaries to the State in which they originated, provided a monthly water entitlement to South Australia, and approved the construction of infrastructure and management of the River Murray for water supply and navigation. By the time agreement was finally reached navigation by paddle steamers for cargo transportation was already on the wane. The focus of management activity turned increasingly to water supply activities, which were later supplemented with water quality management responsibilities.

3.2.3 Cost sharing was an integral component of the original water sharing agreement. The four governments had a shared goal of creating a "grand scheme of works" to enable economic development. The River Murray Waters Agreement provided for the costs of investigation and construction of works to be shared equally between the four participating governments. The subsequent costs of operation and maintenance of the assets was shared equally between the three states. These cost sharing arrangements continued essentially unchanged until 1998, although the scope of assets and activities to which they were applied had grown appreciably since the 1915 agreement.

3.2.4 Since joining the Agreement, Qld (1996) and the ACT (1998) have contributed to some of the costs of the MDBA in recognition of the benefit of joint NRM programs and activities to their jurisdictions. These have been negotiated on a fixed dollar basis rather than as an agreed share of contributions.

3.3 1998 application of COAG pricing principles

3.3.1 In 1994, the Council of Australian Governments (COAG) agreed to a Water Reform Framework as part of its Competition Policy Reforms of the Australian economy. An important component of the 1994 COAG water reforms was a commitment to move towards consumptionbased, full cost recovery pricing for water services to support a sustainable water industry. Specifically, for the MDBC, there was agreement to: "the Murray–Darling Basin Ministerial Council putting in place arrangements so that, out of charges for water, funds for the future maintenance, refurbishment and/or upgrading of the headworks and other structures under the Commission's control be provided"¹

3.3.2 In 1998, the then MDBC agreed to cost sharing arrangements that sought to apply these principles to the MDBC's activities, within the limitations of the MDB Agreement, which was still based on sharing of the actual annual recurrent and capital costs on a cash basis between the parties. The key reform was to move away from equal sharing of costs to an arrangement that included greater consideration of the relative consumption of the services provided by the MDBC.

3.3.3 For the key River Murray management activities, this resulted in cost sharing for key assets and activities being determined based on the relative benefit derived from services including:

- Access to secure water entitlements (reflected through the LTCE for each state),
- Consumption of water (as reflected through annual diversions),
- Environmental and resource management services including salinity mitigation,
- Other services provided by the assets, which included:
 - Navigation,
 - Recreation and tourism,
 - Regulated weir pools for water extraction and suppression of groundwater inflows.

3.3.4 The application of these cost sharing principles is discussed in more details in Section 3.6, below.

3.4 2006 review of cost shares

3.4.1 In 2006, aspects of the cost shares were reviewed again. The principles established during the 1998 review were not amended, but given the changes in annual diversions resulting from the Millennium drought (which was still in progress at that time) and changes in the program mix, the application of these principles resulted in some changes to the cost shares between the states. The review considered fixed dollar amounts as a result of the Commonwealth's contribution of \$500 million to TLM, but the cost shares remained as percentages after the review.

3.5 Cost sharing parameters

3.5.1 As noted previously, the cost sharing parameters adopted in 1998 sought to reflect some measure of the benefits gained by jurisdictions from each assets (or activity). The primary benefits were associated with works that enabled access to secure water supplies and delivery of state water shares, together with those works that addressed the impact of river regulation activities. Other benefits associated with navigation and recreation etc. were also identified. The nature of the parameters adopted in 1998 to support cost sharing is described below.

¹ The Council of Australian Governments' water reform framework - extracts from Council of Australian Governments: Hobart, 25 February 1994 Communiqué – accessed at http://www.environment.gov.au/resource/council-australian-governments-water-reform-framework

Access to secure water entitlements

3.5.2 In 1995, the Murray-Darling Basin Ministerial Council considered the implications of the continuing trend of increased water diversions observed across the basin since the 1950s. The key risks of continued increases in diversions were increasing, (serious) impacts on river health and the potential for reductions in the reliability of water supplies to existing users, which represented a significant economic risk.

3.5.3 The Ministerial Council agreed to implement a Cap on diversions, which was designed to prevent any further increases in the level of diversion from the Basin's rivers. The Cap was defined as the *"the volume of water would have been diverted under the 1993/94 levels of development"*². This effectively established an upper limit on the volume of water that could be diverted by each state or territory in the Basin. The Cap is not the same fixed volume in any year, nor was the actual volume of water diverted in 1993/94. The Cap is a climate adjusted Cap, and the Cap volume for any given year is the volume of water that would have been diverted with the infrastructure that existed in 1993/94 and the level of irrigation development that existed in 1993/94, under the climate conditions (rainfall, temperature, river flows etc.) that existed in that actual year under consideration.

3.5.4 Independently audited computer models have been developed to calculate the Cap volume for each state annually. These models have also been used to calculate the Cap volumes for each state with the 1993/94 levels of infrastructure and development, and assuming a repeat of the last 100 year of climatic conditions. This gives a long-term sequence of annual climate adjusted cap volumes which can be used to calculate the long-term average annual access to water to water that each state would be entitled to under the Cap rules. This is referred to as the LTCE for each state.

3.5.5 The LTCE for each state sourced from the River Murray system are shown in the Table 3.1. These volumes were used as the basis for the 2006 review of cost shares.

	NSW	VIC	SA	Total
Entitlement (GL)	1926	1652	718	4296
% share	45%	38%	17%	100%

 Table 3.1: Long-term average capped state entitlements from the River Murray system (as at June 2005)

3.5.6 The volume of capped entitlements does not simply represent the share of the Murray system resources available to each state. Rather, it represents the combination of the resources available to each state and the manner in which each state chose to develop and exploit those resources over the 80 years following the signing of the River Murray Waters Agreement until the decision to cap diversions was taken in 1995.

3.5.7 The LTCE best define each state's average rights to access the shared resources of the River Murray system, and therefore are the basis of this cost sharing parameter.

² These arrangements for the Cap applied to SA, NSW and VIC. Qld had only commenced significant irrigation developments in the 1980s, and so special arrangements were agreed to establish a cap for Qld that took account of their limited historic use. Similar special capping arrangements were also approved for the ACT. These arrangements did not drive their agreed contributions.

Diversions

3.5.8 Whilst the LTCE establishes a measure of the long-term access to water, the actual diversions that occur in any year may be different to both the long-term and annual Cap volumes. For example, returns for various irrigation commodities on world markets can mean that water demands in a particular year may be higher or lower than the Cap. The Cap implementation arrangements also track cumulative annual Cap volumes and cumulative actual use for each state. Over use against the Cap target in one year can be balanced out by under use against targets in another year.

3.5.9 The average diversions from the regulated River Murray system over a five year period by each state are used to provide a measure of the extent to which each state actually exercised their long-term water access entitlements. Averaging diversions over a five year period smooths out the annual variability, so that the cost shares follow a smoother trajectory.

3.5.10 The average diversions over the period 2000/01 – 2004/05, which were used as the basis for the 2006 review of cost shares are shown in the Table 3.2. Diversions from unregulated reaches of the River Murray system are not included, as they do not utilise RMO assets.

	NSW	VIC	SA	Total
Average diversions (GL/yr)	1519	1631	653	3803
% share	40%	43%	17%	100%

 Table 3.2: Average annual regulated Murray diversion (2000/01 - 2004/05)

Other services provided by locks and weirs

3.5.11 The primary purpose of major storages operated by the MDBA is the harvesting, storage and supply of state water shares. The network of locks and weirs operated by the MDBA perform a range of different functions. Some structures support water harvesting and storage. The key example of this role is Lock 9, which enables flows in the River Murray downstream of the Darling junction to be diverted and stored in Lake Victoria. Other weirs including Torrumbarry Weir and Yarrawonga Weir enable the diversion of state water shares into major distribution channels to supply large irrigation districts.

3.5.12 Many of the locks and weirs in the lower Murray also provide more localised benefits. An analysis undertaken in 1996 as part of cost sharing studies which led to the 1998 cost shares agreement identified the following services provided by locks and weirs:

- Navigation (through provision of constant pool levels and locks for boat passage),
- Recreation and tourism (based on reliable pool levels),
- \circ $\;$ Regulated weir pools for water extraction and suppression of groundwater inflows.

3.5.13 Navigation and recreation were assessed as providing general public benefits, whilst the provision of stable pool levels to enable pumping by local water users and suppression of saline groundwater inflows were seen as specifically benefiting local water users. The distribution of these benefits, as assessed in 1996, is shown in Table 3.3.

Table 3.3: 1996 Lower Murray locks and weirs benefit assessment

Service type	SA (Locks 1-6)	NSW/VIC (Locks 7, 8, 10, 11)
Public benefit		
Navigation	33%	35%
Recreation	<u>14%</u>	<u>19%</u>
Total	47%	54%
Specific benefits		
Salinity suppression	10%	15%
Maintain pool	<u>43%</u>	<u>31%</u>
Total	53%	46%

Source: MDBC Meeting 56 – Agenda Item 16, River Murray Water – Review of Application of Cost Sharing Principles, 12 December 2000.

3.5.14 This analysis led to the adoption of 50% of the cost share being directed to specific (or local) beneficiaries and the other 50% being distributed amongst all parties to reflect the general public benefits and the obligation to restore in-river values affected by river regulation. A case could be made that some of the navigation benefits are private in nature, but it is noted that freedom of public movement has generally been regarded as a public benefit in Australia (T Slatyer, pers. comm.).

3.6 Cost sharing principles for specific assets and activities

3.6.1 The overall cost shares determined for each jurisdiction are the result of applying the cost share parameters and agreed weightings to the program of activities proposed to be funded.

3.6.2 The current cost sharing for joint program activities were developed at a specific program or asset level, and have been in place without significant change since 2006.

3.6.3 As noted earlier, there are two major classes of joint programs, River Murray Operations and non-River Murray programs. The cost sharing principles for each of the joint programs are described below.

River Murray Operations

3.6.4 This program is concerned with activities to plan and direct river operations to deliver state water shares, and managing the asset renewal and maintenance programs in partnership with the State Constructing Authorities. The program is divided into a number of sub-programs.

3.6.5 Different cost sharing arrangements may also apply for the same asset in relation to operations and maintenance cost compared to capital costs. This is a result of the foundation principles of the first River Murray Waters Agreement, where the Commonwealth government committed to contribute towards the cost of creating the assets, but the states were responsible of meeting the full cost of their operation and maintenance.

3.6.6 The cost sharing principles for both operations and maintenance (O&M, which is sometimes also referred to as recurrent) costs and for investigations and construction (I&C) costs for RMO

activities are described in the following sections. The activities covered by each of these expenditure classifications are defined as follows:

- Operations operating the asset to deliver the intended service;
- Maintenance work undertaken to ensure the asset remains fit for purpose and achieves its design life. This includes:
 - o routine maintenance maintenance undertaken on a regular (usually annual) basis
 - planned maintenance maintenance undertaken on a cyclic or infrequent basis often entailing one-off intervention to ensure the asset remains fit for purpose (e.g. a major repainting of a steel structure)
- Investigations and construction new work to extend the design life of the asset, or increase the assets functionality. It should be noted that investigation may or may not lead to construction.

i) River Murray structures

The MDBA assets have been allocated into categories for the purposes of cost sharing. These categories are described below, together with the cost sharing principle adopted in 1998:

a. Category 1a:

The major water storages upstream of Murrumbidgee Junction, which are essential to system wide water delivery management.

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	 70% of costs share total capped Murr 30% of costs share 5 year average Mu 	ed on basis of each state ay system entitlements. ed on basis of each state irray system diversions.	's percentage shares of 's percentage shares of
I&C	25%	Balance of I&C cost sha	ared between states on s	same basis as O&M

Table 3.4: Cost sharing principles - Category 1a assets

b. Category 1b:

The major water storages downstream of Murrumbidgee Junction, which are essential to system wide water delivery management. The Barrages at the Murray mouth are also included in the Category 1b assets, on the basis that they were installed as part of the assets required to address the impacts of river regulation.

Table 3.5: Cost sharing principles - Category 1b assets

Cost type	C'wlth	NSW	Vic	SA
O&M	0%	 70% of costs share total capped Murr 30% of costs share 5 year average Mu 	ed on basis of each state ay system entitlements. ed on basis of each state irray system diversions.	's percentage shares of 's percentage shares of
I&C	25%	Balance of I&C cost sha	ared between states on s	same basis as O&M

c. Category 2a:

Locks and weirs that provide local benefits in addition to serving a whole of river function, where NSW and Victoria are the local beneficiaries (Locks 10 and 11).

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	 50% of costs share total capped Murr public benefits). 50% of costs share local/specific benefits 	ed on basis of each state' ay system entitlement (r ed equally by NSW and V efits)	's percentage shares of reflecting general ic (reflecting
I&C	25%	Balance of I&C cost sha	ared between states on s	ame basis as O&M

Table 3.6: 0	Cost sharing	principles -	Category	2a assets
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d. Category 2b

Locks and weirs that provide local benefits in addition to serving a whole of river function, where South Australia is the agreed local beneficiary (Locks 1-8).

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	 50% of costs share total capped Murr public benefits). 50% of costs met b 	ed on basis of each state' ay system entitlement (r by SA (reflecting local/sp	s percentage shares of eflecting general ecific benefits)
I&C	25%	Balance of I&C cost sha	ared between states on s	ame basis as O&M

Table 3.7: Cost sharing principles - Category 2b assets

ii) Salt interception schemes

Salt interception schemes have been built to address the impacts of rising river salinity levels. Since the adoption of a basin Salinity and Drainage Strategy in 1988, jurisdictions have invested in the most cost effective schemes to meet agreed targets, regardless of location. Some schemes that existed prior to the S&D strategy were also expanded or enhanced as joint schemes, so there may be a specific component of state contribution to reflect the prebaseline state salt interception commitment in addition to the "standard" cost sharing component for the joint program SIS component of the scheme.

Table 3.8: Cost sharing principles - Salt interception schemes

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	Costs shared equally between all states		
I&C	25%	Balance of I&C cost shared between states on same basis as O&M		

iii) Other RMO support functions.

a. Hydrometric Network.

River gauging and water quality monitoring installations collect enable the collection

of real time data on river levels, flows, storage levels and water quality that is essential to the management of the river system and accounting for state water shares.

b. River channel management and forest water management

River bank restoration and other management works address a range of impacts on the environment of changed flow regimes, including cultural heritage impacts. This activity also includes the management of forest regulators designed to control unwanted flows into native forests and to reduce regulated delivery losses.

Table 3.9:	Cost sharing	principles -	other RMC	O support functions	

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	 70% of costs shared capped Murray syst 30% of costs shared year average Murra 	on basis of each state's p em entitlements. on basis of each state's p y system diversions.	ercentage shares of total ercentage shares of 5
I&C	25%	Balance of I&C cost shared between states on same basis as O&M		

NB: Cost share principle is the same as for Category 1 assets

iv) Murray mouth connectivity

Sand dredging at the Murray Mouth to maintain connectivity between the Murray and the sea during dry periods, including monitoring of the condition of the Mouth.

Table 3.10: Cost sharing principle - Murray mouth connectivity

Cost type	C'wlth	NSW	Vic	SA
I&C	Treated as "no-fault", costs are shared equally between states and C'with			

v) Environmental works and measures

The Living Murray (TLM) environmental works have been built to improve the health of the six Icon Sites (one of which is the River Murray channel) by making the best use of water recovered under TLM, and include the Sea to Hume fishway program. These works have been progressively completed since 2003, and are expected to be fully operational in 2014/15.

Table 3.11: Cost sharing principle - environmental works and measures

Cost type	C'wlth	NSW	Vic	SA
0&M	0%	Costs shares equally between all states (assumed – see note below)*		
I&C	Special cost sharing agreed under IGAs **			

*O&M costs have been incurred since the first works were completed, however as contributions have been fixed since 2006, it hasn't been necessary to resolve the detailed cost sharing rules, and therefore cost shares have not yet been formally agreed for these

activities. For the purposes of analysis of the current cost shares for the proposed 2014/15 budget, the MDBA has assumed that state shares of environmental works O&M costs are met equally by NSW, Victoria and South Australia (as applies for salt interception schemes). ** Initial construction of TLM environmental works, budgeted to be up to \$150m, was to be funded by contributions from the Commonwealth, NSW, Vic and SA. However, at agreed contribution rates, construction would have taken until about 2020. In 2006, the Australian Government invested \$500m in the MDBC to accelerate and increase a range of programs, including TLM environmental works, navigable pass upgrades, salt interception schemes and dam safety upgrades. The investment allowed TLM environmental works to be completed within 5 years and expenditure on them to be increased from \$150m to \$275m. In addition, interest on the investment has allowed the total expenditure on these works to be further increased to meet cost over-runs. No agreement has yet been reached on cost shares for any potential future renewal or upgrading expenditure on these assets.

vi) River Murray Operations management

A range of functions are undertaken by the MDBA to deliver the RMO programs. These include asset management and planning for river structures, salt interception works and environmental works, together with planning river operations and accounting for state water shares. The RMO program also attracts an apportioned share of MDBA corporate overheads, which are shared on the same basis as the RMO management activities.

Table 3.12: Cost sharing principle - River Murray Operations administration

Cost type	C'wlth	NSW	Vic	SA
0&M	25%	Balance of O&M costs sh percentage shares of tot programs except enviror	nared between states base al O&M and I&C costs for nmental works and measu	ed on the same overall all other RMO sub- res.

Non-RMO programs

The non-RMO programs cover a range of activities, many of which are related to basin-wide natural resource management issues. Current sub-programs are:

- Water Markets interstate Water Trade Policy
- The Living Murray Planning and delivery, modelling and monitoring
- Murray-Darling Freshwater Research Centre
- Environmental Monitoring and Evaluation
- Water Quality and Salinity Management (BSMS) policy, including reviews of strategy, establishing and maintaining salinity registers and audit and compliance.
- River Murray Health
- Core Modelling Maintenance of existing models, IMS/Daily Models
- Indigenous Engagement
- Secretariat
- Information and Data Quality assurance, organisation and distribution of NRM data.

The non-RMO program also attracts an apportioned share of MDBA corporate overheads, which are shared on the same basis as the other activities in the NRM program.

Table 3.13: Cost sharing principle - NRM programs

Cost type	C'wlth	NSW	Vic	SA
O&M	After allow negotiated programs), the Commo	ing for contributions from based on relevant interes the balance of the cost o onwealth, NSW, Victoria a	NQueensland and ACT (wh St by each jurisdiction in th f NRM programs are been nd South Australia	ich were typically le various NRM shared equally between

Attachment B provides a summary table detailing the percentage costs shares at a sub-program level for the joint activities that result from the application of these cost sharing principles, as they were agreed in 2006.

Corporate overheads

3.6.7 The overall operation of the MDBA incurs corporate overhead costs for management functions such as human resources, finances, procurement, workers' compensation insurances, corporate IT systems and support etc. These costs are apportioned across MDBA activities pro-rata on basis of the number of staff involved in each function or activity (as measured in full time equivalents or FTEs). The joint programs attract a share of the total MDBA corporate overheads, and these overheads are then further apportioned between the RMO and NRM programs, also on the basis of the FTEs employed in each program. These costs are then shared in accordance with the relevant principles as noted above.

3.7 Previous overall cost shares

3.7.1 When these cost sharing principles are applied to the proposed programs of works, with the relevant shares of capped entitlements and 5 year average annual diversions, an overall cost share can be calculated for state contributions. The table below summarises the percentage shares that have applied historically for sharing costs between NSW, Victoria and SA. It should be noted that these shares represent sharing of the balance of costs after allowing for Commonwealth contributions to RMO I&C activities and QLD, ACT and Commonwealth contributions to other joint NRM programs.

	Share of state contributions - NSW: Victoria: SA		
Period	RMO	Other joint activities	
Pre 1998/99	33:33:33	33:33:33	
1998/99 to 2005/06	40:36:24	33:33:33	
2006/07 to 2013/14	38:35:27	33:33:33	

Table 3.14: Historic overall costs shares of total state contributions between NSW, Vic and SA

Chapter 4 MDBA Budget and Cost Shares Framework

4.1 MDBA Budget and Cost Shares Framework

4.1.1 This chapter considers the establishment of the Murray-Darling Basin Authority's budget, the cost shares framework and its consistency with Australian practices in relation to the management and regulation of infrastructure service providers.

4.2 Financial Framework

4.2.1 Section 18E of the Water Act requires that the Authority manage functions conferred on it under the Agreement in accordance with the *Murray Darling Basin Agreement* (the Agreement). The MDBA's budget for the joint programs is established in accordance with the provisions of the Agreement. Specifically, under the provisions of Clauses 34 and 74 of the Agreement, the MDBA must prepare detailed estimates of known and anticipated expenditure for the next financial year and forward estimates of its known and anticipated expenditure for the three successive financial years. The annual and forward estimates must show the estimated amount to be contributed by each Contracting Government – their cost share. The annual and forward estimates must be included in the MDBA's Corporate Plan.

4.2.2 The MDBA is required to produce a draft Corporate Plan for consideration by the Basin Officials Committee (BOC) prior to its submission, together with any advice from BOC, to the Ministerial Council for approval. The draft plan must set out the activities of the MDBA for the next four years. This includes the new capital work and maintenance programs as may be required to implement the asset management plan which is another requirement of the Agreement. The annual and forward estimates may be amended as a result of the Ministerial Council's consideration of the Corporate Plan. Since 2006, and in accordance with Clause 53 of the Agreement, the MDBA has been required to develop an asset management plan which establishes the way the river operations works and measures are constructed, operated, maintained or implemented. The first asset management plan was approved by the Ministerial Council in 2011. In addition the Authority has entered into an Asset Agreement with asset controlling governments which sets out the controlling governments' requirements for accounting for the assets, recording, reporting and audit, and specific high level requirements in relation to construction, maintenance and operation of assets.

4.3 Funding commitments

4.3.1 The financial framework outlined above anticipates that Contracting Governments will fund the operation of the MDBA through an indicative four-year funding commitment, which is rolled forward and updated each year. The MDBA's funding requirement is established on a forward work program which takes account of the condition of the assets managed by the MDBA and the program of works approved by the Ministerial Council, through both the Corporate Plan and the Asset Management Plan. Under the cost sharing arrangements, the Contracting Governments' contributions to the MDBA's funding requirement, as discussed in chapter 3, takes account of both the system-wide benefits of the scheme and jurisdiction specific benefits resulting from management of River Murray assets. The cost share parameters reflect historical parameters relating to water entitlements, water use and local benefits derived from River Murray Assets. There is a requirement to review these on a five yearly basis (Clause 72(b)).

4.3.2 The Contracting Governments' cost shares were last agreed in 2006 and their funding commitments set in real terms for the following four years (until 2010/11). At this time the Commonwealth made a one off cash injection of \$500 million to allow all pre-existing decisions by the Ministerial Council and the MDB Commission to be implemented in a timely manner; an expanded Environmental Works and Measures Program to ensure that best use is made of water recovered from the Living Murray initiative; and accelerating water recovery measures under the Living Murray initiative.

4.3.3 This arrangement was extended in 2009 when Ministerial Council agreed, subject to certain conditions, to maintain funding in real terms for Natural Resource Management and River Operations programs from 2011/12 to 2014/15.

4.4 Delivery of works and measures by the MDBA

4.4.1 The MDBA manages, but does not own or control, the River Murray Assets on behalf of the asset controlling governments. The Ministerial Council or the Authority³ authorises the construction of works; the improvement, replacement and remedying of constructed works; and the implementation of measures in accordance with the Agreement, the Corporate Plan, the asset management plan, and the asset agreement. A Contracting Government is responsible for the construction, operation and maintenance of works and the implementation of measures. Each Contracting Government appoints a Constructing Authority to undertake the various activities on behalf of the Contracting Government. In the case of South Australia, the Minister for the River Murray is the appointed Constructing Authority but he has appointed SA Water as his agent.

4.4.2 In managing the operation of the river assets and the approved joint activities the MDBA works with the State constructing authorities. In effect the MDBA works through the state constructing authorities to construct and manage the operation of the river to deliver the agreed water allocations and environmental outcomes. Also, the MDBA's budget estimates for River Murray activities are largely based on proposed works programs and costings developed by the State Constructing Authorities.

4.4.3 In view of the variable nature of the delivery of capital works and the impact that river conditions can have on the timing of maintenance activities, the MDBA and or the constructing authorities cannot always deliver or complete planned works in accordance with the MDBA's budget. The Agreement provides that the MDBA must notify the Contracting Governments of any underspends held by it at the end of any financial year. Moreover, any underspends can only be expended in terms of the Corporate Plan.

4.4.4 Advice provided by the MDBA indicates that when developing its annual program of expenditures it takes account of the capacity of state constructing authorities to deliver works at different locations. Moreover, it also seeks to balance its work program to make effective use of the resources of the relevant Contracting Governments. Given the expenditure is established to meet the priority needs across the whole program (guided by the Asset Management Plan), actual expenditure in any given year is unlikely to match the cost shares.

³ The Authority may authorise a work the estimated cost of which is not more than \$2,000,000 [Cl 56(2].

4.5 Infrastructure Service Provision

4.5.1 Australian experience since the 1980s has been to establish infrastructure service providers as legal entities separate from government. (This is the case even where these entities have not been privatised.) This outcome can be achieved by establishing the service provider as a corporation's law company subject to the Corporations Act and the governance mechanisms that it provides (which can be supplemented by additional statutory requirements), or as a corporation established by statute with the governance mechanism and objectives established by statute. State, territories and the Commonwealth have used different approaches in different circumstances.

4.5.2 Establishing infrastructure service providers as legal entities with boards appointed by a government shareholder/s and management responsible to the board means that Ministers and their departments are removed from the day to day operation or management of service provision.

4.5.3 Accordingly, these entities are governed by their articles of association and or constitutions. These documents have generally required the entities to operate on a commercial like basis. This combined with an obligation to charge their customers for the services they provide means that they operate outside of budget appropriations and may even pay dividends to governments which can reflect a return for the community's investment in the business. Where services are provided below cost there is an expectation that governments will record any financial support to the entity as a community service obligation and that the requirements of competitive neutrality will be complied with.

4.5.4 The boards of these entities have a fiduciary duty to act in the best interest of the entity and to comply with all regulatory obligations. Also, given the long lived nature of infrastructure assets these entities have been able to finance their activities by a combination of debt and equity finance. In many instances these entities are required to borrow through State Treasury corporations and to meet the transaction costs associated with those borrowings. In some instances, recognising competitive neutrality principles payments to reflect a commercial debt premium are also levied.

4.5.5 In recognition of the market power of these entities, economic regulators have also been required to approve the charges of these service providers. Economic regulation provides a degree of assurance that capital works programs reflect the expected demand for the services, meet specified service standards and that the service provider is generally operating in an efficient and effective manner for the best interest of its customers.

4.6 Considerations

4.6.1 The process by which the MDBA's Corporate Plan and budget are set means that there is substantial Ministerial involvement in the planning and management of the MDBA. This is more than would generally be the case for other Australian infrastructure service providers, however, unlike the MDBA other infrastructure providers directly own the assets they operate. Even though water users contribute towards the costs of some of the MDBA services to varying extents in each jurisdiction, these contributions do not cover all the MDBA costs or provide any return to capital for the assets owned by the Contracting Governments (see Attachment C). These user contributions are aggregated by State governments and "topped up" with government funding to cover the full cost of each States contribution to the joint programs. The MDBA's reliance on budget appropriations means that it does not directly interact with water users on a fee for service basis. This also reflects the fact that the MDBA services are provided to governments and not water users.

4.6.2 This may mean that the focus of the MDBA is its relationship with government rather than with the ultimate consumers of its services.

4.6.3 The MDBA's reliance on budget appropriations and the requirement that it work through state constructing authorities to maintain and operate River Murray Assets may limit the capacity of the MDBA to develop innovative approaches to the sustainable operation of River Murray Assets and for the delivery of water allocations and environmental outcomes on an efficient basis.

4.6.4 This review notes that the efficiency of the MDBA's service delivery is the subject of a separate review.

Chapter 5 Application of National Water Initiative (NWI) Pricing Principles

5.1 Background

5.1.1 The Terms of Reference at Attachment A require this Review to provide 'advice on the consistency of the cost sharing arrangements for the Contracting Governments' assets and joint activities, including beneficiary and impactor attribution at the asset level and for the other activities and programs (e.g. the salt interception schemes), with the relevant provisions of the National Water Initiative'. Specifically, the terms of reference require consideration of clause 64 of the NWI and the NWI pricing principles.⁴

5.2 NWI and Pricing Principles

5.2.1 The NWI at clause 64 requires parties to implement water pricing and institutional arrangements with the objective of promoting, among other things, the economically efficient and sustainable use of water infrastructure assets. These arrangements were also intended to ensure sufficient revenue streams to allow efficient delivery of the required service and to give effect to the principles of user pays. The arrangements also need to avoid perverse or unintended pricing outcomes.

5.2.2 Following the Council of Australian Government's agreement in 2004 to the NWI the Steering Group on Water Charges identified three areas where differences in pricing approaches across jurisdictions were most marked⁵. These were: approaches to the recovery of capital; approaches to setting urban water prices; and approaches to recovering the costs of water planning and management. To address this, the Steering group developed four sets of principles which are collectively referred to as the NWI pricing principles. Two of the sets of principles *viz*. principles for recovering capital expenditure and principles for recovering the costs of water planning and management are directly relevant to this task.

5.3 Cost sharing for joint activities

5.3.1 In assessing the consistency of current cost sharing arrangements with the NWI principles the Review has considered the financial statements of the River Murray Operations Joint Venture which governs the operation of assets of the Contracting Governments by the Murray-Darling Basin Authority (MDBA). The 30 June 2013 Special Purpose Financial Statement provided a value of \$2.278 billion for (total) infrastructure assets at fair written down value. The accounts also recorded work in progress for other infrastructure assets of \$239 million.

5.3.2 The current cost share arrangements require Contracting Governments to meet the financial costs of the MDBA in operating and maintaining the Contracting Governments assets as well as financing the investigation and construction of new assets. As discussed in the Chapter 1, the Commonwealth Government, as agreed in the MDB Agreement, agreed to contribute one-quarter of all investigations and constructions costs⁶ and the State Contracting Governments must contribute three-quarters of these costs. In addition, State Contracting Governments must contribute to operation and maintenance costs in the proportion determined by the Ministerial Council on the

⁴ CoAG Intergovernmental Agreement on a National Water Initiative June 2004

⁵ Natural Resources Management Ministerial Council National Water Initiative Pricing Principles April 2010

⁶ Water Act 2007 Schedule 1 clause 72

recommendation of the MDBA. As discussed in chapter 4 the indicative budget for the MDBA's joint activities was set in 2009 for the period to 2014/15 this established a funding commitment for each Contracting Government which incorporated the cost share arrangement that was last reviewed by the MDBA in 2006. Since then the Ministerial Council has endorsed budgets which entail different de facto shares. However, the sharing formula from 2006 has not been modified.

5.3.3 As discussed in chapters 3 and 4, the financial cost of delivering the joint activities is set out in the MDBA's corporate plan. The recovery of these costs from the Contracting Governments is based on the application of historical cost share arrangements which, for River Murray operations, the cost share is determined in accordance with a formula which uses a State Contracting Government's capped water entitlement, Murray River diversions and the non-consumptive service benefit attributed to State Contracting Governments from certain river assets as parameters, after allowing for the Commonwealth governments contribution toward investigation and construction costs.

5.4 User pays principle

5.4.1 The NWI seeks to promote economic efficiency and to give effect to the principle of user pays. As discussed at different places in this Review, the MDBA provides services to its Contracting Governments and those services are then made available to individuals, businesses and communities in each jurisdiction.

5.4.2 The quantity and the nature of the service provided by the MDBA is not necessarily the same for each jurisdiction, accordingly this raises issues about how the cost of delivering MDBA joint activities should be shared between the jurisdictions. The user pays principle is a proposition that the user of a service, in this case the jurisdiction, pays directly for the amount they use of a service rather than the cost of the service being shared by all users or the community. The user pays principle can be referred to as beneficiary pays. The OECD notes that the user pays principle is a form of the principle of polluter pays⁷. The NWI principles calls for impactor pays.

5.4.3 User pays is supported by the proposition that a person who does not use a service should not have to pay for it and is consistent with the policy of moving water charges to reflect water use rather than a user's capacity to pay. Where individuals or the community gain a benefit without actually consuming a good or service the user pays principle may not always be appropriate.

5.5 Public goods

5.5.1 A public good is a good that is both non-excludable and non-rivalrous in that users cannot be effectively excluded from use and where use by one individual does not reduce availability to others, for example a fireworks display.

5.5.2 River Murray storage and delivery assets are not 'public goods' in that access to the infrastructure services is both excludable and rivalrous. A case may be made that where storages and the weir pools are used for recreation, tourism and or aesthetic purposes then these uses may have a public good characteristic, and similarly the facilities provided by the locks for navigation have public good characteristics. Whether these public good aspects of the River Murray distort economic efficiency is likely to depend on whether the demand for these 'services' is imposing costs

⁷ OECD Glossary of Statistical Terms stats.oecd.org/glossary/details.asp?ID=2827

on the operation of the water delivery system which would not otherwise have been the case. The MBDA reports that direct annual costs associated with operation of the Locks and other tourism services are in the order of \$2.2 million.

5.5.3 Where River Murray assets provide benefits in addition to those required to deliver state water entitlements and the maintenance of river attributes the application of costs shares based on user pays does not necessarily mean that all costs associated with the asset need to be imposed on the beneficiary of the additional activity. Rather an economically efficient outcome would be achieved by recovering the incremental cost associated with the provision of the additional benefit.

5.5.4 To the extent however that costs associated with River Murray assets and operations are assigned on the basis of states water entitlements this accords with the intent of the NWI but as noted below it might not be fully consistent with the NWI pricing principles.

5.6 Dealing with externalities

5.6.1 The COAG Water Resource Pricing Principles defines externalities to mean environmental and natural resource management costs attributable to and incurred by the water business. This Review takes attributable to mean costs that might not be directly incurred in the delivery of the activity but which would potentially be borne by another party adversely affected by the delivery of MDBA services e.g. the need for storages to ensure delivery of states' water shares means that river works are required to address changes to river flow at other locations along the river. Externalities can also be positive in that benefits can be derived to parties which are additional to the intended benefit of the service e.g. increased environmental flows can also, in addition to supporting selected habitats, assist in addressing salinity levels in the river.

5.6.2 The use of terms such as polluter pays and beneficiary pays has a long history in the consideration of natural resource management issues and for the cost sharing of infrastructure assets in the Murray-Darling Basin⁸. The Commission used the term beneficiary pays to refer to situations where costs incurred by a landholder are in part met by other stakeholders (or beneficiaries), who while they do not influence the landowner's decision to undertake a particular activity they might also benefit from the activity. The application of user pays usually assumes there are no externalities. This however is generally not the case with natural resource management activities. Accordingly, proposals to limit cost share arrangements to beneficiaries needs to consider the full set of beneficiaries of an activity and that externalities have been taken account of⁹. This also requires a full understanding of the service being provided by a joint program activity.

5.6.3 Economic theory is not settled on the extent to which external costs such as pollution should be borne by the impactor or third parties. In part this will depend on the allocation of property rights and the ability of private negotiations to identify cost efficient remedies. The effectiveness of market based solutions will in part depend on the magnitude of the transaction costs associated with remedying the situation. Where market based approaches are not effective (it is not possible to identify the source of the externality or the numbers of affected parties is large and geographically dispersed) regulation or government intervention to address market failure may be appropriate

⁸ Cost-sharing for On-ground Works, Murray-Darling Basin Commission, June 1996

⁹ Ibid p.18

providing it is cost effective. The Basin Plan is an example of the sharing of costs, both direct and environmental, between water users and the community more generally.

5.6.4 The Review notes that internalising negative externalities in the price of a service may not always represent the most efficient means of addressing an externality. On occasions it may be appropriate to share the cost of remedying a negative externality between the initiator of the externality (if they can be identified) and the affected parties or society more generally. The NWI addresses this by requiring the sharing of costs between water users and governments on a transparent basis.¹⁰

5.7 Principles for the recovery of capital expenditures

5.7.1 The NWI pricing principles set out principles for the recovery of capital expenditures and the recovery of capital costs through water charges. As noted in previously, the MDBA manages the Joint Venture Assets of the contracting parties and coordinates the commissioning of new assets. The cost sharing framework deals with each party's contribution to meeting the cost of Joint Venture capital assets.

5.7.2 The NWI principles for the recovery of capital expenditures are reflected in the ACCC Pricing Principles for water service businesses summarised on the following page.

¹⁰ COAG National Water Initiative Pricing Principles p.14
ACCC Pricing Principles for price approvals and determinations under the Water Charge (Infrastructure) Rule 2010 July 2011

The ACCC pricing principles were developed to be consistent with Part 6 of The Water Charge (Infrastructure) Rules 2010 and with the principles of the NWI. The application of these principles requires that service charges reflect a building blocks approach to assessing efficient costs:

- An economically efficient value for the asset that have been constructed to supply the service (the opening RAB)
- The opening RAB value to be adjusted at the commencement of each regulatory period to account for construction of new assets and the depreciation of existing assets
- A required rate of return on the assets employed in delivering the service. This is to be expressed as a weighted average cost of capital, incorporating separate returns for debt and equity with an assumed debt and equity shares of 60 and 40 per cent respectively
- The forecast prudent and efficient operating cost for delivering the service/s, including cost necessary to meet legislated and regulatory costs and compliance with service standards
- Forecast capital expenditures are also assessed and included in the forecast RAB
- An allowance for taxes paid

The ACCC pricing principles also make allowance for future capital and operating expenditures to be financed through an annuity. Where an annuity is used to finance future costs these capital expenditures and operating cost allowance are excluded from the building block calculation.

The determination of forecast prudent and efficient cost of the infrastructure service is the first step in determining efficient prices / charges. The second step is to determine a forecast revenue allowance for each year of the regulatory period which equates to the expected prudent and efficient cost of service delivery.

In order to derive tariffs from the revenue forecast a regulator needs to have a forecast of the demand for the service/s and cost allocation principles to attribute cost between the services provided.

5.7.3 While the RMO activities of the MDBA share many of the features of bulk water business (storage and delivery) which are subject to the Water Charge (Infrastructure) Rules 2010 the MDBA does not interact directly with water users or seek to charge for the specific services it delivers. As a consequence Contracting Governments' cost shares for the delivery of the MDBA's services will not reflect the economic value of capital employed. Consequently the cost sharing arrangements do not meet the principles for recovery capital expenditures.

5.8 Principles for recovering the costs of water planning and management activities

5.8.1 The NWI defines activities which fall within the category of water planning and management activities and requires that the costs for these are allocated between water users and governments. Many aspects of the joint programs appear to fall within the definition¹¹. NWI provides that the costs

¹¹ Ibid p13

be shared on the basis of an impactor pays approach, that is the cost is assigned on the basis of the activity that generated the cost. Any costs that are assigned to users need to be no more than the efficient cost of the activity.

5.8.2 As noted previously where the price of a service fully reflects the cost of externalities there is not likely to be a substantial difference between a cost sharing arrangement based on considerations of the beneficiary or the impactor. The critical issue is to define the service which is being provided in order to understand why the costs are being incurred and for what purpose. This is particularly important in the case of NRM activities where consideration needs to be given to whether these activities meet the NWI pricing principles criteria for water planning and management activities. As discussed in Chapter 7, NRM activities are likely to meet the definition of water planning and management activities.

5.9 Considerations

5.9.1 Drawing on information provided in Chapters 3 and 4 this Review has found that the current cost share arrangement for funding MDBA joint activities is not fully consistent with the provisions of the NWI and the NWI pricing principles. Cost sharing for River Murray operations which share costs on the basis of water entitlements is, however, consistent with the intent of the NWI.

5.9.2 Contracting governments are the recipient of MDBA joint program activities. State governments then seek to recover or defray their costs from water users. This arrangement is consistent with the NWI pricing principles where governments publicly report the total cost of water planning and management and the proportion of the total cost of water planning and management attributed to water access entitlement holders and the basis on which this proportion is determined.

5.9.3 The NWI has the objective of promoting the economically efficient and sustainable use of water infrastructure assets. To the extent that the current cost sharing arrangement does not incorporate an allowance for the recovery of capital or MDBA costs shares are not passed through to users on a transparent basis, the efficiency objective of the NWI is likely to be weakened.

Chapter 6 Issues with current cost sharing arrangements

6.1 **Positive aspects of joint programs**

6.1.1 Consultation with jurisdictions identified a range of important joint activities that are highly valued. The following services were widely agreed to deliver outcomes that were valued by all jurisdictions, and any changes to the joint programs will need to ensure that these outcomes can be effectively delivered in the future.

i) Co-ordinated management and delivery of the shared water resources of the River Murray system.

This is a critical, high priority activity. This activity covers the operation, maintenance and renewal of assets required for harvesting, storing and delivering state shares. There are also significant functions associated with the planning of river operations and water harvesting and the measurement, monitoring and accounting for state shares which are also essential to the overall provision of reliable water entitlements.

ii) Ensuring shared resources are fit for purpose

The management of the shared water resources addresses the quantity dimension of reliable water share accounting and delivery, but States also viewed the quality dimension of water supply as highly important. There was a strong, shared interest in cost-effective activities that ensured that the water resources in the River Murray system are of suitable quality for beneficial use. These activities include the operation of salt interception schemes and other water quality monitoring and management actions (e.g. BSMS policy development, salinity registers etc.).

iii) Protecting the environment to support a healthy, working river.

Jurisdictions recognised the importance of addressing the impacts of river regulation and supported the need for the MDBA to be active in these areas. It was also recognised that a healthy river environment contributed to maintaining water quality and provided significant wider general benefits.

The primary response to the challenge of addressing over-regulation and protecting the environment was the development of the Murray-Darling Basin Plan. The Basin Plan is a major Commonwealth initiative and has been developed in consultation with the states. The Water Act, which initiated the development of the Basin Plan, also included provisions for the creation of the Commonwealth Environmental Water Office (CEWO). The CEWO is now a paying customer of state water utilities, with an extensive water portfolio to manage.

iv) Providing a joint forum for addressing emerging issues.

The Millennium drought and significant water quality events were examples cited that demonstrated the value of having established joint forums in place to co-ordinate basin wide responses to emerging issues, not all of which may be anticipated in advance. The threat of climate change and increases in extreme weather events also added to the need for and value of being prepared to undertake joint action, often with limited lead times.

The joint programs governance arrangements were also seen as a mechanism that enabled jurisdictions to more effectively identify and address shared obligations. They also supported the on-going optimisation of system operation and management. It is also noted that the Basin Plan requires jurisdictions to apply adaptive management to their implementation activities.

6.1.2 Jurisdictions also seemed to have relatively few concerns with the cost sharing principles currently applied to assets and activities seen as necessary for the delivery of these valued outcomes of system-wide water resource management and sharing, addressing the impacts of river regulation and water use, and ensuring water resources continue to be fit for purpose.

6.2 Key issues for the joint programs

6.2.1 Despite the positive aspects of the joint program, there were a range of issues identified by jurisdictions that needed to be addressed to improve the relevance, scope and effectiveness of the programs.

6.2.2 Many issues arose from the changing environment that the joint programs now operate in, compared to the circumstances that existed when some programs were initiated. The Basin Plan is seen as a major, rapid change in the operating environment which has significant implications for the scope of the current joint programs. The drivers for the joint program have also changed over time, creating concerns about the continuing need for some assets and activities.

6.2.3 Additionally, all jurisdictions are facing budget constraints, and this has prompted critical review of joint program activities, reducing the overall scope of the joint programs with some activities being discontinued altogether.

6.2.4 The key issues that were identified as needing to be addressed are summarised below.

Rationale for Joint Program activities

6.2.5 A number of examples were provided by jurisdictions, questioning the current rationale for joint program activities. These included:

- The Basin plan and its implementation are now seen as the primary NRM program for most jurisdictions, calling into question the need to continue some activities in the NRM area as joint actions.
- Navigation does not have the same shared economic importance that it once did. This has given rise to varying perspectives on the need for shared ownership and management of a number of locks and weirs on the lower River Murray.
 - Some jurisdictions see locks and weirs as part of the overall package of measures, and they provide a range of benefits including addressing the impacts of river regulation.
 - Alternatively, other jurisdictions see them as largely providing localised benefits which should be funded by those beneficiaries.

Recently, a number of locks and weirs have been used to provide efficient (cost and water efficient) opportunities for gravity diversion of water to environmental assets. The assessment of this benefit and its implications for the ongoing joint management of these locks and weirs and their cost sharing is not clear.

6.2.6 Overall, there were significant concerns around which activities should be included in the joint programs and by extension which activities should be excluded. The limited awareness of, or lack of agreed, objective criteria to support decision making on what activities should be included in the joint programs is a significant short coming. It was also apparent that that the lack of a clearly documented rationale for the establishment of many joint activities and assets and the absence of agreed objectives and performance measures for many activities made it difficult to assess or review the relevance and on-going need for program activities.

Scope of programs

6.2.7 In a relatively stable, slowly changing external environment, the scope of the joint programs was not an issue that needed to be actively addressed often. This is no longer the case, as climate change and record drought have rapidly affected water availability, water quality, and water table and salinity threats. The agreement to implement the Basin Plan has also significantly changed the environment which the joint programs operate in. All of these events, together with increasing pressure on jurisdictional budgets, have raised a strong question as to the appropriate scope for many of the current joint program activities, especially in the following areas:

• Reduced need for SIS operations.

Extended drought, together with reduced water application to land has reduced water-table levels and resulted in less salt entering river systems than was forecast in pre-drought times. Additionally, drought and the recovery of water for the environment have reduced the footprint of irrigated agriculture and in future there may be less salt discharge from irrigation areas than in the past. Delivery of the water recovered for the environment under The Living Murray and Basin Plan to sites like the Lower Lakes will also result in higher instream flows in the lower River Murray, reducing salinity levels.

Conversely, it is also noted that application of environmental water to floodplains could mobilise salt and lead to increases in saline inflows to river systems.

The number and/or composition of schemes needed to meet the water quality objectives set out in the Basin Plan is seen as an issue that needs to be closely considered. It is also noted that a general review of salinity management is currently underway, which should provide some insights into these issues.

• TLM environmental water management.

The scope and nature of actions undertaken to manage the TLM water portfolio was identified as an issue for consideration. Some of the environmental delivery planning and management actions may duplicate or overlap with actions that fall under the scope of the Basin Plan, and may not need to be undertaken as joint activities in future. Alternatively, assumptions about use of the TLM portfolio under the Basin Plan may require ongoing joint action to ensure associated outcomes are maintained.

There was agreement that there may be opportunities for alignment of some TLM activities with wider environmental water delivery processes, and that the TLM activities should be critically reviewed to assess whether their coordination by the MDBA is warranted and whether they should be included in the joint programs. It is noted that a review of future directions for TLM is currently underway, which should help provide the necessary detail to address these concerns.

• Murray mouth dredging.

The implementation of the Basin Plan will result in higher flows to the Lower Lakes and through the Murray Mouth. It is anticipated that this will reduce the future need for dredging the Murray mouth to maintain connectivity between the Murray and the sea during dry periods. The future requirement for the full suite of current joint program approaches to the dredging task may need to be reviewed in this light.

• Environmental Works and Measures.

As noted in Chapters 2 and 3, the TLM environmental works have been built to address floodplain and wetland degradation at icon sites as diversions increased, and to allow fish passage. Costs for the initial construction of these works have been met by special funding arrangements provided under two IGAs. Clear agreement is needed on the most suitable cost sharing arrangements for future O&M or I&C costs for these assets.

As noted above, the lack of widely understood, agreed objectives and performance measures for many activities makes it difficult to assess whether desired outcomes could be achieved with changed (e.g. reduced) program scope. It is also noted that the Basin Plan has been developed on the assumption that some current joint activities will continue to be undertaken in a certain manner. This constrains major changes to the scope of these activities, although it is noted that the Basin Plan makes no assumption that these activities should continue to be funded in the same way that they currently are.

Governance, priorities and budgeting

6.2.8 There have been a number of previous reviews of the joint programs, and despite the improvements that have been made, and the package of reforms to strengthen the governance arrangements for the joint programs agreed to by the Ministerial Council in February, there are still ongoing concerns over governance, transparency and accountability of the joint programs, particularly at a sub-program or activity level.

6.2.9 The issues relating to unclear or out-dated objectives and performance measures for many activities discussed above could also be symptoms of gaps or areas for improvement in current governance and priority setting processes.

6.2.10 Chapter 4 describes the asset planning, budget development and corporate planning processes that the Authority uses to develop the costs for the Joint Programs, however the jurisdictions also noted that development MDBA budgets takes place in a wider financial context, and the actions proposed need to be affordable, and have regard for the financial constraints and priorities of all parties. It was also noted that social issues such as liveability also need to be

considered, however this is not well catered for under current arrangements and there are some difficulties in identifying a specific "customer group" to recover costs from for these public good type services.

6.3 Considerations

6.3.1 The joint programs still offer an attractive value proposition for the jurisdictions, and there is strong support for the ongoing need for activities which enabled system-wide water resource management and sharing, addressing the impacts of river regulation and water use, and ensuring water resources are fit for purpose. Jurisdictions also seemed to have relatively few concerns with the cost sharing principles currently applied to assets and activities seen as necessary for the delivery of these valued outcomes (e.g. the majority of the Category 1 assets). One jurisdiction did question the appropriateness of cost sharing principles applied to assets that have significant local or specific benefits in addition to their system-wide benefits (e.g. Category 2 assets).

6.3.2 The MDBA manages a complex, highly integrated system of assets, and the concerns noted by the state officials about the lack of agreed, objective criteria to support decision making on what activities should be included in the joint programs is a significant short coming. It was also apparent that that the lack of a widely understood rationale for the establishment of many joint activities and assets and the absence of agreed objectives and performance measures for many activities made it difficult to assess the performance of individual assets or the overall portfolio. This has the effect of limiting the ability of the MDBA to optimise the program activities or easily identify and recommend to jurisdictions changes in the make-up or scope of joint programs and assets.

6.3.3 Given the highly integrated nature of the RMO system assets, and the strong support for the core activities which make up the bulk of the joint program cost base, it is concluded that the changes in program scope and costs are likely to be at the margin. Nevertheless, there appears to be a need to review the assignment of assets to categories 1 and 2; the respective share of costs for category 2 assets that are jointly funded, and to confirm the cost sharing principles that should apply to the TLM environmental works and measures. There also appear to be opportunities to review the scope of a range of current activities including TLM water delivery management and planning, SIS operation and Murray Mouth dredging. It is also apparent that there is a need to critically review the rationale and scope of current NRM programs, and it is likely that some reductions in joint program activities may be possible in this area, while noting that these account for a relatively small proportion of the budget.

Chapter 7 A framework for sharing MDBA joint activity costs

7.1 **Overview**

7.1.1 This chapter first notes the views of Basin Officials on the operation of the current cost share framework. Second it considers the 2012 NSW proposal to change the current cost share framework against the benchmark of the draft 2014/15 MDBA budget. Third it provides costing for options to revise the operation of the current cost share framework. Finally, it identifies possible changes to the cost sharing arrangements for Contracting Governments' assets and activities.

7.2 BOC positions on cost share framework for joint programs

7.2.1 The workshop on 11 March 2014 (Attachment D) considered, among other things, the basis of the current cost shares arrangement for the joint programs and principles that would need to be considered when making changes to the current arrangements.

NSW Officials' comments

7.2.2 Activities and programs that provide significant joint benefit to Basin states should be jointly funded whilst activities and programs that provide significant regional and local benefits should be devolved from the joint activities program to the respective states that benefit from those activities.

Victoria Officials' comments

7.2.3 The Basin Plan is an important influence, but may have only limited impact on the requirements for the joint programs, suggesting a continuation of current costs sharing principles. Constituent governments can achieve beneficial outcomes that could not be achieved individually. Shared responsibility and the need for partnership actions extend beyond the management of Category 1 assets, and there is a need to take a whole of system approach when considering benefits and cost sharing.

South Australia Officials' comments

7.2.4 There is a need to consider the system as a whole, rather than focussing on individual assets. The current cost sharing formula and mix of assets is still largely appropriate, and any change away from this needs to be based on clear evidence.

Commonwealth Officials' comments

7.2.5 The rationale for any significant change to the current arrangements is not clear. The question of user pays (beneficiary pays/impactor pays) is a broad one, and many past decisions were taken based on the existence of a range of assets, and this cannot be ignored when considering the application of user pays principles.

7.3 **Consideration of BOC positions**

River Murray Operations

7.3.1 There was general agreement that the use of capped water entitlements and river diversions is an appropriate basis for sharing the cost operating and maintaining the River Murray assets. That said, NSW, as discussed later, is proposing that some assets be recategorised and that consideration be given to devolving responsibility for managing assets to state authorities. Other jurisdictions noted that the categorisation of assets reflected the outcome of a detailed assessment of costs

shares in 1998, that was reviewed in 2006 and that any change to current classification of river assets would need to address changes in the use of assets since that time.

Non-River Murray Operations

7.3.2 These activities encompass natural resource management programs and, for budget/cost sharing purposes, salt interception schemes. A cost shares framework for these programs based on water entitlements was not supported. NSW proposed a beneficiaries pays approach and devolution where appropriate. Other jurisdictions noted that a broad view of beneficiary is needed.

7.4 NSW 2012 proposal

7.4.1 The NSW proposal concentrated on changes to funding of RMO, primarily by adjusting the asset base operated by the MDBA, but also by removing a number of other joint activities from the MDBA. NSW provided three governance principles that they felt should be used to determine whether an activity should remain within the MDBA and used these principles to put forward proposals to amend the joint activities and cost shares.

• Activities and programs that provide significant joint benefits to Basin states should be jointly funded whilst activities and programs that provide significant regional and local benefits should be devolved from the joint activities program to the respective states that benefit from those activities.

7.4.2 Under this principle, NSW suggested that Yarrawonga Weir, Torrumbarry Weir, the Lower Lakes Barrages and Locks 1 to 8 and 10 and 11 be removed from the assets managed by the MDBA and returned to their respective states. They also suggested that Salt Interception Schemes should be removed from the joint governance, as they may not be needed under the Basin Plan and that the benefits are local only. As such, if the SIS still needs to be operated after the Basin Plan is implemented, NSW proposed that they be operated by the states and not the MDBA (i.e. although joint funding may continue for some SIS schemes that benefit more than one state, the funding and operation would be undertaken by the states themselves, through bilateral or multi-lateral agreements). NSW proposed that structures within state forests be devolved to the state where the forest is located and that SA Murray Mouth dredging cease as the Basin Plan would obviate the need for dredging. NSW proposed that the operation and management of water trade registers be devolved to the states. NSW also suggested that the overhead costs for RMO would need to be reduced commensurate with the reduction in responsibilities.

• Governance arrangements should clearly align roles and responsibilities with decision making authority, resource planning and implementation and risk assignment.

7.4.3 NSW proposed that a number of activities should be devolved from MDBA as the decision making authority lies elsewhere. These include the removal of BSMS policy, TLM icon site planning and management and monitoring, environmental water management, communication and engagement, including with the indigenous community, should all be devolved to states. NSW also proposed that the ownership and management of TLM water entitlement, including the payment of bulk water charges, be the responsibility of the state in which the entitlement is issued.

• Cost sharing and cost recovery for activities and programs should be consistent with National Water Initiative and National Competition Policy Principles

7.4.4 NSW proposed that user pays should apply to joint activities and that devolving them to states would enable the respective states to determine appropriate cost recovery. They also noted that engagement with external service providers, such as the MDFRC, should be on a fee for service basis and funded by the jurisdiction requesting the service.

			٨	sot Totals		
	2014/15 Budget	\$ NSW	As	\$ VIC	\$ SA	\$ Cwlth
Current						
River structures	\$ 36,445,241	\$ 13,518,124	\$	12,325,713	\$ 8,232,326	\$ 2,369,079
Salt Interception Schemes	\$ 8,336,600	\$ 2,776,563	\$	2,609,893	\$ 2,936,924	\$ 13,180
Environmental Works and Measures	\$ 1,583,140	\$ 527,713	\$	527,713	\$ 527,713	\$ -
Support Programs	\$ 3,214,700	\$ 1,369,005	\$	1,258,655	\$ 532,040	\$ 55,000
Murray Mouth Sand Pumping	\$ 54,000	\$ 13,500	\$	13,500	\$ 13,500	\$ 13,500
Hydrometric Network	\$ 3,644,576	\$ 1,573,166	\$	1,446,360	\$ 611,383	\$ 13,667
RMW Office	\$ 7,205,894	\$ 2,122,961	\$	1,962,297	\$ 1,319,163	\$ 1,801,474
Corporate Commitment	\$ 2,062,000	\$ 607,495	\$	561,520	\$ 377,485	\$ 515,500
Total Program	\$ 62,546,151 ¹³	\$ 22,508,528	\$	20,705,651	\$ 14,550,533	\$ 4,781,399

Table 7.1:	Current funding arrangements for RMO shared activities based on proposed
	2014/15 budget

Note: these cost shares have been calculated using the cost sharing rules for RM outlined in Section 3.6, as applied to draft 2014/15 Corporate Plan budget profile, with average diversions over last 5 years (water year from end June 2009 to end June 2013) and assuming equal shares for the environmental works O&M.

¹² See Attachment E for assets, programs or activities listed under each heading.

¹³ Note that this budget excludes \$4.270 million for EWMP listed in the 2014/15 Corporate Plan, as those funds were sourced from the Special Account, not annual contributions.

Table 7.2:NSW 2012 Proposal for RMO shared activities- Costing based on Proposed
2014/15 Budget

			As	set Totals		
	2014/15 Budget	\$ NSW		\$ VIC	\$ SA	\$ Cwlth
NSW Proposal						
River structures	\$ 36,445,241	\$ 11,612,475	\$	11,994,851	\$ 11,330,834	\$ 1,507,081
Salt Interception Schemes	\$ 8,336,600	\$ 883,333	\$	1,185,033	\$ 6,268,233	\$ -
Environmental						
Works and						
Measures	\$ 1,583,140	\$ 527,713	\$	527,713	\$ 527,713	\$ -
Support Programs	\$ 3,214,700	\$ 1,782,936	\$	992,327	\$ 394,437	\$ 45,000
Murray Mouth Sand Pumping	\$ 54,000	\$ 13,500	\$	13,500	\$ 13,500	\$ 13,500
Hydrometric						
Network	\$ 3,644,576	\$ 1,573,166	\$	1,446,360	\$ 611,383	\$ 13,667
RMW Office	\$ 7,205,894	\$ 1,713,676	\$	1,689,283	\$ 2,001,462	\$ 1,801,474
Corporate						
Commitment	\$ 2,062,000	\$ 490,376	\$	483,396	\$ 572,728	\$ 515,500
Total Program	\$ 62,546,151	\$ 18,597,176	\$	18,332,464	\$ 21,720,290	\$ 3,896,221

Note: Calculated as per Table 1, with all costs passed through the MDBA, but shared according to the NSW proposal.

			As	set Totals		
	2014/15 Budget	\$ NSW		\$ VIC	\$ SA	\$ Cwlth
NSW Proposal						
River structures	\$ 29,430,441	\$ 11,612,475	\$	11,994,851	\$ 4,316,034	\$ 1,507,081
Salt Interception Schemes	\$ 3,253,400	\$ 883,333	\$	1,185,033	\$ 1,185,033	\$ -
Environmental Works and Measures	\$ 1,583,140	\$ 527,713	\$	527,713	\$ 527,713	\$ -
Support Programs	\$ 2,387,500	\$ 1,014,936	\$	933,127	\$ 394,437	\$ 45,000
Murray Mouth Sand Pumping	\$ 54,000	\$ 13,500	\$	13,500	\$ 13,500	\$ 13,500
Hydrometric Network	\$ 3,644,576	\$ 1,573,166	\$	1,446,360	\$ 611,383	\$ 13,667
RMW Office	\$ 7,205,894	\$ 2,177,881	\$	2,244,152	\$ 982,387	\$ 1,801,474
Corporate Commitment	\$ 2,062,000	\$ 623,211	\$	642,175	\$ 281,115	\$ 515,500
Total Program	\$ 49,620,951	\$ 18,426,216	\$	18,986,911	\$ 8,311,603	\$ 3,896,221

Table 7.3: NSW Proposal with single state items excluded

Note: Calculated as per Table 1 and shared according to the NSW proposal, but with costs for some river structures, assets, SIS and support programs (worth ~\$12.9m) to be met independently by jurisdictions (i.e. not through the MDBA).

7.4.5 Tables 1 and 2 highlight that the overall cost of managing the system assets and delivering the program activities is not a function of cost shares. Nevertheless, by assigning different system or local benefits to river assets this will change the respective state shares of the overall cost.

7.4.6 The effect of the NSW proposal is to make SA the largest contributor to RM operational budget. As noted in chapter 3, SA has the smallest water entitlement but has traditionally been willing to make a contribution to overall costs above that proportion reflecting the value they place on the water security it provides them with.

7.4.7 The NSW proposal also contemplated returning responsibility for assets to jurisdictions such that the costs associated with the asset are managed directly by the state and do not form part of the MDBA's budget. As can be observed in table 3 the total cost of the MDBA's works would fall from \$62.5m to \$49.6m. While this would reduce the budget of the MDBA it would not be a saving from an economy wide perspective as these costs would still need to be incurred by states to keep the asset serviceable. As noted in Attachment E the MDBA has advised that all assets currently contribute to the delivery of water shares and environmental outcomes.

7.4.8 Devolving responsibility for assets back to Contracting Governments could undermine the principle of shared responsibility and adversely affect the MDBA's capacity to efficiently deliver the required outputs of the river operations program.

7.4.9 The NSW proposal also required the cessation of programs or the devolution of a number of programs from the MDBA back to the states, including work on the BSMS, Cap implementation and water trading. This Review has attempted to assess the impact of devolving NRM and TLM activities from the joint programs, as proposed by NSW, this assessment indicates that MDBA expenditure on NRM/TLM would be reduced in 2014/15 from \$22.0m to \$2.4m (see section 7.6 and Table 7.7 for more detail).

7.4.10 Consideration of the merits of NRM/TLM activities is outside the scope of this Review which addressed cost shares and not the merits of joint activities. However, the Review notes that MDBA is required under the Agreement to undertake certain aspects of this work and the cessation or devolution of these programs would require amendments to the Agreement.

7.4.11 In assessing the NSW proposal to change the basis of allocating costs, consideration needs to be given to assessing whether the benefits derived from programs are benefits to the system (i.e. system-wide) or benefits that are available to specific locations. In part the NSW proposal appeared to rely on the proposition that where activities have a remediation objective then the cost of these activities should be met by the beneficiary of the program rather than the impactor.

7.4.12 In giving effect to an assessment of system-wide benefits it needs to be recognised that activities that produce system-wide benefits will also generate benefits at specific locations. The fact that a benefit is recognised at a specific location does not mean that is not also system wide benefit. For example, while river structures operate at specific locations along the river, which could mean that they are viewed as providing local benefits, they are however part of a complex set of assets which deliver water entitlements on a basin wide basis and address environmental externalities consistent with the impactor pays requirement of the NWI.

7.5 Other cost sharing scenarios

7.5.1 The terms of reference for this review require it to consider beneficiary and impactor attribution to assets as an input to the consideration of the cost sharing framework. As discussed in Chapter 5, assessing beneficiary and impactor attribution may not always be an appropriate means of recognising or allocating cost shares. This is particularly the case where the activity or service being delivered represents a bundle of services and where the assets operate as part of a complex system. In this context, assessing the role of individual assets is likely to give undue weight to local benefits as opposed to the provision of system-wide benefits.

7.5.2 Given the above mentioned caveat and taking account of advice received from Basin Officials that local benefits or greater local benefits may be now attributable to the Barrages and some of the Locks and Weirs the Review requested that the MDBA cost the impact of changing the categorisation of the Barrages, Torrumbarry and Euston Locks (from Category 1 to Category 2) as well as assigning a greater local benefit share to Locks 1, 10 and 11. The results of this modelling are shown in Tables 4, 5 and 6. 7.5.3 This modelling is intended to highlight the magnitude of the effects of reclassification and the extent to which costs are reallocated rather than the merits of the reclassification. The review also notes that while there is an arguable case that some category 1 assets are providing local benefits, there is also an argument that the role of some Locks and Weirs in delivering environmental flows means that their system-wide benefits may have increased.

		Asset Totals										
	2014/15 Budget \$ NSW		\$ NSW	\$ VIC		\$ SA			\$ Cwlth			
Current Arrangements												
River structures	\$ 36,445,241	\$	13,085,272	\$	11,892,370	\$	9,098,521	\$	2,369,079			
Salt Interception Schemes	\$ 8,336,600	\$	2,776,563	\$	2,609,893	\$	2,936,924	\$	13,180			
Environmental Works and Measures	\$ 1,583,140	\$	527,713	\$	527,713	\$	527,713	\$	-			
Support Programs	\$ 3,214,700	\$	1,369,005	\$	1,258,655	\$	532,040	\$	55,000			
Murray Mouth Sand Pumping	\$ 54,000	\$	13,500	\$	13,500	\$	13,500	\$	13,500			
Hydrometric Network	\$ 3,644,576	\$	1,573,166	\$	1,446,360	\$	611,383	\$	13,667			
RMW Office	\$ 7,205,894	\$	2,122,961	\$	1,962,297	\$	1,319,163	\$	1,801,474			
Corporate Commitment	\$ 2,062,000	\$	607,495	\$	561,520	\$	377,485	\$	515,500			
Total Program	\$ 62,546,151	\$	22,075,676	\$	20,272,308	\$	15,416,728	\$	4,781,399			

Table7. 4: Classify Barrages as Category 2 – 50% local benefit assigned to SA

			A	sset Totals		
	2014/15 Budget	\$ NSW		\$ VIC	\$ SA	\$ Cwlth
urrent Arrangements						
River structures	\$ 36,445,241	\$ 13,641,540	\$	12,448,479	\$ 7,986,143	\$ 2,369,079
Salt Interception Schemes	\$ 8,336,600	\$ 2,776,563	\$	2,609,893	\$ 2,936,924	\$ 13,180
Environmental Works and Measures	\$ 1,583,140	\$ 527,713	\$	527,713	\$ 527,713	\$ -
Support Programs	\$ 3,214,700	\$ 1,369,005	\$	1,258,655	\$ 532,040	\$ 55,000
Murray Mouth Sand Pumping	\$ 54,000	\$ 13,500	\$	13,500	\$ 13,500	\$ 13,500
Hydrometric Network	\$ 3,644,576	\$ 1,573,166	\$	1,446,360	\$ 611,383	\$ 13,667
RMW Office	\$ 7,205,894	\$ 2,122,961	\$	1,962,297	\$ 1,319,163	\$ 1,801,474
Corporate Commitment	\$ 2,062,000	\$ 607,495	\$	561,520	\$ 377,485	\$ 515,500
Total Program	\$ 62,546,151	\$ 22,631,944	\$	20,828,417	\$ 14,304,351	\$ 4,781,399

Table 7.5:Classify Torrumbarry and Euston Locks as Category 2 – 50% benefit assigned to
NSW/Vic (i.e. 25% each)

 Table 7.6: Increase assigned local benefit to 80 per cent for Locks 11, 10, 1

			Asset Totals		
	2014/15 Budget	\$ NSW	\$ VIC	\$ SA	\$ Cwlth
Current Arrangements					
River structures	\$ 36,445,241	\$ 13,431,955	\$ 12,327,693	\$ 8,316,514	\$ 2,369,079
Salt Interception Schemes	\$ 8,336,600	\$ 2,776,563	\$ 2,609,893	\$ 2,936,924	\$ 13,180
Environmental Works and Measures	\$ 1,583,140	\$ 527,713	\$ 527,713	\$ 527,713	\$-
Support Programs	\$ 3,214,700	\$ 1,369,005	\$ 1,258,655	\$ 532,040	\$ 55,000
Murray Mouth Sand Pumping	\$ 54,000	\$ 13,500	\$ 13,500	\$ 13,500	\$ 13,500
Hydrometric Network	\$ 3,644,576	\$ 1,573,166	\$ 1,446,360	\$ 611,383	\$ 13,667
RMW Office	\$ 7,205,894	\$ 2,122,961	\$ 1,962,297	\$ 1,319,163	\$ 1,801,474
Corporate Commitment	\$ 2,062,000	\$ 607,495	\$ 561,520	\$ 377,485	\$ 515,500
Total Program	\$ 62,546,151	\$ 22,422,359	\$ 20,707,631	\$ 14,634,722	\$ 4,781,399

7.5.4 This modelling highlights that changing the categorisation of assets has a relatively small impact on the overall cost shares particularly for both NSW and Victoria. Moving the Barrages from category 1 to category 2 (as shown in Table 4) would reduce NSW and Victoria's annual contribution to the MDBA budget by around \$433,000. Combining each of the scenarios produces an overall annual cost saving for NSW and Victoria of less than \$400,000. The order of magnitude for the financial impact on South Australia, however, is approximately twice that of NSW or Victoria. These outcomes are determined by reference to Table 7.1.

7.5.4 In view of the historical development of the cost shares arrangement and given the absence of any detailed engineering assessment it is questionable whether this outcome is appropriate.

7.6 Non-River Murray cost sharing options

7.6.1 The programs grouped under the non-River Murray funding headline were discussed both in the NSW 2012 proposal and in the workshop and phone hook-up with Basin Officials on 9 April. These programs were curtailed after the initial reduction in the NSW funding and only a small number of programs remain. The cost of the activities is shown in first column of Table 7. Three scenarios are provided in Table 7 to highlight the scope to adjust the cost of program based on the proposed 2014/15 budget.

7.6.2 Option 1 is the proposed 2014/15 budget developed by the MDBA, as discussed in Chapter 2. Option 2 sets out the programs that would be undertaken under the NSW 2012 proposal. This excludes water markets, The Living Murray, the MDFRC, River Murray Health, Indigenous Engagement and the policy budget for BSMS. It should be noted that the NSW 2012 proposal did not address Environmental Monitoring and Evaluation or Information and Data as those activities were not part of the NRM budget in 2012. After discussions during the course of the review, NSW advised that they would exclude those items as well, unless further information was provided as to the nature of the activities. Due to this, they have been excluded from the NSW 2012 proposal option, reducing the non-River Murray budget to \$2.406m (this does not include Corporate Overheads of \$4.48m).

7.6.3 Option 3 was developed after discussions with all jurisdictions on the non-River Murray programs and whether they felt they met the principles being developed for consideration of non-River Murray programs. Although NSW stated that they would not propose to include TLM in the budget, it is included in this Option as all other states agreed to its inclusion. There is a review process on TLM currently being undertaken that will inform any devolution of TLM to the states. Jurisdictions other than the Commonwealth generally agreed they would not be willing to fund the MDFRC. Environmental Monitoring and Evaluation and Information and Data were excluded as the jurisdictions did not have enough information on the activities included. River Murray Health and Indigenous Engagement were excluded as the jurisdictions felt they would need to re-test whether they still provided sufficient benefits to fund jointly. Option 3 reduces the non-River Murray budget to \$18.2m (net of corporate overheads).

7.6.4 The options have been developed using the current cost sharing model for non-River Murray projects, where Queensland and the ACT provide specific dollar amounts to fund projects of specific interest to them, where the other jurisdictions (including the Commonwealth) provide funding for the activities in equal proportions with a view to broader benefits than to specific state benefits. As such, where an activity was not supported by the states, it has been excluded in full. The option

exists, however, for non-River Murray funding to move to a system where other jurisdictions take on the Queensland/ACT approach and fund specific activities, with specific funding, with the option of only some states contributing to each activity, where they identify that the MDBA would be the costeffective service provider for a bilaterally or trilaterally funded activity.

	Option 1:		Option 3:
	Proposed	Option 2: NSW	Excluding items
	2014/15 Budget	2012 proposal	for re-testing
Current Arrangements	\$	\$	\$
Water markets	400,000	0	400,000
The Living Murray (total)	12,773,000	0	12,773,000
Murray-Darling Freshwater Research Centre	1,000,000	0	0
Environmental Monitoring and Evaluation	1,300,000	0	0
Water Quality and Salinity Management (BSMS)	2,000,000	1,022,000	2,000,000
River Murray Health	1,509,000	0	0
Core Modelling	950,000	950,000	950,000
Indigenous Engagement	1,509,000	0	0
Secretariat	434,000	434,000	434,000
Information and Data	132,000	0	0
Total NRM Program	22,007,000	2,406,000	18,157,000
Corporate Overheads	4,480,000	4,480,000	4,480,000
Total Programs	26,487,000	6,886,000	22,637,000

Table 7.7: Non-River Murray funding proposals

7.7 Principles to support a revised cost shares framework

River Murray operations

7.7.1 The role and purpose of the River Murray activities are discussed in Chapter 2 and the basis for sharing these costs are set out in Chapter 3. The consistency of the cost sharing arrangement with the NWI pricing principles is considered in Chapter 5. Aligning the costs shares for water storage and delivery activities, including recovery of environmental externalities, with a state's water entitlements is broadly consistent with the intent of the NWI. That said these costs do not incorporate an allowance for the capital employed in the delivery of the activities. There is broad agreement that these activities provide significant joint benefits and that the sharing of the costs for delivering these activities on the basis of each states water entitlement and diversions is appropriate.

7.7.2 The principal concern with the current cost share approach is the categorisation of the assets in terms of the extent to which an asset provides system wide or local benefits. It is not possible, however, to assess the merits of these concerns in a high level review. Nonetheless, these concerns do not affect the assessment that the current approach to cost sharing is broadly appropriate.

7.7.3 A new category of assets has been developed for environmental works and measures these works exhibit many of the same characteristics of SIS. The impacts on the environment of water extraction are a system-wide issue and the benefits of protecting these environments are available to the basin wide community not just to the local community. The Review notes that an equal cost share, rather than a cost share aligned to water entitlements, is appropriate in these circumstances.

7.7.4 This review has identified two refinements that could be considered in the context of the next review of the joint programs cost shares. First, a detailed engineering study is needed to assess the optimal mix of river structures required to deliver states' water entitlements and address the associated externalities from water extraction and river regulation over a 10-15 year planning horizon. This study would identify where current assets may no longer be required for the efficient operation of River Murray activities and any issues associated with decommissioning of assets.

7.7.5 Second, where the MDBA incurs costs in delivering local benefits in addition to the system wide benefits from river structures these costs need to be recovered from the local beneficiary. At a minimum the MDBA should recover the incremental cost of providing the local benefit. The revenues obtained from supplying local benefits should be netted off the MDBA's cost of river operations. If the second measure is adopted consideration could also be given to removing the distinction between category 1 and category 2 assets which have local cost shares attributed to them¹⁴.

Non-River Murray operations

7.7.5 The nature and purpose of the Non-River Murray operations (mainly natural resource management programs) is discussed in Chapter 2 and the arrangements for sharing these costs is set out in Chapter 3. The catchment wide scope of some of these programs means that both Queensland and the ACT have an interest in participating with the MDBA in the delivery of these activities.

7.7.6. Both Queensland the ACT note that their involvement in these joint programs is different to that of the southern states as they do not have the same focus on the River Murray. This means that their participation is limited to a narrow set of activities. Queensland advised that its interests related to Monitoring and Evaluation, Basin Salinity Management Strategy, and Secretariat. The ACT is interested in pest fish and the lessons learned from river restoration and Secretariat.

7.7.7 This Review explored with the Basin Officials the option of sharing these costs on the basis of water entitlements rather than the equal shares basis on which the NSW, Victoria, South Australia and the Commonwealth currently meet these costs. Queensland and the ACT contribute an agreed dollar amount toward the costs of these activities.

7.7.8 While the Basin Officials were not attracted to sharing these costs on the basis of a jurisdiction's water entitlements the Review notes that the other joint program activities fall within the NWI pricing principles category of Water Planning and Management Activities which the NWI recognises as costs which could legitimately be shared between water entitlement holders and governments. In two areas, policy related work in respect of interstate water trade and the Basin Salinity Management Strategy, the review has identified that the relevant costs are likely to fall under the category that the NWI principles consider should be met entirely by government. It is noted that the actual extent to which such costs are shared with water users is, subject to the NWI principles, a decision for jurisdictional governments and this review makes no recommendation in this regard.

¹⁴ The distinction between category 1 and category 2 assets appears to have been a distinction between assets needed for water supply (category 1) and assets required to restore river flow characteristics affected by upstream diversions (category 2) David Dole, General Manager, River Murray Water, MDBC February 1998 Development of the Murray-Darling Basin Commission's Water Business

7.7.9 Given the diverse nature of the non-River Murray joint activity programs this review sees merit in adopting a more flexible basis on which cost shares for these activities are established. The recommendation is that these activities be developed on an opt-in basis whereby each jurisdiction assesses its interest in and capacity to support the program. Conceptually, this is the basis on which Queensland and the ACT currently make their contribution to MDBA joint activity program costs. To support this approach the Review has identified four principles which would guide decisions to develop and to allocate cost shares for these types of joint programs. The principles are:

- An activity has tangible cross-jurisdictional benefits, or has been identified by jurisdictions as an activity to be undertaken by the MDBA to meet obligations under the Murray-Darling Basin Agreement;
- 2. The activity is complementary to the Basin Plan or associated strategy outcomes;
- 3. The activity has a clearly specified objective with measurable outcomes over a specified project life;
- 4. It is more cost effective to deliver the outcome as a joint program rather than by jurisdictions acting unilaterally.

7.7.10 In applying principles 1 and 2 the framework for establishing cost shares for the non-River Murray activities would be guided by the purpose of the Murray Darling Basin Agreement which is to coordinate effective planning and management for the equitable, efficient and sustainable use of the water and natural resources of the Murray-Darling Basin.

7.7.11 The proposed framework will allow jurisdictions depending upon their budget priorities and funding constraints to determine whether they will and or the extent to which they will participate in a joint activity. This will facilitate effective planning by allowing more flexibility in establishing programs. Moreover, funding commitments would be determined at the time the activity is approved and that would give the MDBA and the Contracting Governments' greater budgetary certainty. A potential disadvantage is that the equity objective of the Murray Darling Basin Agreement could be compromised by inappropriate cost shifting or 'free riding'.

7.7.12 The third principle supports effective project planning and is also designed to assist the MDBA and jurisdictions better meet the NWI commitment to publicly report the total cost of water planning and management activities undertaken by them. It will also enable periodic review of the effectiveness of each program and support decision making on matters including changes to program design and delivery (adaptive management) or discontinuance of programs that are no longer required.

7.7.13 The fourth principle promotes the efficient delivery of activities by ensuring that joint activities are only undertaken where it is cost effective to do so. By facilitating a mechanism for jurisdictions to act unilaterally or outside of the MDBA's coordinating role it needs to be recognised that this could limit access to Commonwealth funding for those activities. This principle is intended to be consistent with the position put by Victoria and South Australia that joint programs need to be considered as a total package and that some activities, while only offering limited benefit to some jurisdictions, will nonetheless provide an overall benefit to all jurisdictions.

7.8 Conclusions

7.8.1 This Review has assessed and costed options to change the current cost sharing arrangement. This modelling work assessed the impact on cost shares of recategorising assets and noted that this reassignment of categories is not likely to substantially change the contributions of NSW or Victoria to meeting the cost of delivering MDBA joint activity programs. The cost impact on South Australia of any change to the categorisation of river system assets is more substantial.

7.8.2 The Review found that the cost share arrangement for the River Murray operations is broadly consistent with NWI pricing principles which, among other things, seek to allocate the cost of addressing environmental externalities to water entitlement holders. This outcome could be improved by greater transparency in the way states recover their MDBA cost from their water entitlement holders.

7.8.3 The Review recommends assessing the role of river system assets (including salt interception assets) on the basis of their contribution to the delivery of system wide benefits rather than a consideration of whether they provide local benefits.

7.8.4 The Review has identified four principles to guide the development and sharing of costs for the non-River Murray activities. The adoption of these principles would result in a cost share framework which reflects the basis on which Queensland and the ACT currently contribute to the joint program activities.

Attachment A: Terms Of Reference

Possible fast-track review of cost shares for the joint venture

Terms of reference

- 1. Based on the relevant provisions of the National Water Initiative (particularly clause 64 and the pricing principles), develop a cost sharing framework for the joint activities by providing:
 - advice on the consistency of the cost sharing arrangements for the Contracting Governments assets and joint activities, including beneficiary and impactor attribution at the asset level and for the other joint activities and programs (e.g. the salt interception schemes), with the relevant provisions of the National Water Initiative; and
 - b. recommendations on any changes to the cost sharing arrangements for the Contracting Governments assets and joint activities, including beneficiary and impactor attribution at the asset level and for the other joint activities and programs (e.g. the salt interception schemes), as the result of changes in policy or operational environment since these cost sharing arrangements were last reviewed.
- 2. Develop and model a number of cost sharing scenarios for each broad class of asset and activity.
- 3. Facilitate closed door discussion and negotiation with jurisdictions (BOC and RoJAT members) to reach agreement on any changes to beneficiary and impactor attribution for:
 - a. the major storages Dartmouth, Hume, Lake Victoria, Lock 9; and Menindee Lakes,
 - b. the hydrometric network
 - c. Water Quality Monitoring
 - d. Barrages
 - e. Salt Interception Schemes
 - f. locks and weirs including, Yarrawonga, Torrumbarry, Euston
 - g. the new TLM works
 - h. TLM water entitlements
 - i. relevant river management programs such as;
 - River Murray Forest program, and
 - River Murray Riparian management program
 - j. RMO administration costs
 - k. River Murray revenue sharing, and
 - I. All other joint programs, including Murray-Darling Basin Authority administration costs

Timelines and outputs

1. Key dates:

- (a) Engage suitable negotiator/facilitator and technical support as required (must have economic and engineering expertise, deep knowledge of the joint programs and the NWI, inter-jurisdictional negotiations, and sufficient standing to lead these discussions) – February 2014
- (b) Consultancy to start 17 February 2014
- (C) Undertake analysis and conduct discussions with and through BOC to develop cost sharing principles by 7 March 2014
- (d) Modelling and analysis of cost share scenarios by 14 March 2014
- (e) Issue Draft Report to BOC 24 March 2014
- (f) BOC have till 4 April 2014 to consider the report
- (g) BOC meeting 8-9 April 2014 closed door workshop/negotiation to reach agreement on new cost shares
- (h) Final Report presented to BOC 24 April 2014 and to Ministerial Council
 30 April for consideration.
- 2. The outputs of the project are:
 - advice on the consistency of the cost sharing arrangements for the Contracting Governments assets and activities, including beneficiary and impactor attribution at the asset level, with the relevant provisions of the National Water Initiative;
 - (j) recommendations on any changes to the cost sharing arrangements for the Contracting Governments assets and activities, including beneficiary and impactor attribution at the asset level, as the result of changes in policy or operational environment since these cost sharing arrangements were last reviewed.

Summary of joint program cost shares as used in 2014/15 budget development.

		Invest %	igations	& Constr	uction %	Oper %	Operations & Maintenance %			
		NSW	% VIC	% SA	Cwith	NSW	% VIC	% SA	Cwlth	
RIVER STRUCT	URES									
Category 1a										
Vic	Dartmouth	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
Vic	Hume (Vic Component)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
NSW	Hume (NSW Component)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
Vic	Yarrawonga	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
Vic	Torrumbarry (Lock 26)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
Category 1b										
NSW	Euston (Lock 15)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
SA	Kulnine - Lock 9	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
SA	Lake Victoria (SA)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
NSW	Lake Victoria (NSW)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
SA	Barrages	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
NSW	Menindee (RMW 75%)	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%	
Category 2a										
Vic	Mildura (Lock 11)	35.8%	33.2%	6.0%	25.0%	47.8%	44.2%	8.0%	0.0%	
NSW	Wentworth (Lock 10)	35.8%	33.2%	6.0%	25.0%	47.8%	44.2%	8.0%	0.0%	
	, , , , , , , , , , , , , , , , , , ,									
Category 2b										
SA	Lock 8 - Wangumma	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 7 - Rufus River	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 6 - Murtho	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 5 - Renmark	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 4 - Bookpurnong	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 3 - Overland Corner	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 2 - Waikerie	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SA	Lock 1 - Blanchetown	17.1%	14.4%	43.5%	25.0%	22.8%	19.2%	58.0%	0.0%	
SALT INTERCEP										
Operation and	maintenance	25.00/	25.00/	25.0%	25.00/	22.20/	22.20/	22.20/	0.00/	
VIC	Barr Creek	25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%	
VIC		12.5%	62.5%	12.5%	12.5%	10.7%	00.7%	10.7%	0.0%	
	Pyramid Creek	25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%	
	Rurongo	25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%	
	Duronga River calinity monitoring	78.3%	7.3%	7.5%	7.3%	80.7%	9.7%	9.7%	0.0%	
		25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%	
SΔ		23.0% 25.0%	23.0% 25.0%	23.0% 25.0%	23.0% 25.0%	33.3% 32.2%	33.3% 32.2%	33.3% 32.2%	0.0%	
5A SA	Woolnunda	25.0%	25.0%	25.0%	25.0%	22.2%	22.2%	22.2%	0.0%	
SA SA	Waikerie	23.0% 21 5%	20.0%	25.0%	20.0%	33.3%	33.3%	33.3%	0.0%	
SA SA	Loxton	24.3% 21 5%	24.J/0 24.5%	20.3%	24.3% 21 5%	32.7%	32.7%	34.7%	0.0%	
SA	Bookpurnong	2 7 .3%	2- 1 .370 17 3%	20.0%	2- 1 .370 17 3%	22.7 <i>%</i>	22.7 <i>%</i>	54.0%	0.0%	
SA	Pike/Mundic	1,.5% 0.0%	0.0%	100 %	0.0%	0.0%	0.0%	100 %	0.0%	
SA	Murtho	24.5%	24.5%	26.5%	24.5%	32.7%	32.7%	34.7%	0.0%	

		Invest %	igations	& Constr	uction %	Operations & Maintenan %			ance %
		NSW	% VIC	% SA	Cwlth	NSW	% VIC	% SA	Cwlth
	Other (Performance monitoring,								
SA	DWLBC model maintenance and	05.00/	05.00/	05.00/	05.00/	<u> </u>	<u> </u>	<u> </u>	0.00/
Now Schomos	monitoring)	25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%
New Schemes	Byramid Creek	25.0%	25.0%	25.0%	25.0%	22.2%	22.2%	22.2%	0.0%
SA	Murtho	23.0% 24 5%	23.0% 24 5%	25.0%	23.0%	32.3%	32.3%	33.3 <i>%</i> 34 7%	0.0%
0,1		24.570	24.570	20.570	24.370	52.770	52.770	34.770	0.070
		Spec	ial cost sl	haring ag	greed	Cos	t sharing	assumed	l for
ENVIRONMEN	TAL WORKS & MEASURES OPERATIONS	unde	r IGAs – a	cost shar	es for	propos	ed 2014/	'15 budge	et - on-
\ <i>K</i> -	Currhammer	fu	ture I&C	not agre	ed	going	cost sha	res not a	greed
VIC	Gunbower					33.3%	33.3%	33.3%	0.0%
Vic	Hattab Lakos					33.3% 22.20/	33.3% 22.20/	33.3% 22.20/	0.0%
	Kaandrook (NSW Component)					22.2%	22.2%	22.2%	0.0%
SA	Lindsay Mullaroo Mulcra Is					22.2%	33.3%	33.3%	0.0%
SA	Chowilla					33.3%	33.3%	33.3%	0.0%
						00.070	001070	001070	0.070
SUPPORT PRO	GRAMS								
	River Channel Management	22 E0/	20.0%	17 60/	25.0%	12 20/	20 00/	16 00/	0.0%
Vic	Forest Water Management	32.5%	29.9%	12.0%	25.0%	45.5%	39.0%	16.8%	0.0%
NSW/	River Channel Management	32.5%	29.9%	12.0%	25.0%	43.3%	39.8%	16.8%	0.0%
NSW	Forest Water Management	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
SA	River Channel Management	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
SA	Forest Water Management	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
	Ũ								
Murray Mouth	Sand Pumping								
SA	Sand pumping	25.0%	25.0%	25.0%	25.0%	33.3%	33.3%	33.3%	0.0%
Hydrometric N	etwork								
Vic	River Gauging	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
NSW	River Gauging	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
SA	River Gauging	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
Vic	Water Quality	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
NSW	Water Quality	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
SA	Water Quality	32.5%	29.9%	12.6%	25.0%	43.3%	39.8%	16.8%	0.0%
RMW Office									
MDBA	Asset management - River Structures	29 5%	27.2%	18 3%	25.0%	29 5%	27.2%	18 3%	25.0%
WID DI	Asset management - Salinity	23.370	27.270	10.570	23.070	23.370	27.270	10.570	23.070
MDBA	Interception Schemes	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
	Asset management - Environmental								
MDBA	Assets	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
	Program management - hydrometric								
MDBA	network	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
MDBA	River operations (modelling)	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
MDBA	River operations	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
MDBA	Operations Improvement	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%
IVIDBA	KIVIW Contingency	29.5%	27.2%	18.3%	25.0%	29.5%	27.2%	18.3%	25.0%

	Invest	igations	& Constr	uction	Ореі	rations &	Mainter	nance
	%			%	%			%
	NSW	% VIC	% SA	Cwlth	NSW	% VIC	% SA	Cwlth
Corporate Commitment	29.5%	27.2%	18.3%	25.0%				

	% NSW	% VIC	% SA	% Cwlth	% Qld	% ACT
NATURAL RESOURCE MANAGEMENT PROGRAMS						
Water Markets						
Interstate Water Trade Policy						
The Living Murray						
Planning and delivery						
Barmah-Millewa Forest						
Gunbower/Koondrook-Pericoota Forest						
Hattah Lakes	After allow	ing for contr	ibutions fro	m Queenslan	d and ACT (wh	ich were
Mouth Coorong Lower Lakes	typicall	y negotiated	l based on r	elevant intere	est by each of t	hose
Chowilla Lindsay Walpolla	jurisdictio	n in the vari	ous NRM pr	ograms), the	balance of the	cost of
Program Management	NRM progr	rams are bee	en shared ed	qually betwee	en the Commor	nwealth,
Coord of Annual Enviro Water Planning, Allocation		NSW	, victoria ar	id South Aust	ralia.	
& Delivery						
Portfolio fees and charges						
Delivery Costs						
Noaelling						
Monitoring						
Barman-Millewa Forest						
Gunbower/Koondrook-Pericoota Forest						
Halldi Lakes						
Chowilla Lindsay Walpolla						
System Scale						
Intervention and Risk Compliance Monitoring						
Program Management						
rigrammanagement						
Murray-Darling Freshwater Research Centre						
Environmental Monitoring and Evaluation						
Water Quality and Salinity Management (BSMS)						
Policy, including reviews of strategy, Schedule B						
and End-of-Valley Targets						
Establishing and maintaining salinity registers						
Annual reporting of implementation of BSMS						
Audit and compliance						
Program Management						
River Murray Health						
River Murray and Mitta Mitta biological monitoring						
Mgt of alien fish including control of tilapia and carp						
Restore river environments to benefit native fish						
Program Management						
Come Mandalling						
Wantenance of Existing Models						
Indigenous Engagement						
MIDRIN						
State facilitators						

	% NSW	% VIC	% SA	% Cwlth	% Qld	% ACT
Program Management						
Secretariat						
Information and Data						
MDBA Corporate Commitment						

Attachment C: Recovery of states cost shares for MDBA joint activity programs and other water delivery charges water entitlement holders

This note provides an overview of the recovery by States of their contributions to MDBA joint activity cost shares by water entitlement holders in their states.

NSW

The cost of the state's contribution to the MDBA joint programs is recovered in part from NSW water entitlement holders through the charges State Water and the NSW Office of Water imposes on NSW water entitlement holders.

State Water is responsible for meeting the State's contribution to the River Murray operations from its budget while the NSW Office of Water is responsible for meeting the NSW government's share of MDBA natural resource management activities.

State Water and the NSW Office of Water determine the extent to which its contributions to the MDBA will be recovered from water uses and the extent to which these costs will be met by budget appropriation. IPART assessed the efficiency of the proposed charges.

In NSW the cost of providing water delivery services within the irrigation districts are determined by the member owned bodies and are not subject to oversight by IPART. These charges will be subject to the Water Charge (infrastructure) rules 2010 administered by the ACCC. IPART will continue to review charges collected by the NSW Office of Water.

Victoria

The cost of the state's contribution to the MDBA joint programs is recovered in part from Victorian water entitlement holders through payments from Goulburn-Murray Water (G-MW) to the Department of Environment and Primary Industries (DEPI).

The G-MW payment is based on principles which seek to apportion a share of the River Murray operation costs to G-MW's users. G-MW recovers these costs from its water users, and provides this as an annual reimbursement payment to DEPI at the conclusion of each financial year.

The charges G-MW imposes on its water users are assessed by the Essential Services Commission (ESC). The ESC has been accredited under the *Water Act 2007* (Cth) to perform the ACCC's role with regard to assessing the efficiency of the costs consistent with the Water Charge Infrastructure Rules 2010. The ESC treats the DEPI charge as an operating expense but does not seek to assess the efficiency of the charge.

South Australia

The cost of the state's contribution to the MDBA joint programs is recovered in part via the Save the River Murray Levy. An annual payment is made by SA Water to cover the cost of water planning and management activities. The payment makes an allowance for SA Water's licence share of half the MDBA contribution.

All of South Australia's irrigation trusts (except Renmark) operate under the *Irrigation Act 2009*. The main purpose of this Act is to provide an overarching framework for management and operation of shared infrastructure for irrigation or drainage purposes associated with primary production in the State. Renmark Irrigation Trust continues to operate under the *Renmark Irrigation Trust Act 2009*. Both Acts can be regarded as having similar outcomes and processes.

Individual boards make all decisions on rates for water supply and drainage in their districts and recovering capital expenditure. It is the responsibility of each trust to be able to fund the replacement of their individual assets. A trust can impose water supply or drainage rates to cover the costs of supply of the service, maintenance and to provide for future capital costs connected with the provision of irrigation and drainage systems as well as the trust's other liabilities.

As irrigation infrastructure operators within the Murray Darling Basin, these boards are now also required to comply with the relevant elements of the Water Charge (Infrastructure) rules administered by the ACCC.

Attachment D: MDBA Cost Shares Review Workshop Summary Notes

Context

The work shop is intended to exchange views and is not designed to make formal decisions. Now that the IGA on the Basin Plan has been signed by all Basin States, it is appropriate to address the issue of the intersection between the Basin Plan and the joint activities. Any decision on cost shares will also be influenced by the decision on the review of the efficiency of joint programs and the implications of the constrained fiscal positions of all jurisdictions.

Overarching comments on joint activities

Joint activities are part of an arrangement to coordinate the management of water resources, to ensure water quality standards and for environmental protection. They are integrally linked to the Basin Plan, with the Basin Plan assuming that certain joint activities, e.g. the operation of TLM environmental works and measures, will take place in a certain way (the Basin Plan makes no assumptions about the funding of those activities).

Joint activities have reduced the need for jurisdictions to undertake mitigation works on an individual basis.

The joint programs also provide a mechanism to address issues on a collective basis that can provide cost effective measures to address common issues.

There is a concern that joint activities can overlap with the responsibilities of state water authorities and that similar outcomes could be achieved by service level agreements with state water authorities.

NRM

ACT saw a need to engage in activities which had effects beyond the Territory e.g. water quality, salinity and native fish. They saw value in participating in joint programs and would like to continue involvement, where the programs offered benefits to the ACT and more broadly. They noted that, due to there being no RMO assets or irrigation activity in the ACT, NRM activities would be the only activities that would benefit the ACT, with particular interests in water quality and aquatic ecology.

Qld wants consideration of jointly funded NRM activities that address Basin-wide issues and provide Basin-wide benefits and value. They noted that they are particularly interested in future programs that would link to the Basin Plan e.g. BSMS and bio-monitoring (next generation SRA). It noted that there needed to be a shared commitment to the program and the value of the activity.

Rationale for joint programs

The rationale for and/or likely operation of joint programs has been impacted by the development of the Basin Plan and the associated decision(s) to recover and use water for environmental purposes.

While this proposition is acknowledged at the broadest level of generality there is not agreement in terms of the detail. NSW values the partnership and the framework for addressing new and emerging issues, but would prefer a situation where greater responsibility for the management of river system assets was held by state authorities and feels that issues have been taken into the joint activities when they do not fit elsewhere. Victoria sees merit in maintaining the capacity for the joint development and management of issues, more consistent with the status quo, and recognising the shared values and responsibilities of the partnership and the possibility of emerging issues to be addressed jointly. SA recognises the value of the whole of Basin approach and the cost effectiveness and benefits of joint programs but also note budgetary constraints. The Commonwealth notes that NRM programs within joint activities will come and go, as will emergency situations, and that the principles underlying joint activities need to recognise this unpredictability.

All jurisdictions agreed that it is appropriate to reassess the basis on which joint programs currently operate, in essence to establish if the rationale for a joint program is still extant along with the basis for funding the activity.

It was also noted that if the current basis for cost shares was to change then this consideration would have to focus on what had changed since the last review of cost shares. Moreover, while the attribution of costs to the beneficiary is an appropriate basis for assigning costs shares the review needed to take a broad view of the beneficiary pays concept, given the physical and financial peculiarities inherent in the current partnership as they relate to asset purpose and ownership.

Decision rules around joint activities

Joint activities need to be developed on a collaborative basis and address the key objective of securing delivery of each jurisdiction's water entitlements and, where feasible, the maintenance of water quality to deliver a healthy and productive river system. They also need to be complementary with the BP. In addition joint activities should be monitored and evaluated. Monitoring and evaluation should inform Basin governments to enable unilateral or joint response to events as they occur. They also need to look at what "Basin-scale" may mean, including coherence, scale, complementarities, efficiency, equity and spillovers of issues across state borders.

High level principles for determining whether an activity's costs should be part of the joint program:

- The activity should have tangible cross-jurisdictional benefits, or enable cross jurisdictional obligations to be cost-effectively fulfilled;
- The activity/program has a clearly specified objective (with agreed performance measures) and project life (including identification of triggers to exit the activity/program)
- All contributing jurisdictions receive some benefit over the life of the program, though the nature of the benefit does not have to be the same
- It is more cost effective to deliver an agreed program/activity jointly rather than by jurisdictions acting unilaterally
- The package of activities/programs must be affordable and consistent with the priorities of each jurisdiction (even though individual activities may not be a priority for all jurisdictions)

• The cost shares of the program are agreed as part of the decision to commission.

There was general agreement that it continued to be appropriate to share the cost of RMO on the basis of a state's water entitlements and river diversions. These criteria did not directly lend themselves to sharing the cost of the SIS or TLM. In relation to the latter equal shares was seen as potentially appropriate, providing the activity satisfied the principles for joint activity. NSW noted that the cost of SIS and RMO assets should be determined by the application of a beneficiaries pays principle.

It was agreed that the following matters need to be considered when determining whether the assets or programs should be undertaken as joint programs or whether they should be discontinued, decommissioned or devolved to the Basin states.

- What was the originating objective for operation of the asset/program?
- Is that still the objective? If not, what objective now applies to the operation of the asset/program?
- Is the continued operation of the asset/program still the most effective way to meet the objective or the amended objective?
- Is there the option of reducing use/mothballing the asset or winding up the program and still being able to meet the objective?
- If decommissioning the asset/ending the program is an option, what are the future risks that may arise?
- Applying the precautionary principle based on the risk assessment, should the asset/program be ended or devolved out of the joint programs? If not, can trigger points be identified for a future exit from the asset/program?
- If the asset/program is to be decommissioned or ended, what is the exit strategy?

RMO

The MDBA outlined the role of river system assets in delivering the jurisdictions' water sharing agreement. The role of river system assets has changed over time. The weir pools created by locks and weirs are being used to deliver environmental flows to Icon sites under TLM and to state priority wetlands and noted that, without the locks and weirs, there may be no affordable way to get water onto flood plains via gravity feed. They also noted that, without the Barrages, there would be periods when the Lower Lakes would be hypersaline (even with the Basin Plan) and that Adelaide's water supply depends on the Barrages to protect water quality at the pump offtakes. The MDBA is to provide additional advice on the operation and benefits of RMO assets. NSW said consideration could be given to the merits of reviewing Lock 15, Torrumbarry and Yarrawonga in the joint asset base.

SIS

The program was discussed in order to assess the principles for identifying system wide benefits. A system wide objective was identified (the salinity level at Morgan). It was not possible, at the workshop, to determine if the current program was the most cost effective means of achieving the objective. The Basin salinity program is currently being reviewed – the MDBA advised that preliminary work suggests that around 65% of SIS assets need to be working currently to meet salinity target, but this would rise to 80% by 2050. This cost share review may provide principles which will allow a framework for considering the continued joint operation/funding of the SIS after the BSMS review is complete.

TLM

Concerns were raised with the development of this activity, its objective and its capacity to duplicate other Basin Plan obligations, while recognising that TLM programs are built into the assumptions that underpin the Basin Plan. The discussion also highlighted the need for arrangement to consider O&M for Environmental Works and Measures which are in the process of being commissioned, including potential cost sharing arrangements. The Commonwealth noted that TLM had many different programs and activities and each needed to be considered separately against the above criteria.

NWI Principles

It was noted that NWI principles were agreed in 2004 and were intended to give effect to the principles of user pays. The objective is to improve economic efficiency and transparency.

NSW, Vic and SA each operate user pays to varying degrees but no jurisdiction fully recovers its contributions to the MDBA. In the view of the consultants, the basis on which jurisdictions levy user charges are not consistent nor are they likely to be assessed as being strictly compliant with NWI principles. The Commonwealth noted that it is unable to cost recover from users.

Jurisdictions have not in the past sought to recover the opportunity cost of their investments in the joint assets managed by the MDBA. As a consequence user charges do not incorporate an allowance for the depreciation of assets used by the MDBA to deliver water entitlements.

Attachment	E :	Review	of	assets:	pur	poses	and	uses
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		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
RIVER	R STRUCTURES				
Catego	ory 1a				
Vic	Dartmouth	Core storages, essential to conserving and regulating flows in order to provide each state with its share of water as per the MDB Agreement. Provides potential	Defined by the Australian National Committee on Large Dams (ANCOLD) as "extreme hazard" dams which require very conservative management as failure could result in large loss of life and extensive damage to property and economic activity.		Yes
Vic	Hume (Vic Component)				
NSW	Hume (NSW Component)	energy of stored water to ancillary hydro- electric schemes. Provides water based recreational opportunities.			Yes
Vic	Yarrawonga	On river storage, essential to the operation of the River Murray System and critical to the delivery of state water shares. Allows water to be diverted to Mulwala Canal (NSW) and Yarrawonga Main Channel (Vic) (about 50% of diversions). Harvests and re-regulates inflows from Kiewa R (MDBA shared resource) and Ovens R (Vic tributary). Significant contribution to overall system yield and hence state shares. Also allows diversion of water around Barmah choke via Mulwala canal, assisting in overcoming delivery constraints that would otherwise limit deliveries to all jurisdictions downstream of the Choke in some years. Includes ancillary hydro scheme. Provides water based recreational opportunities, aesthetic values, increased property values.	Without coordinated management in conjunction with other Category 1 assets, and depending on utilisation of Category 1 assets the costs of managing the River Murray System would be likely to be higher, potentially affecting reliability of supply for users. Operational variability constrained for recreational, tourism and aesthetic reasons.	100% system wide	Yes

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
Vic	Torrumbarry (Lock 26)	To maintain agreed water levels for local water diversion for private and public supply (irrigation - both gravity and pumping, urban, industrial and stock and domestic) including via the National Channel (into Vic, for both irrigation and the environment, incl. Gunbower Forest and the Kerang Lakes) and the channel into the Koondrook-Perricoota Forest, a TLM Icon Site (the second largest off-take in the River Murray System). Provides for navigation, tourism and water based recreational opportunities.	Navigable depth requirements under MDB Agreement.		Possibly. Uses have changed. New e-works.
Catego	bry 1b				
NSW	Euston (Lock 15)	To maintain agreed water levels for local water diversion for private and public supply (irrigation - both gravity and pumping, urban, industrial and stock and domestic). Can be used (to some extent) as a mid-river storage, and can thereby assist in alleviating channel capacity constraints. Can also be used to cycle releases on a weekly basis to match downstream demands, which increase on weekends when electricity prices are low. Lock enables navigation and also provides for tourism and water based recreational opportunities.	Navigable depth requirements under MDB Agreement. Potential future management regime to meet environmental needs (of local/Hattah lakes)	100% system wide	Yes.

		Current Purpose/Uses	Operational constraints	Current Cost sharing	ls current use consistent w 2006 cost sharing?
SA	Kulnine - Lock 9	To maintain agreed water levels to divert water into Lake Victoria and hence is essential to the operation of the River Murray System and critical to the delivery of state water shares. Also facilitates local water diversion by pumping for irrigation - and stock and domestic. Lock enables navigation and also provides for tourism and water based recreational opportunities. '- 2012/13 Lockage data: # lockages =353; # vessels = 479; # passengers = 1156	Without coordinated management in conjunction with other Category 1 assets, the costs of managing the River Murray System would be likely to be higher. Navigable depth requirement under MDB Agreement. Lake Culluleraine has a high offtake from the pool, therefore it cannot be drawn down too low		Yes
SA	Lake Victoria (SA)	Mid river storage essential to conserving and regulating flows in order to provide each state with its share of water as per the MDB Agreement. Lake Vic reduces the risk of the upstream states being subjected to channel capacity constraints during peak periods, whilst also meeting their obligation to supply SA with its entitlement.	Without coordinated management in conjunction with other Category 1 assets, the costs of managing the River Murray System would be likely to be higher. Cultural heritage issues, are managed through the Lake Victoria Operating Strategy (LVOS).		Yes
NSW	Lake Victoria (NSW)	Manage fringing lands to comply with the Aboriginal Heritage Impact Permit (AHIP)			
		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
-----	--------------------	--	--	-------------------------	---
SA	Barrages	Prevents sea water ingress into Lower Murray. Allows for upstream diversions without jeopardising freshwater supply to Adelaide. While the additional environmental flows to be recovered under the Basin Plan will improve the ability to avoid high salt loads in the Lower Lakes on average, the Barrages would still be required in most years, although for a shorter time each year (i.e. as an insurance asset). Locks provide for navigation between the lakes and the sea. '- 2012/13 lockage data: # lockages =2292; # vessels = 3465; # passengers = 26892	The environmental outcomes to be achieved under the Basin Plan (including target water levels for the Lower Lakes – Schedule 5, (2)(b)) were based on the assumption that existing infrastructure including the Barrages would remain in operation. High salinities in lake impact on local and regional water diversions Low lake levels result in significant impacts on local amenity, recreational, tourism, navigation values	100% system wide	Yes Frequency of need will be reduced somewhat when Basin Plan is implemented, but increasing national environmental interest.
NSW	Menindee (RMW 75%)	Core storage, key to supplying South Australia's entitlement, and reducing channel capacity constraints in the mid Murray during the peak irrigation season.	Owned by NSW, leased by MDBA, control reverts to NSW when level drops below 480 GL.	100% system wide	Yes

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
Catego	Category 2 Generic to Category 2 - details for individual locks and weirs follow.		s for individual locks and weirs follow.		
		To maintain agreed water levels for local water diversion for private and public supply (irrigation - both gravity and pumping, urban, industrial and stock and domestic). Provides for navigation, tourism and water based recreational opportunities, aesthetic values, and increased local property values. Increasingly, they are becoming integral to environmental operations. A number of weirs can be raised to enhance the area inundated during an unregulated flow, or lowered to create variation in the water level and to allow the draining of permanently inundated areas. Environmental works utilise the weir pools to provide e-water to nearby environmental assets during regulated periods, so that watering can be achieved at appropriate frequencies, without being dependent on flood flows. All locks and weirs have been fitted with a fishway.	Current Purpose/UsesOperational constraintsCtGeneric to Category 2 - details for individual locks and weirs follow.ain agreed water levels for local version for private and public rrigation - both gravity and , urban, industrial and stock and , urban, industrial and stock and b). Provides for navigation, and water based recreational nities, aesthetic values, and d local property values. ugly, they are becoming integral to nental operations. A number of to a low the draining of emuty inundated areas. nental assets during regulated so that watering can be achieved priate frequencies, without being nt on flood flows. and weirs have been fitted with aDecommissioning any of the locks and weirs would disrupt supply to water users (including environmental assets during regulated so that watering can be achieved priate frequencies, without being int on flood flows. and weirs have been fitted with aDecommissioning any of the locks and weirs would disrupt supply to water users (including environmental assets during regulated so that watering can be achieved priate frequencies, without being int on flood flows. and weirs have been fitted with aDecommissioning any of the locks and weirs would disrupt supply to water users (including environmental works would be required to achieve the same level of environmental outcomes.CtIt al houseboat and tourism activities and a marina. th aesthetic values.Navigable depth requirements under MDB Agreement.StNavigable depth requirements under MDBDecommismance activities and a marina.St		
Category 2a					
Vic	Mildura (Lock 11)	Substantial houseboat and tourism boating activities and a marina. Significant aesthetic values resulting in increased property values.	Navigable depth requirements under MDB Agreement.	50% system wide; 50% local beneficiary	Yes

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
NSW	Wentworth (Lock 10)	No e-works.	Navigable depth requirements under MDB Agreement.	(25% NSW, 25% Vic)	

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
Catego	ory 2b				
SA	Lock 8 - Wangumma	 2012/13 Lockage data: # lockages =219; # vessels = 335; # passengers = 807 New E-work which waters Mulcra Island (1000 ha) 			
SA	Lock 7 - Rufus River	 2012/13 Lockage data: # lockages =219; # vessels = 365; # passengers = 798 -Lindsay River 23 km flowing habitat and Mullaroo Creek flowing habitat 		50%	
SA	Lock 6 - Murtho	 - 2012/13 Lockage data: # lockages =988; # vessels = 1382; # passengers = 5691 -Significant E-works which water Chowilla floodplain (9000 ha) 			
SA	Lock 5 - Renmark	 2012/13 Lockage data: # lockages =630; # vessels = 761; # passengers = 3867 2 marinas Proposed e-works which will water Pike Floodplain (funded works 1500 ha) 	Agreement, and to facilitate use of environmental works/improve within channel health. Focus on local environmental management has recently increased.	wide; 50% local beneficiary (50% SA)	. Uses have changed. New e-works.
SA	Lock 4 - Bookpurnong	 - 2012/13 Lockage data: # lockages =837; # vessels = 1389; # passengers = 6037 - Proposed e-works which will water Katarapko Floodplain (funded works) 			
SA	Lock 3 - Overland Corner	 - 2012/13 Lockage data: # lockages =643; # vessels = 1105; # passengers = 4022 -Small e-works which water Banrock wetlands (Ramsar) 			
SA	Lock 2 - Waikerie	 - 2012/13 Lockage data: # lockages =622; # vessels = 860; # passengers = 3781 -facilitates watering of Schillers Lagoon 			

SA	Lock 1 - Blanchetown	 - 2012/13 Lockage data: # lockages =657; # vessels = 1090; # passengers = 12408 -No e-works. 	Navigable depth requirements under MDB Agreement.		Yes
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		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
SALT	INTERCEPTION SCHEMES				
Vic	Barr Creek				
Vic	Mildura-Merbein			For loint	
Vic	Pyramid Creek			shared works:	
NS W	Mallee Cliffs			O&M 33% each to NSW.	
NS W	Buronga	Interception and disposal of saline inflows to River Murray. The ongoing need for all of the schemes may have reduced as a result of increased	Subject to current general review of Salinity. Subsequently the ongoing role, composition and operation of each of the SIS can be reviewed. Note that schemes cannot be turned on and off	Vic and SA I&C 25% each	
NS W	River salinity monitoring			to NSW, Vic, SA and Cwlth	
NS W	Upper Darling			(based on a "no fault"	Yes
SA	Rufus River	dilution under the Basin Plan.	intermittently without ongoing maintenance.	basis.).	
SA	Woolpunda			Note some SIS	
SA	Waikerie			also have a	
SA	Loxton			pre-baseline	
SA	Bookpurnong			or local	
SA	Pike/Mundic			component	
SA	Murtho			iunded by the relevant jurisdiction.	
SA	Other (Performance monitoring, DWLBC model maintenance and monitoring)	Ensures effective and efficient functioning of SIS.			

		Current Purpose/Uses	Operational constraints	Current Cost sharing	ls current use consistent w 2006 cost sharing?
TLM	ENVIRONMENTAL WORKS				
AND	MEASURES				
Vic	Gunbower		All works (except Hattah Lakes)	Proposed to MC - Meeting	
Vic	Koondrook (Vic Component)	To facilitate watering of TINA loop Cites wing	are dependent on a weir pool	9 – 15 November 2013,	
Vic	Hattah Lakes	To facilitate watering of TLW Icon Sites using	to allow for gravity diversions.	Item 8 para 11(g), for	
NS		during low to modium river flows therefore	Without investment in O&M of	2014/15 only O&M 33%	
W	Koondrook (NSW Component)	allowing more natural watering regimes to	these assets, unable to deliver	each to NSW, Vic and SA,	N/A
SA	Lindsay, Mullaroo, Mulcra Is	he reinstated with minimal impact on	the environmental outcomes	with the issue of ongoing	
54	Chowillo	diversions.	that governments have already invested billions of dollars in achieving.	shares to be addressed as part of the cost shares review.	

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
SUPPO	RT PROGRAMS				
River M	urray Environment				
Vic Vic NSW SA	River Channel Management Forest Water Management River Channel Management Forest Water Management River Channel Management	Stabilise and restore sections of river channel. Implement land and on- water management associated with the River Murray system infrastructure and reservoirs as per approved plans. Distribute overbank flows through forests by operating and maintaining Edward River offtake and regulators within Barmah-Millewa, Gunbower and Koondrook Forests. Provides for the ability to transmit water via Mulwala Canal.	Without operation of these assets, water sharing in Murray valley would be at risk with potential restrictions or rationing for water users. These assets are aging but are expected to play an increasing role in delivering environmental water. Discontinuing the program would undermine community confidence that we will take responsibility for the negative impacts of regulated water delivery	As per Categ 1 assets. 100% system wide	Yes
Murray	Mouth Sand Pumping				
SA	Sand pumping	Monitoring and investigation of the status of the Murray Mouth; dredging as required to maintain target connectivity to the sea at the Murray Mouth.	The environmental outcomes to be achieved under the Basin Plan were based on the assumption that the Murray Mouth remains open. Frequency and duration for which intervention is required will diminish due to the increased flow to the sea under the Basin Plan.	In 2002 agreed to split costs equally four ways (25% each to NSW, Vic, SA, Clth).	Yes
Hydrom	etric Network				
Vic	River Gauging	Provides data to meet contemporary standards and business needs,	Without the core hydrometric network, water sharing in	As ner Categ 1 assets	
NSW SA	River Gauging River Gauging	including real time river levels, flows, storage volumes and some water quality. Essential to the operation of	Murray valley would be at risk with potential restrictions or rationing for water users, or	100% system wide	Yes

		Current Purpose/Uses	Operational constraints	Current Cost sharing	Is current use consistent w 2006 cost sharing?
		the River Murray System and critical to the delivery of state water shares.	potential increased system losses as a result of basing decisions on assumptions rather than accurate data.		
Vic	Water Quality	Provides for the knowledge of River	Without the parameters		
NSW	Water Quality	informed or revised river operation	be unable to meet Basin Plan		
SA	Water Quality	procedures that better meet water quality targets.	requirements to 'have regard to' water quality.		
RMW O	ffice				
MDBA	Asset management - River Structures	To equitably, efficiently and effectively manage, operate and	Requires corporate support, and interaction with partner		
MDBA	Asset management - Salinity Interception Schemes	sustain the River Murray assets to deliver states' water allocations and	governments.	Commonwealth	
MDBA	Asset management - Environmental Assets	environmental outcomes in the River Murray system.		contributes 25% (as per I&C).	
MDBA	Program management - hydrometric network			Stats share remainder in accordance with overall	Yes
MDBA	River operations (modelling)			O&M and I&C shares.	
MDBA	River operations				
MDBA	Operations Improvement				
MDBA	RM Contingency				