



20th December 2010

Mr Tony Windsor MP, Chair
House of Representatives Standing Committee on
Regional Australia
PO Box 6021
Parliament House
CANBERRA ACT 2600

Dear Mr Windsor

REAL SOLUTIONS FOR A BETTER BASIN

On behalf of the Board of 'Water for Rivers' I would like to present the following submission to the Standing Committee on Regional Australia in support of its review and deliberation of the socio-economic impact of the proposed Murray-Darling Basin Authority's Guide to the Proposed Basin Plan.

Water for Rivers - a public company established in 2003 by the Australian, Victorian and NSW Governments - is currently operating a successful collaborative delivery model on the ground to pursue some genuinely innovative water projects, while delivering better solutions and outcomes for regional communities.

Real solutions for a better Basin are essential to break the current nexus to provide for more collaborative and accountable water use in the journey to a lower water future - for both the irrigation sector and for the future long term health of the Basin.

It is 'Water for Rivers' experience through its operation, and partnership infrastructure projects with the irrigation community, that smarter use of water will deliver better solutions and outcomes for the Basin Community as well as meeting environmental watering targets.

This work and experience has been captured in our Submission for the Committee's consideration. Particular consideration has been given to the options for water-saving measures across our river valleys and in terms of ensuring an effective role of government in delivering triple bottom line outcomes for regions across the Basin. It is essential to align water recovery with effective water reform in partnership with communities, leaving a legacy for productive water use and water for the environment.

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The success of the Company over recent years has recently been captured in a review of its operating model to provide government with an understanding of the benefits of this 'commercial business model' and its suitability for the delivery of many regional government initiatives. We request that the full review (Attachment 3) of the submission remain 'confidential' for the purpose of this inquiry.

In summary, Water for Rivers is providing innovative solutions to water management while delivering its targets ahead of time, within budget and with strong community support.

We hope the key learnings of our experience to date assist the Committee in its final report to parliament.

We look forward to the opportunity to present before the Standing Committee.

Yours sincerely,

Richard TM Bull
Chairman

Submission to the:
Inquiry into the impact of
the Murray-Darling Basin Plan
in Regional Australia

December 2010



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Executive Summary

Water for Rivers - a public company established in 2003 by the Australian, Victorian and NSW Governments - has an objective to recover water principally through water savings projects that leave behind a regional legacy of water use efficiency and increased agricultural productivity.

This was evidenced by the Productivity Commission's Research Report on *'Recovering Water in the Murray-Darling Basin'* which highlighted the success and cost effectiveness of the Water for Rivers program, using an expertise-based public corporate entity, with community support.

That is, a smarter use of water will deliver better solutions and outcomes for the Murray Darling Basin (the Basin) as well as meeting environmental watering targets, rather than simply looking at 'bridging the gap' through purchase alone, in absolute quantity terms.

Around 70 - 80% of water recovered by Water for Rivers has resulted from regional projects and investments. This establishes a legacy of infrastructure to improve the sustainability of regional farms and communities - helping them respond to the significant adaptive challenges they are facing due to prolonged drought and the prospect of a lower water future.

The purpose in referencing our project experience and triple bottom line outcomes to the Standing Committee on Regional Australia is to highlight some of the 'key learnings' of our recovery experience to-date, which should be taken into consideration by this Inquiry in framing its deliberations to minimise regional impact of the forthcoming Basin Plan. These are outlined in response to terms of reference 1 (TOR 1).

Water for Rivers has been involved in numerous projects directed at recovering water within very tight investment constraints, in both Victoria and New South Wales. The foresight by governments to establish a public company with three major shareholders and objectives by which the company operates through a Deed Agreement, has delivered significant regional dividend. At the same time this has required predominant water recovery through the implementation of cost effective infrastructure based projects, yielding an average recovery hurdle rate of \$1500/ML – a figure on par and in some cases below that of direct water purchase costs.

Based on Water for Rivers' experience, cost effective and efficient water recovery can be achieved to provide community certainty for our environmental and irrigation future. To shy from this, is to fail to recognise the importance of water recovery alignment with water reform and the need for positive adjustment of our basin irrigation regions.

It is painfully simplistic to ignore the validity of this form of investment and the model used to deliver this initiative, because without it, regional communities will find it difficult to understand – let alone agree to – the necessary impacts of the proposed valley Sustainable Diversion Limits (SDL's) when they are introduced.

Recovering water for environmental flows in a situation where landholders face unprecedented scarcity and uncertainty of water supply has demanded win:win innovative solutions.

Water for Rivers has exploited the extensive experience and knowledge of its team and its ability to collaborate on the ground with landholders to pursue some genuinely innovative projects. Those projects outlined in Attachment 1 of this submission have successfully deployed new technologies and commercial arrangements to recover water for the environment while delivering economic and social benefits to regional landholders and communities.

These innovations and outcomes are replicable on other water recovery projects and river systems. The exemplary project demonstrating this is the recently commissioned Murrumbidgee Project - Making the Murrumbidgee System work better for everyone, summarised in terms of reference 2 (TOR 2) and further outlined in Attachment 2

Water for Rivers is currently operating as a successful government model which is already delivering its targets ahead of time, within budget and importantly with strong community support.

The success of the Company Enterprise over recent years has led the Water for Rivers Board to recently commission an independent review of its operating model so as to provide government with an understanding of the benefits of this 'commercial business delivery model' and its suitability for the delivery of regional government initiatives.

The 'key ingredients' that make up the success of this model have synergy together and should be applied to the future recovery of water in the Basin. To cherry pick these key elements would compromise this synergy and recovery delivery outcomes and benefits. The outcomes of this review are summarised in response to terms of reference three (TOR 3) and the full report is provided (in confidence) in Attachment 3.

Introduction

Managing Water Scarcity

The prolonged drought has substantially challenged water resource management and heightened tensions between alternative water users (consumptive and environmental).

The drought has led to record low inflows to streams in the southern Murray-Darling system and the Snowy River. Furthermore, decreased catchment inflows and significantly reduced storage levels have increased economic structural pressure on irrigation system management and modernisation, and long-term urban water security.

This situation has challenged the ability of existing water management organisations and businesses to reform water delivery using available resources while limiting their ability to proactively plan for the future and the structural changes that are occurring in our irrigation communities.

This increased attention to water resource management has also shifted the debate away from a narrow, regionally-focussed 'irrigation versus environment' paradigm. Now a mainstream issue it is considered from a national perspective in the context of a potential climate change crisis.

In these circumstances, the ability of regional communities to accept the rapid changes occurring in the water industry is being stretched – not only from a supply and security perspective but in terms of regulatory reform of the sector and the ability to meet new water industry standards.

Despite all of this, many water users are aware of the benefits of reform and support healthy rivers and water efficiency measures as they strive to maintain viable agricultural enterprises.

The demographics and location of our irrigation industries are undergoing major changes. Even so, the sector remains key to the social and economic fabric of our regional communities.

With this in mind, a solution to the challenge of water scarcity in the Murray Darling Basin needs to account for the needs of regional communities, in reasonable balance to the needs of the environment. Change can only be achieved through a well devised transition strategy and implementation plan, so that regional communities are provided with the business certainty necessary to support our future regional irrigated agribusinesses (domestic and export).

In summary, if water reform is to be achieved in the Murray Darling Basin, managing uncertainty and ensuring recognised benefits for all will be integral to developing a 'positive partnership' with Basin irrigation communities.

Background

Water for Rivers

In 1998 the Snowy Water Inquiry was held in response to the proposed corporatisation of the Snowy Mountains Hydro-electric Authority. Over the course of the Inquiry, environmental impacts of the Snowy River Scheme on the Snowy and Murray River systems became evident.

In response to these findings, the Victorian, NSW and Commonwealth governments committed to recovering water to increase environmental flows in the Snowy and Murray River systems. Through a signed Heads of Agreement, the three governments confirmed the outcome of the Snowy Water Inquiry and outlined requirements for this in the Snowy Water Inquiry Outcomes Implementation Deed (SWIOID).

Water for Rivers (WFR) was established in 2003 to deliver on the SWIOID requirements. It is the trading name for Joint Government Enterprise Limited (JGE), a Public Company limited by guarantee (refer diagram A for outline of company structure).

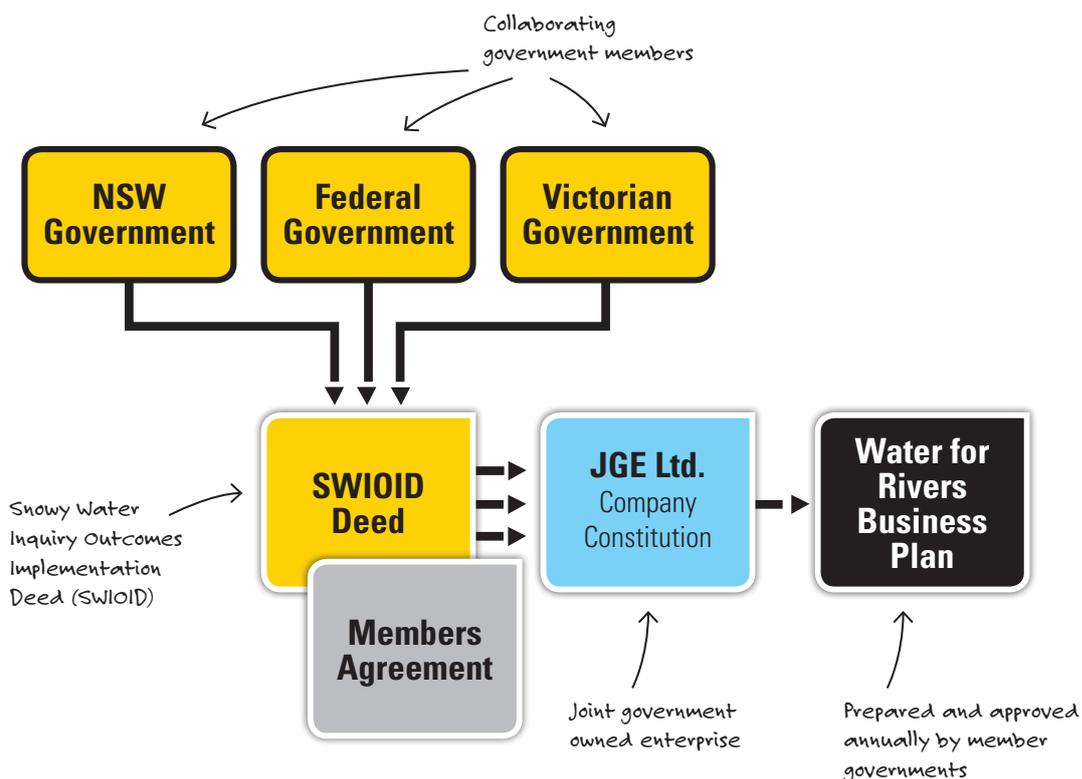
WFR's business objective is to recover 282 GL per water year, sufficient to restore a 'target' average annual flow of:

- 212 GL per annum, or 21 percent of the average natural flow, in the Snowy River; and
- 70 GL per annum, of environmental flows in the River Murray system

This objective is to be achieved by June 2012. To-date Water for Rivers has achieved 241 GL or 85% of this target.

Diagram A

Government owned company



Context to Water for Rivers' Submission to the Inquiry

Water for Rivers has referenced the *Snowy Water Inquiry* and the recent *Productivity Commission Research Report on Recovering Water in the Murray-Darling Basin* as both documents include information of relevance to Water for Rivers in the context of the Inquiry.

The Snowy Water Inquiry

The Snowy Water Inquiry was the catalyst for the establishment of Water for Rivers and as such forms much of the foundation for the unique way in which Water for Rivers achieves water recovery, predominantly through infrastructure projects.

Furthermore, the Snowy Water Inquiry and the Windsor Inquiry possess similar characteristics in so far as they both seek to consider the effect improved water flows will have, not just from an environmental point of view, but social and economic also.

When the Snowy Water Inquiry (Webster) was undertaken it determined – through a scientific reference panel – the environmental condition(s) of the river resulting from the operation of the Snowy Scheme and the benefits and costs that would be derived from a range of additional flow options. Importantly, the panel took a total catchment management approach that involved looking at water flows and considerations of riverine works that would improve the environmental health of the river.

The Inquiry analysed potential trade-offs for a range of environmental, economic, social and heritage issues. Importantly, its final recommendation of environmental outcomes for the river was made only after consideration of the social and economic impacts.

This Inquiry was completed in the context of COAG – the endorsed strategic framework for reforming the water industry in 1994, which incorporated a similar objective of improving resource allocation efficiency while seeking a better balance between resource use, environmental and social needs for water - and other policies so as to achieve 'a balanced scorecard for water recovery in regional areas'.

This process gave key stakeholders and the community (including the Victorian, NSW and Commonwealth Governments) confidence that the final flow requirements did consider impacts to communities in the Snowy and the contributing Basin catchments of the Murray, Goulburn and Murrumbidgee systems.

Webster** highlighted "In doing so I believe we have set a benchmark for future public inquiries and scientific and economic studies into the nature of water allocation and river system management in Australia and internationally".

He went on to add "At the end of the day the rivers will remain modified but it is my view that they should be healthier and have an ecological diversity and function which better satisfies a combination of environmental and social needs". (*Snowy Water Inquiry Final Report, Commissioner's Analysis and Conclusions, Oct 1998*)

The Snowy River Inquiry led to the establishment of Water for Rivers' fundamental objective of recovering water predominantly through infrastructure projects based on a 'legacy approach to water recovery'.

Productivity Commission Research Report on Recovering Water in the Murray-Darling Basin

Water for Rivers operates to a clear set of water recovery targets tied to defined environmental flow and ecological objectives in the Snowy River. These are based on sound science which defines the key environmental assets and ecosystems to be protected.

Earlier this year, Water for Rivers' responded to the *Productivity Commission Research Report on Recovering Water in the Murray-Darling Basin* in the context of its experience of working with the water industry and irrigation community since 2003.

The report made a number of findings that endorse the business model used by Water for Rivers and the benefits such an approach can bring to regional communities and the environment.

Having worked closely with irrigation communities on numerous water efficiency projects, it is the experience of Water for Rivers that cost effective infrastructure projects are an essential ingredient to achieving water recovery while simultaneously achieving social and economic outcomes.

This was evidenced by the Productivity Commission's Research Report which highlighted the success and cost effectiveness of the Water for Rivers program, using an expertise-based public corporate entity (Productivity Commission Research Report –March 2010).

The Commission Report outlined the following lessons from its review of Water for Rivers:

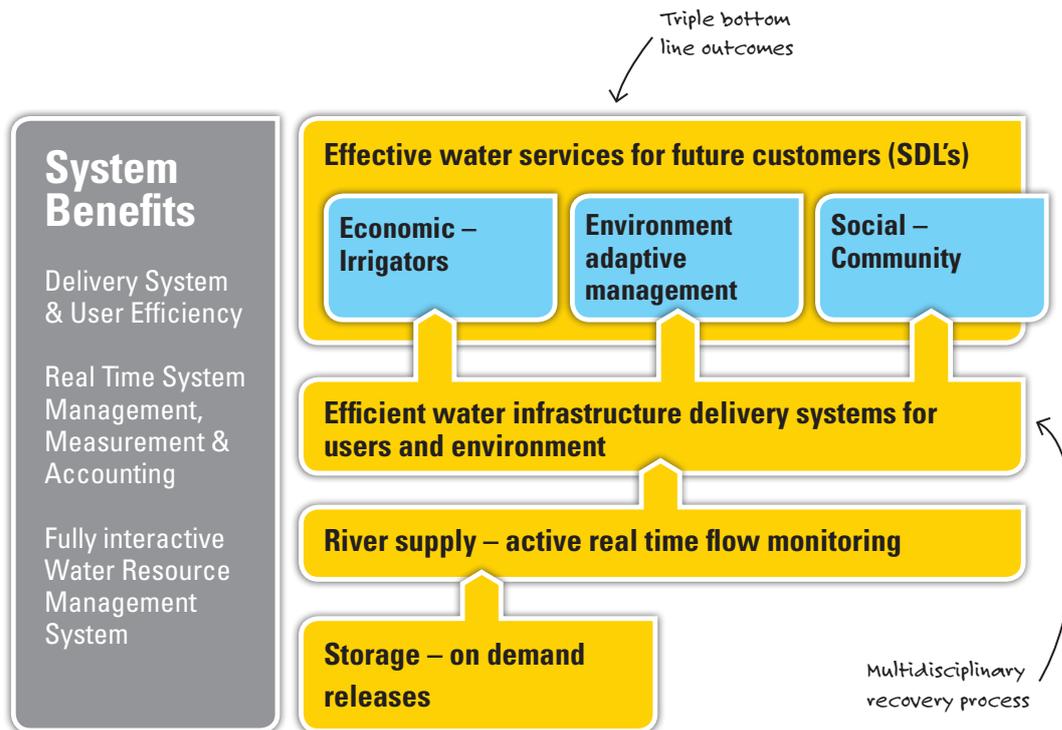
- Identifying stream flow rates and ecological objectives in specific rivers and establishing the water recovery targets to meet these objectives improves the transparency and accountability of water recovery by Water for Rivers;
- Assessing all proposed water recovery projects (on-market recovery, infrastructure investments and farm reconfigurations) against a common set of criteria, including least cost per GL, improves the cost effectiveness and efficiency of Water for Rivers; and
- Environmental water recovery can be outsourced to an incorporated body with water recovery objectives, powers and resources. This institutional arrangement can improve the independence of water recovery, lowers its administration costs and allows flexibility and innovation in approach to the water recovery task.

Based on Water for Rivers' experience, a key component needed in the broader regional policy context and the Basin Plan is a vision and set of targeted outcomes for the social and economic wellbeing of the Basin Community and dependent national communities and industries. That is, the opportunity cost of water to maximise the overall return to the community needs to be taken into account.

The need to deliver water equitably to all consumptive users and the environment requires cost effective, efficient water delivery management and recovery to reach and achieve future SDL's determined by the MDBA and the Australian Government. In other words, a smarter use of water will deliver better solutions and outcomes for the Basin community as well as meeting environmental watering targets, rather than simply for example looking at 'bridging the gap' via purchase alone, in absolute quantity terms. That is a multidisciplinary recovery process from water storage to on-farm including real time water accounting is required for our Basin river valleys.

This approach is at the core of Water for Rivers' business model and is the reason the company has achieved such success in its water recovery program. An outline of the model is provided in diagram B.

Diagram B



Our experience highlights that providing community preferences and making trade-off decisions through a multidisciplinary recovery process are critical to the eventual adjustment process – without this approach, significant community challenges would occur in meeting future SDL requirements.

In other words, significant socio economic impacts would eventuate based on the indicative quantities of target water required in some of the key river valleys, as outlined in the Guide.

In summary, based on Water for Rivers' experience in water recovery we offer the following response to the Inquiry Terms of Reference and would be pleased to discuss this submission further with the Standing Committee.

Response to Inquiry Terms of Reference

TOR 1: The direct and indirect impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community wellbeing.

Governments have a history of being at the forefront of implementing change but any change affecting communities brings with it uncertainty.

Unless there is a considered and consensus solution that actively engages and involves the rural community in the decision making process, considerable angst will prevail and threaten the potential for positive change.

Water for Rivers believes these circumstances were largely overcome with the introduction of the basin cap based on 1993/94 levels of diversion, when a 'partnership model' was developed and implemented with irrigator support for the process. It was at this point the challenge moved from determining the 'What' to working out 'How' to implement it.

As such, the question needs to be asked, 'how can we manage change and minimise the direct and indirect impacts once the final Basin SDL's are determined?'

It is likely numerous other submissions to this Inquiry will highlight the consequences of the proposed Plan and impact on regional communities.

Water for Rivers does not believe our role is to detail these impacts, rather it is to highlight our project experience and demonstrate how our approach to water recovery can not only achieve environmental improvements, but also meet the needs of regional communities in an inclusive and proactive manner that delivers benefits into the future.

Therefore, our purpose in referencing our experience in this Submission is to highlight some of the key learnings of our recovery experience to-date that could be taken into consideration by this Inquiry in framing its deliberations to minimise regional impact. These observations are shared here:

- *The Basin Plan provides significant challenges for regional Basin communities and governments who are currently implementing the intergovernmental agreement on the National Water Initiative. The NWI represents 'a shared commitment by governments to increase the efficiency of Australia's water use, leading to greater certainty for investment and productivity, for rural and urban communities, and for the environment' (NWI Web site).*

At the same time governments have sought to meet their commitment to introducing and establishing SDL's for surface and groundwater systems.

It would be prudent to ensure both programs are optimised in the delivery of the recovery program with a 'balanced scorecard' (triple bottom line) approach. To shy away from this, is to fail to recognise the importance of water recovery alignment with water reform and positive support/adjustment of our irrigation regions.

- *Based on the preliminary Guide figures, aimed at returning end-of-valley flows to about two-thirds of pre-settlement levels, any additional flows to meet downstream needs should be sourced across all valley systems on a cost benefit/trade off basis.*

In meeting downstream needs in, for example, the Murrumbidgee Valley, it has been determined that an extra 474 GL is required to target 68% of its pre settlement flows. If the Guide recommendation is adopted with an extra 205 GL added then a total of 679 GL will be required from the Valley.

Assuming these figures are based on long term average modelling, and using the current cap factor of 0.67, this would mean that 1,013 of general security water unit shares would be required from the Valley or 50% of available access licence share owned by irrigators. Unless these targets are flexible across contributing valleys then (despite the justification process of the 'downstream needs') some valleys may be significantly affected compared to others depending on their historical water use and the value adding industries they support.

Hence it would be prudent to provide for the ability to vary targets based on cost benefit analysis between valleys and allowing for cost effective tradeoffs to be made.

- *Typically, structural adjustment is necessary when some of the original structures that are in place are no longer viable or sustainable – this can also be the result of changes in management systems and improvements in technology.*

Unless water recovery under the Basin Plan is designed to support this consequential change in the most cost effective and constructive way (including National Water Initiative (NWI) reform) then significant flow-on disadvantages will be conferred on regional communities due to less water diversions for economic outcomes

Regional agribusiness and specific sectors of agriculture will be severely affected with consequential investment and job impacts unless this change is effectively managed proactively on the ground and in the region.

History shows that with all rural industries that have undergone change the successful programs have involved harnessing the support and leadership from regional communities to drive this change under strong partnership management arrangements. Consequently a logical planning strategy is required for positive water recovery whilst delivering regional benefits.

- *Our regional future based on a scenario/objective of achieving 'more with less water' is supported by the Australian development of new irrigation and water management technology.*

It is clear that the success of major water recovery programs must be aligned with modern, efficient and sustainable irrigation development. This includes the need to align state and federal programs to optimise funding for programs while providing clarity and incentives to fast track infrastructure modernisation, together with enhanced water accounting throughout our irrigation and river systems.

The adage you can't manage what you can't measure holds true. Until all river systems in the basin and water users (irrigators, communities and the environment) improve system efficiencies to reduce the significant quantities of unaccounted for water, it would be irresponsible to proceed with fast-tracked water buybacks only to find, in hindsight, that the recovery quantum in some of our valleys was in fact significantly less.

- *We all want healthy rivers*

That we all want healthy rivers is not in question; what is however is the quantum of water required without taking into account a logical hierarchy of economic recovery and improved water management on the journey to reach 'the modelled targets'. It may be that with improved works and measures to deliver water efficiently to the environment, the current modelled quantum may be less. Water for Rivers experience shows that moving in partnership on this journey often realises multiple benefits when reviewing delivery and recovery efficiency options.

- *Align environmental watering works and measures with delivery system improvement.*

Recent publicity has highlighted the importance of engineering works to boost the effectiveness of environmental watering in the Murray Darling Basin. Depending on location, this improved effectiveness would provide a credit to a particular river valley's SDL. For example, the Living Murray projects such as the Hattah Lakes system and watering the Gumbower forest through the construction of a delivery channel work to pump and regulate water rather than creating massive flood events.

- *The environment should be, and can be, just as accountable as an efficient water user, as is the case across the Australian irrigation industry.*

There is a need for clarity in the future management arrangements for the Australian Government and State-run Environmental Water Holders.

Co-ordinated management of government environmental water holding accounts to maximise the timing of these environmental flow releases, targeting state tributaries as well as further downstream watering plan requirements, has the potential to improve environmental water use efficiency and potentially increase SDL's. This would require further investigation.

- *A hierarchical implementation framework is required for the effective implementation of the Basin Plan to provide 'local regional solutions' to minimise SDL impacts.*

As was the case with the Basin Salinity Plan, where targets were agreed to by the Commonwealth and Basin states, a strategy needs to be developed which will allow each valley to develop an agreed Environmental Water Recovery Plan.

Governance aside, this process would identify and confirm all credits such as potential state environmental water holdings, review possible environmental works and measures for efficient watering, and then, based on Water for River's Murrumbidgee River Project experience, investigate the opportunity to improve real time river operation efficiency and any 'rules-based water remaining in storage' as a result of efficient river operations. This work would parallel a progressive move into modernisation and rationalisation linked to water purchase (targeted purchase as well as tender) as a last step, but integral to the whole multidisciplinary process.

The Productivity Commission considered this point in its report with a finding that: 'Decisions on allocating water between competing uses in the Basin should be based on good science. But this is not a sufficient basis for achieving the best outcome for the community. Community preferences should be considered where trade-offs are required between environmental outcomes, and between environmental and consumptive outcomes.'

The benefits of this are numerous and would deliver a 'triple bottom line' approach to water recovery as outlined in Diagram C – Basin Region/River System Environmental Water Recovery Plan.

This Recovery Plan would allow identification of all credits and facilitate a thorough options analysis for improving river flow management and water delivery efficiency. It would also investigate all possible tradeoffs from a cost:benefit perspective to allow development of an agreed plan for implementation.

Diagram C
Basin Region / River System
Environmental Water Recovery Plan:

Framework for Implementation



The planning process identified would also assess the opportunity cost of the efficiency measures and provide for trade-off decisions in managing river assets (delivery and environmental) as well as maintaining and growing the productive and efficient future of the irrigation sector.

It would also assist in managing concurrent structural change which is already evident in some parts of the Murray Darling Basin.

This would require funding to develop an Environmental Water Recovery Plan for each river valley; each of which would require significant investigations work to ensure water recovery is maximised from the perspective of a river valley 'system' approach.

Water for River's experience is that water recovery and efficiency should be planned from a 'total system approach' – from headworks to on-farm i.e. similar in concept to the root, trunk and branch approach to tax reform.

The alternative is a discontinuous approach which will lead to sub-optimal and cost ineffective solutions for water recovery which would be to the detriment of the irrigation sector and potentially the environment.

TOR 2: Options for water saving measures or water return on a region-by-region basis, with consideration given to an analysis of actual usage versus licence entitlement over the preceding fifteen years.

Some of the current debate has alluded to – and questioned – the fact that irrigated agriculture has maintained a similar GVP despite extremely low allocations during one of the longest drought periods on record. The conclusion that is often drawn is that irrigated agriculture in the Basin should be able to survive and grow with reductions in current cap volumes by up to 3-4,000 GL.

The social implications of declining water availability has recently been documented by Monash University highlighting and identifying severe impacts and the consequences of prolonged drought with most sellers of water doing so as a last resort, to manage their negative balance sheet due to low farm income.

This debate should focus on what options are available within a river valley (Diagram C) to cost effectively as well as strategically recover water across a number of projects using a combination of market mechanisms to implement a river valley Environmental Water Recovery Plan – a ‘total system approach’ from headworks to on-farm.

Since establishment in 2003, Water for Rivers has been involved in numerous projects directed at recovering water within very tight investment constraints, in both Victoria and New South Wales. The objectives by which we operate were set by government through a Deed Agreement and required predominant water recovery through the implementation of cost effective infrastructure based projects with an average recovery hurdle rate of \$1500/ML .

To-date, Water for Rivers has recovered water entitlements through a range of projects including (refer Diagram D for a summary of water recovery process):

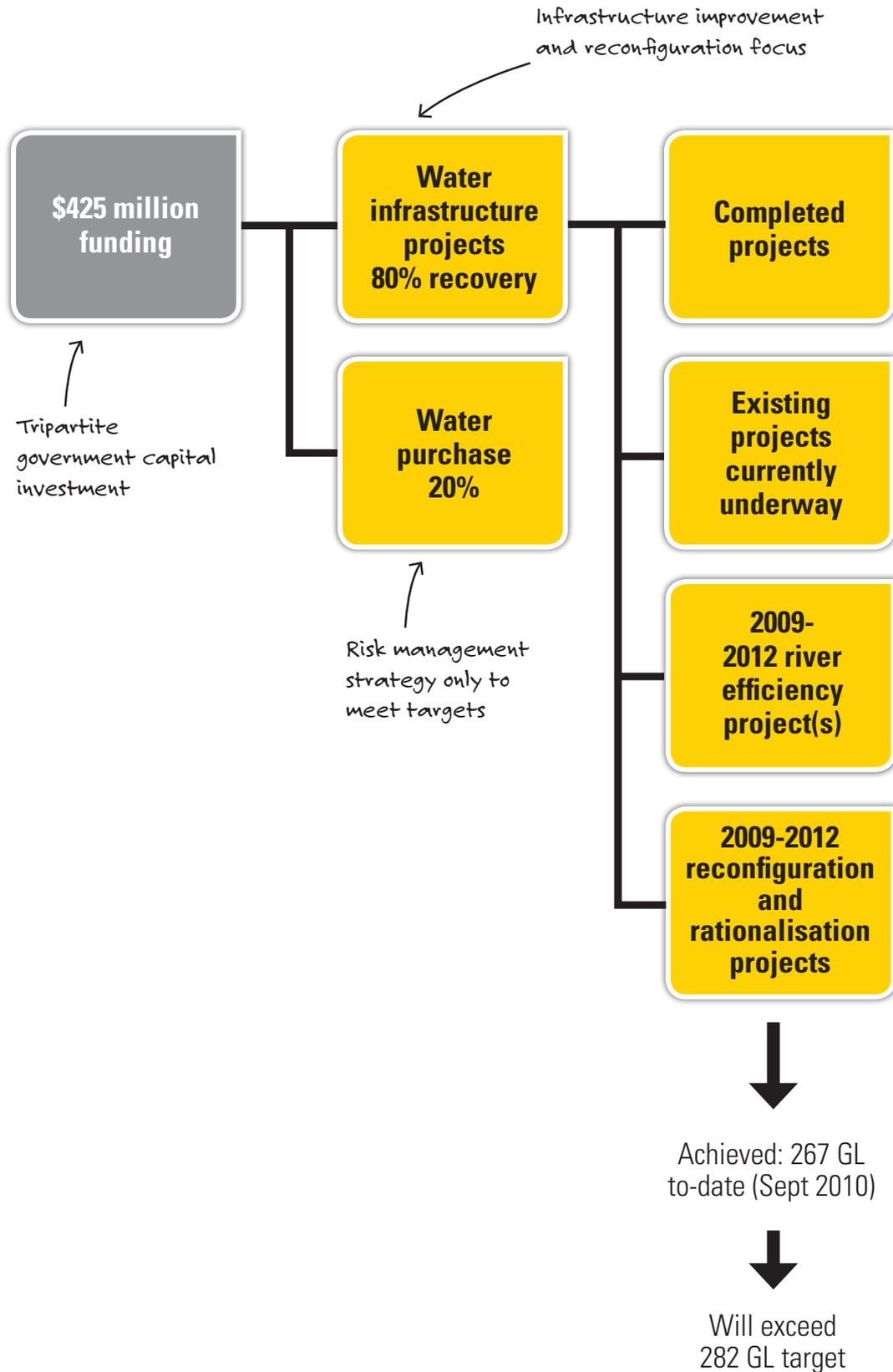
- investing in irrigation delivery system efficiency using channel automation, channel lining as well as stock and domestic piping to recover system losses. In some cases this also included returning river and stream flows to their more natural state;
- modifying storage systems to return them to their ephemeral natural wetland state to reduce evaporative losses;
- on farm water efficiency projects, including reconfiguring and, in some cases, resale of them as more efficient and sustainable irrigation properties;
- combining resources from other water efficiency programs to achieve more cost effective and triple bottom line outcomes in irrigation districts; and
- investigating the opportunity to achieve multiple benefits with a legacy based approach to recovery by improving the operational efficiency in river management as highlighted by the Murrumbidgee Computer Aided River Management Project.

Attachment 1 – Recovering Water with Triple Bottom Line Outcomes provides a scorecard of projects undertaken by Water for Rivers while working alongside regional communities.
(see Attachment 1 attached).

Diagram D

Water recovery program

Goal: 282 GL of annual water savings through improved water infrastructure and efficiency projects



In a recent submission to the Productivity Commission Inquiry Water for Rivers contends that, when making the decision to reduce 'take' (i.e. achieve SDL outcomes) on principally regulated systems, in Basin sub catchments, it is incongruous that the findings of the Commission fail to support 'triple bottom line accounting' of investment in irrigation modernisation, which also includes consequential delivery system rationalisation in order to achieve environmental and land management cost benefits.

Based on Water for Rivers experience, cost effective and efficient water recovery can be achieved to provide community certainty with respect to irrigation futures. To shy from this, is to fail to recognise the importance of water recovery alignment with water reform and the positive adjustment of our irrigation regions.

Clearly structural adjustment is necessary when some of the original structures that are in place are no longer viable or sustainable. This can also be the result of changes in management systems and improvement in technology.

It is painfully simplistic to ignore the validity of this form of investment because without it, regional communities will find it difficult to understand – let alone agree to – the necessary impacts of the proposed SDL's when they are introduced.

Contrary to ill-informed reports which caution this approach, Water for Rivers experience demonstrates that, when managed appropriately, the transition to full cost recovery of infrastructure, can indeed be effective when all project costs (including avoided) and benefits (including the environment) are accounted for, the focus is not just on the cost/ML of water recovered.

A positive solution such as a 'change in service' (for example, closing down an irrigation delivery system with conversion to a stock and domestic supply system) is a much preferred sub regional outcome and still achieves multiple other benefits (e.g. improvements in water delivery technology and equity in water use stemming from meeting new metering standards as well as conveyance savings from system losses).

Investment in infrastructure and new technologies also enables effective real time water accounting and flow management in river systems which facilitates future river managers accurately identifying consumptive water and environmental use in-stream.

These sub system water resource management benefits need to be considered (and costed) to demonstrate accurate water accounting and use of allocation bank accounts across all users, provided by effective water delivery/flow regulation, necessary to manage future SDL's.

An example of this approach is The Murrumbidgee Project in which Water for Rivers has invested three years of developmental work with State Water Corporation (NSW) and with the support of the NSW Government.

A better Murrumbidgee will mean we make the best use of every drop of water that we have:

- More security and certainty for every water user;
- Vastly improved river management;
- More precise control of flows through system-wide connectivity;
- Less wastage of water;
- A higher percentage of total flow available for allocation;
- Fairer distribution of available water;
- Improved environmental outcomes;
- Historic opportunity for irrigators to leverage technology into on-farm systems; and
- Improved on-farm water management delivering greater profitability and convenience

Further information is provided in Attachment 2

- **Making the Murrumbidgee System work better for everyone**
- **The Murrumbidgee Computer Aided River Management (CARM) project is a major upgrade of infrastructure and operational processes throughout the river system that will make control of water flows throughout the river system much more precise and responsive.**
- **This higher level of control will achieve positive outcomes for all water users – including the environment – along the river: improved levels of service delivery on some parts of the system, more reliable delivery to all water users, greater technology options for irrigators, equity between water users and more confidence in the management and measurement of the Murrumbidgee system.**
- **There are currently about 320 GL of water as unidentified losses from the system each year.**
- **The CARM project is expected to recover up to 80 GL of those losses annually.**
- **The total cost of the project is over \$80 million. In return for investing this money, Water for Rivers will use 40 GL of the water saved through improved conveyance through the system (not water saved at meters) to supplement environmental flows in the Snowy River. The balance of the savings will stay in the system to improve water security for all water users.**
- **The project will encompass the entire Murrumbidgee River and its key tributaries and anabranches.**

TOR 3: The role of governments, the agricultural industry and the research sector in developing and delivering infrastructure and technologies aimed at supporting water efficiency within the Murray Darling Basin.

It is Water for Rivers' experience that in the process of developing a project scope and design, active engagement with regional communities through local groups and water industry partnerships, is vital to ensuring a proactive business approach to water recovery.

It has been traditional government practice to establish a statutory authority – either intrastate or overarching federally – to assist with the delivery of government programs. However, in the context of the Basin Plan where the support of local communities is vital, such a centralised model that is limited in its ability to maintain significant local presence and involvement, would be counterproductive.

The commercial business model developed for the Joint Government Enterprise (Water for Rivers) is an example of a proactive governance arrangement that has been successful and operational in water recovery. In this model the Enterprise is a company limited by guarantee with a Board including cross jurisdictional representatives and operating to an annually approved business plan. This 'independent, commercial model' is entirely scalable and has been proved highly effective in delivering against government objectives of achieving predominant water recovery through infrastructure-based projects for the Murrumbidgee, Murray and Goulburn systems.

The independence of the processes employed is a greatly preferred alternative to the traditional government model of releasing guidelines and reviewing bids that are often not strategic nor aligned to other activities within a river valley.

This model is also proactive in identifying suitable regional projects. A readily accessible fund for scoping and feasibility studies is essential. Projects should be funded on the basis of an appropriate business performance models (e.g. the hurdle rate for water, cost-benefit analysis) and based on an agreed Basin River System Environmental Recovery Plan as outlined above.

This also retains/provides a regional presence yet offers an ability to work independently and effectively with a strong business and outcome focus – not a focus on process – in order to develop and implement an approved Plan.

The success of the Enterprise over recent years has led the Water for Rivers Board recently to commission an independent review of its operating model. The review sought to provide government with an understanding of the benefits of the business model and its suitability for the delivery of many regional government initiatives.

A summary of the review is provided below. The complete review (confidential) may be found at Attachment 3.

Summary of Achievements

Water for Rivers will exceed its water recovery targets – delivering 311 GL of entitlement by 2012. This will be achieved within budget - a significant achievement given the escalation of water recovery costs that has occurred in recent years due to increased demand for water entitlements, increased costs for infrastructure projects and reducing supply and increased competition for projects in the regions.

Around 70 - 80% of water recovered by Water for Rivers will result from regional projects and investments. This establishes a legacy of infrastructure to improve the sustainability of regional farms and communities - helping them respond to the significant adaptive challenges they are facing due to prolonged drought and the prospect of a lower water future. Through Water for Rivers' projects, shareholders are also contributing toward COAG water reform outcomes.

While many commentators argue that purchase of water entitlements is a more cost-effective strategy to recover water, Water for Rivers' focus on infrastructure projects is delivering results and at a lower cost than other programs. For example, the Productivity Commission identified Water for Rivers as a more cost effective water recovery program than the Living Murray Initiative – recovering water at an average cost of \$1.5m per GL, compared with LMI's \$1.73m per GL. By 2012, this gap may spread even further, as Water for Rivers' projections indicate its overall cost of recovered water will be \$1.37m per GL.

Water for Rivers will deliver environmental benefits to the Snowy and Murray River systems through improved flows, restored connectivity of river systems, improved water quality and restoration of native habitats. This is leading to the protection of endangered species and improvement of the value of our national parks and wilderness areas.

Recovering water for environmental flows in an environment where landholders face unprecedented scarcity and uncertainty of water supply has demanded innovative solutions. Water for Rivers has exploited the extensive experience and knowledge of its team and its ability to collaborate on the ground with landholders to pursue some genuinely innovative projects. Those projects have successfully deployed new technologies and innovative commercial arrangements to recover water for the environment while delivering economic and social benefits to regional landholders and communities. These innovations and outcomes are replicable on other water recovery projects and river systems.

Operating Model – keys to success

A number of specific elements of the Water for Rivers' operating model were identified as having contributed most to its success - and could be considered as guidelines for other regional government initiatives. They are outlined below.

Water for Rivers is working to an exceptionally clear strategy:

- Clear and measurable water recovery targets highlight its accountabilities, provide transparency in reporting and support an outcome-based approach planning and managing its project portfolio
- From the outset, and in line with SWIOID direction, it has focused on delivering 70-80% of its water recovery target from infrastructure projects and hasn't wavered. Water continues to be recovered cost-effectively and within investment criteria. This focus is valued by regional stakeholders and leaves an infrastructure legacy to improve sustainability of farms and communities as they adapt to a lower water future
- Long-term funding commitments from government partners have enabled it to work independently of the administrative burdens of government budget cycles, explore a wider range of recovery projects and make a long-term commitment to infrastructure projects that can have significant gestation periods in their early stages

Water for Rivers has established an effective structure for the task at hand:

- Operating as an independent entity has enabled more efficient program delivery and greater flexibility to pursue innovative water recovery projects than would be the case if this program was delivered by a government agency
- Regional deployment of key resources has enabled productive relationships with local operators to source projects, deliver solutions that are relevant to local requirements and for Water For Rivers to be engaged directly on projects to manage its investments
- Effective governance arrangements have been established with the appointment and retention of credible and engaged directors, effective (without being onerous) shareholder reporting arrangements and adoption of clear criteria for project investments, including a hurdle price for water recovery

Water for Rivers has established simple and productive operations:

- Simpler administrative arrangements and sound governance have resulted in lower administrative overheads and costs for water recovered when compared with other programs, such as the Living Murray Initiative
- A strong project management culture and established disciplines have helped it to quickly assess viability of projects, manage risk through phase containment, and terminate projects that aren't delivering necessary water recoveries – something that government agencies find harder to achieve
- Regionally deployed project directors are effectively supported through investments in technology for remote working and communication to facilitate collaboration and connectedness across the team

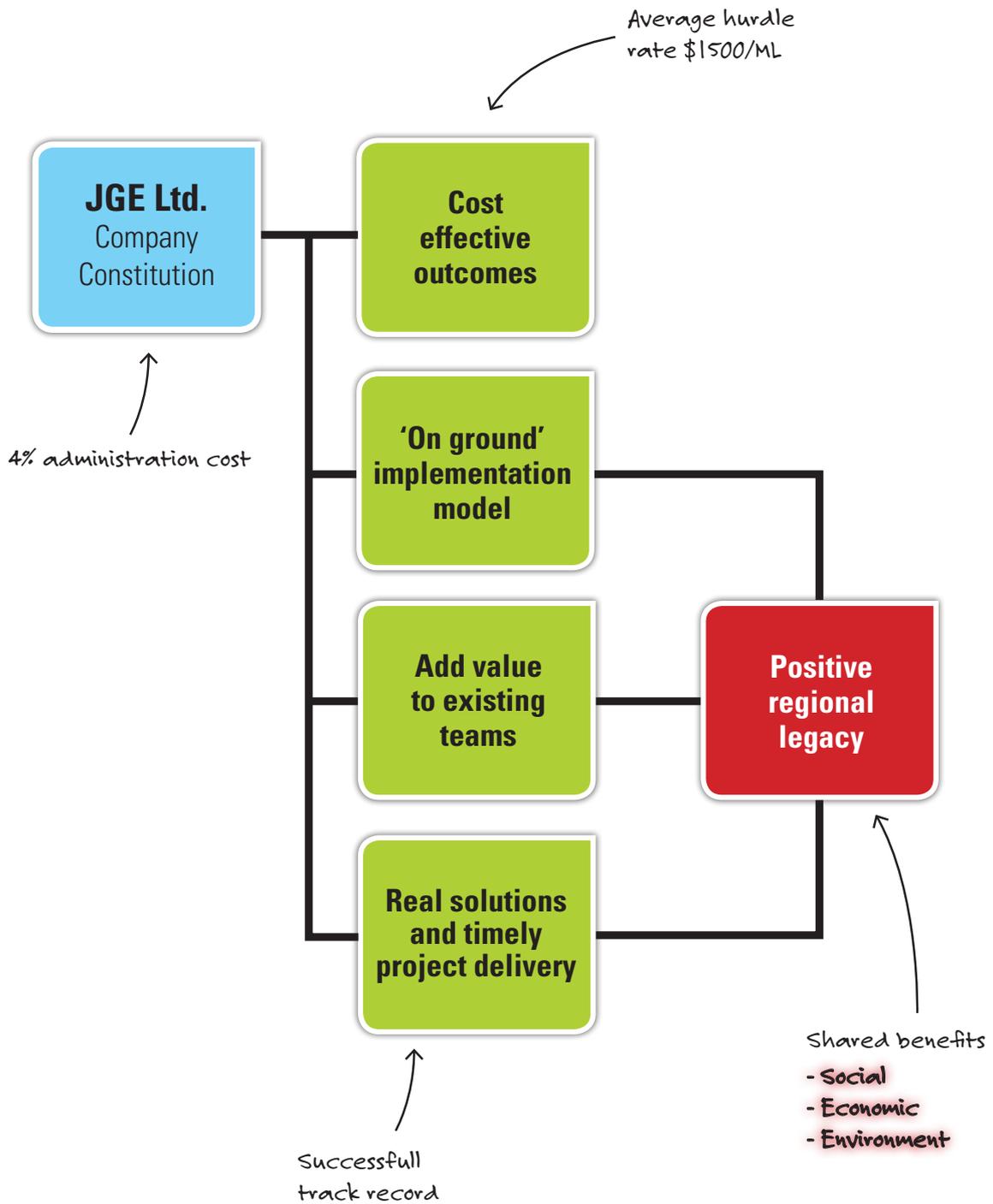
Water for Rivers has placed significant emphasis on recruiting and retaining the right team:

- Highly experienced and empowered project directors have been retained with the skills, knowledge and attributes needed to engage successfully with local operators, add value to projects and deliver targeted outcomes
- The CEO brings attributes needed for success – in particular an entrepreneurial approach and support for innovation. He is attuned to the culture and issues associated with water recovery projects and able to establish a collaborative team environment
- The Board and staff have a consistent view of its objectives and “how we do things” – enshrined in its business management approach.

Outlined in Diagram D is a schematic of the Joint Government Enterprise approach to water recovery.

Diagram D

Unique delivery model



CONCLUSION

Water for Rivers appreciates the opportunity to lodge a submission with the Standing Committee on Regional Australia in regard to its review and deliberation of the socio-economic impact of the proposed Murray Darling Basin Plan.

Water for Rivers believes strongly in what it does and the strength of its business model. It is our experience through our operations, and partnership infrastructure projects with the irrigation community, that smarter use of water will deliver better solutions and outcomes for the Basin Community as well as meeting environmental watering targets.

Water for Rivers hopes the learnings of our experience to date assists the Committee in its final report to Parliament.

We look forward to the opportunity to present before the Standing Committee.

References

The social impacts of declining water availability and ongoing drought in the Murray-Darling Basin. Produced by Professor Margaret Alston, Dr Kerri Whittenbury and Ms Alexandra Haynes from the Gender, Leadership and Social Sustainability (GLASS) Research Unit. The report outlines research undertaken through focus group sessions and in-depth interviews with people in three key irrigation communities in northern Victoria and southern New South Wales.

Market Mechanisms for Recovering Water in the Murray Darling Basin – Productivity Commission ‘Draft’ Research Report. December 2009.

Market Mechanisms for Recovering Water in the Murray Darling Basin – Productivity Commission (Final) Research Report. March 2010.

Snowy Water Inquiry – Final Report 23rd October 1998

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Attachment 1



COMPLETED PROJECTS

IMPROVED WETLAND/STORAGE/IRRIGATION SYSTEM MANAGEMENT

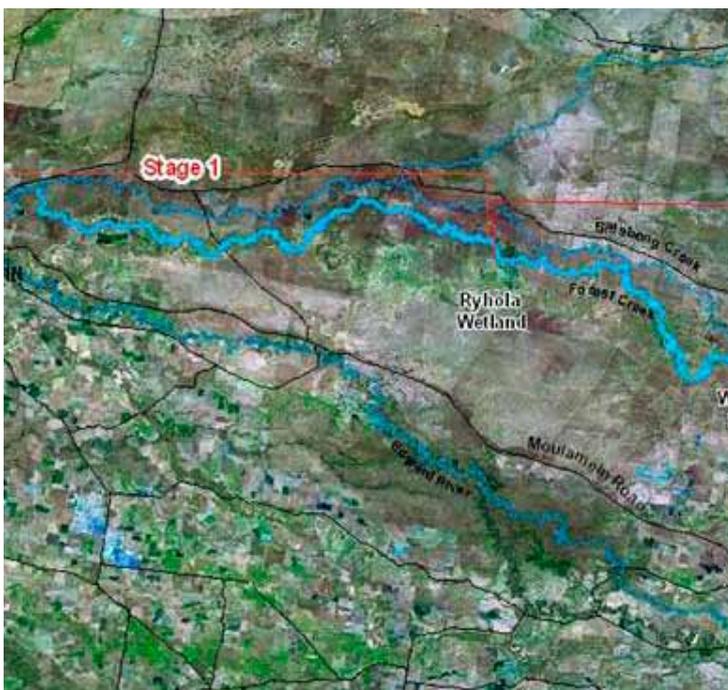
Mokoan Project – Victoria



BENEFITS SCORECARD

Environmental	
50.2 GL savings	✓
Improved downstream demand management	✓
Restoration of original wetlands	✓
Improved security of supply	✓
Real time measurement and management of flows	✓
Use of Lake Boga as Murray 'mid river storage'	✓
Economic	
New delivery and infrastructure system	✓
Voluntary adjustment of high loss irrigation areas	✓
\$20 million future land use strategy including tourism for region	✓
Social	
New pumped irrigation service	✓
New stock and domestic pipeline systems	✓
Improved quality of water supply to all users	✓
New recreational water supply downstream and re-regulation to Snowy	✓

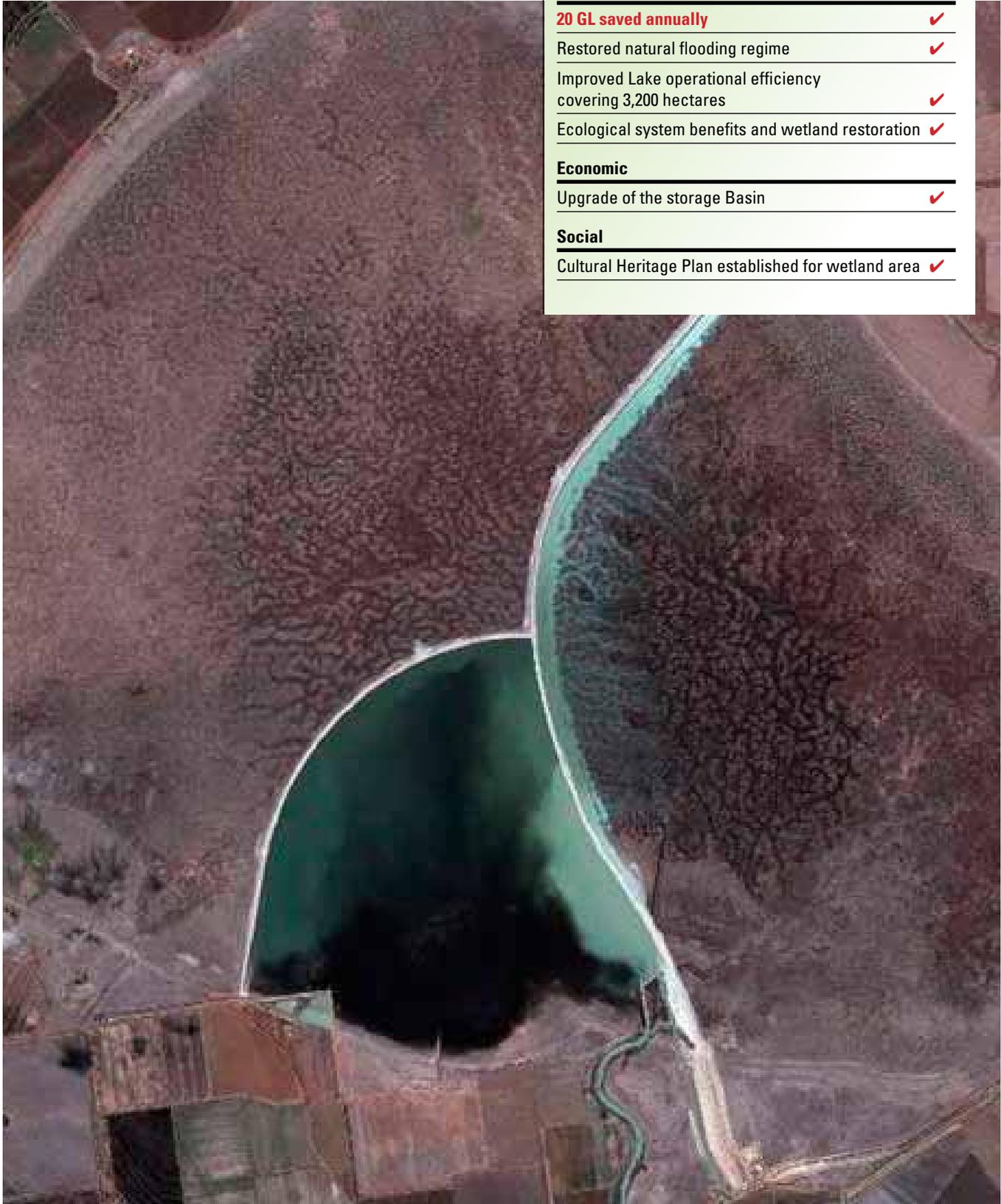
Alternate Water Supply – Forest Creek, NSW



BENEFITS SCORECARD

Environmental	
11.3 GL savings	✓
Returned Forest Creek to natural ephemeral stream	✓
Improved operational efficiency of the Billabong/Yanco Creek system	✓
Economic	
New stock and domestic piped supply	✓
Legacy for users	✓
Social	
Irrigator led project	✓
Secure water supply for users	✓
Improved water quality	✓
Water on demand	✓

Barren Box Swamp



BENEFITS SCORECARD

Environmental

- 20 GL saved annually ✓
- Restored natural flooding regime ✓
- Improved Lake operational efficiency covering 3,200 hectares ✓
- Ecological system benefits and wetland restoration ✓

Economic

- Upgrade of the storage Basin ✓

Social

- Cultural Heritage Plan established for wetland area ✓

Channel Automation Central Goulburn Irrigation District – Victoria



BENEFITS SCORECARD

Environmental

21 GL in system savings ✓

Economic

Cost effective infrastructure water recovery compared to purchase ✓

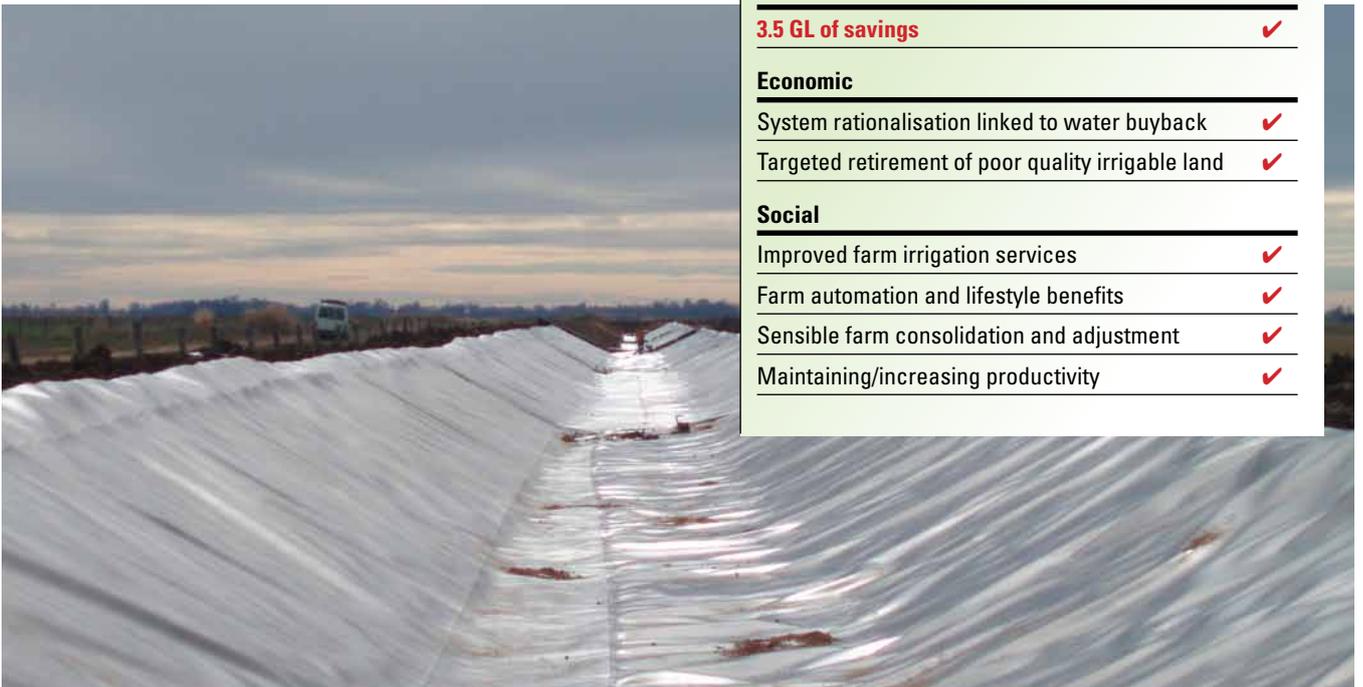
Underpinning water reform ✓

On farm efficiency improvement ✓

Social

Linking on-farm efficiency to irrigation upgrade ✓

Coleambally Irrigation Area – Channel Automation



BENEFITS SCORECARD

Environmental

3.5 GL of savings ✓

Economic

System rationalisation linked to water buyback ✓

Targeted retirement of poor quality irrigable land ✓

Social

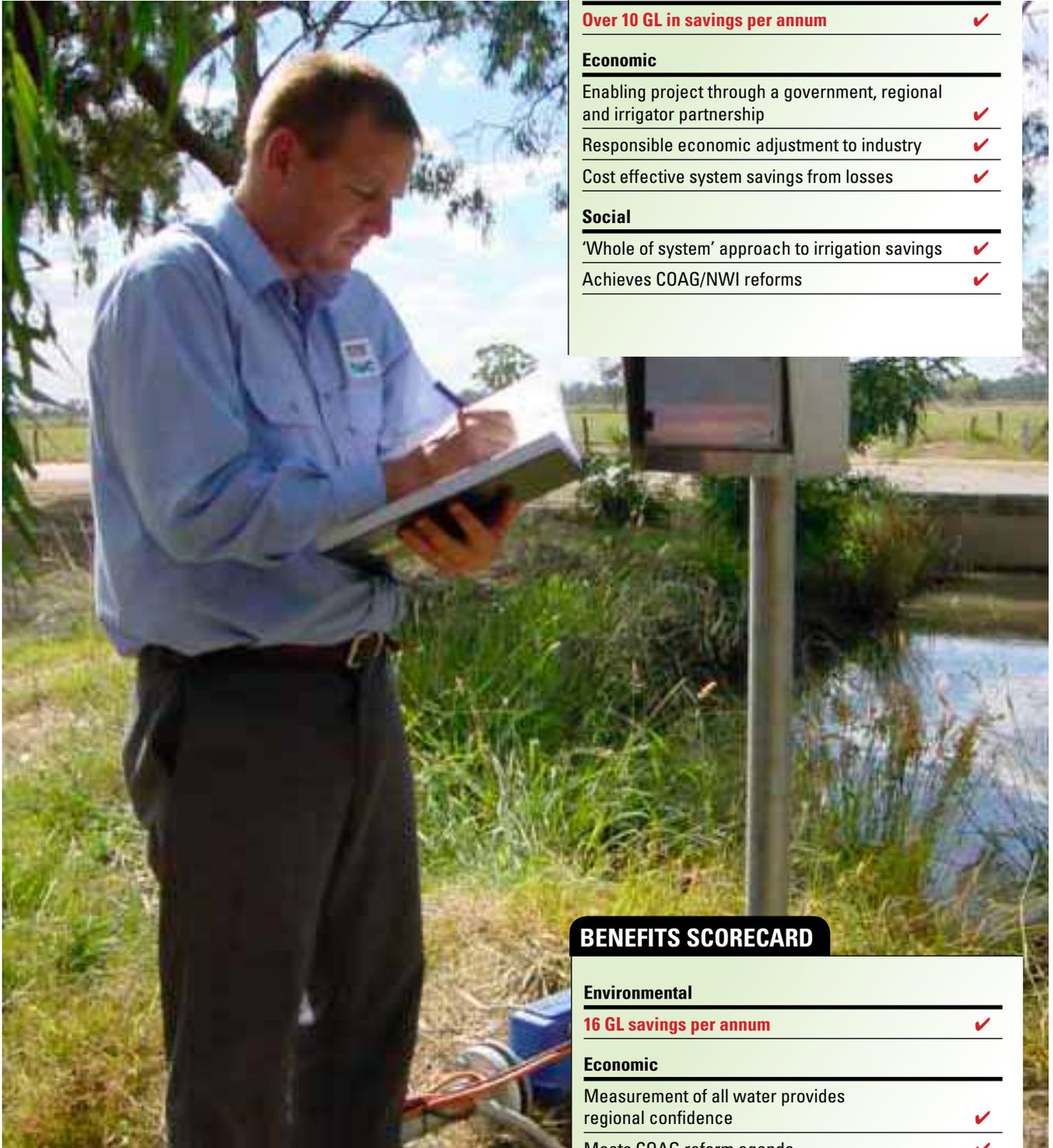
Improved farm irrigation services ✓

Farm automation and lifestyle benefits ✓

Sensible farm consolidation and adjustment ✓

Maintaining/increasing productivity ✓

Improved Flow Measurement – Goulburn River Irrigation System



BENEFITS SCORECARD

Environmental

Over 10 GL in savings per annum ✓

Economic

Enabling project through a government, regional and irrigator partnership ✓

Responsible economic adjustment to industry ✓

Cost effective system savings from losses ✓

Social

'Whole of system' approach to irrigation savings ✓

Achieves COAG/NWI reforms ✓

BENEFITS SCORECARD

Environmental

16 GL savings per annum ✓

Economic

Measurement of all water provides regional confidence ✓

Meets COAG reform agenda ✓

Social

Confirmed entitlements for district and unauthorised use ✓

Provided equity for all users ✓

Improved Measurement of Small Volume Supplies in Irrigation Districts (IMSVSID) – Victoria

Woorinen Pipeline – Pressurised Horticultural Irrigation Supply System – Victoria



BENEFITS SCORECARD

Environmental

1.5 GL savings per annum ✓

Economic

Provided horticultural growth ✓

Irrigation farm upgrades ✓

Increased farm productivity from less water ✓

Social

Improved irrigator confidence ✓

Positive future for the region ✓

New horticultural plantings and investment ✓

BENEFITS SCORECARD

Environmental

3 GL of water savings ✓

Economic

Upgrade of old leaky channel system ✓

Stimulates on-farm investment ✓

Social

Confidence in the future of the supply system ✓

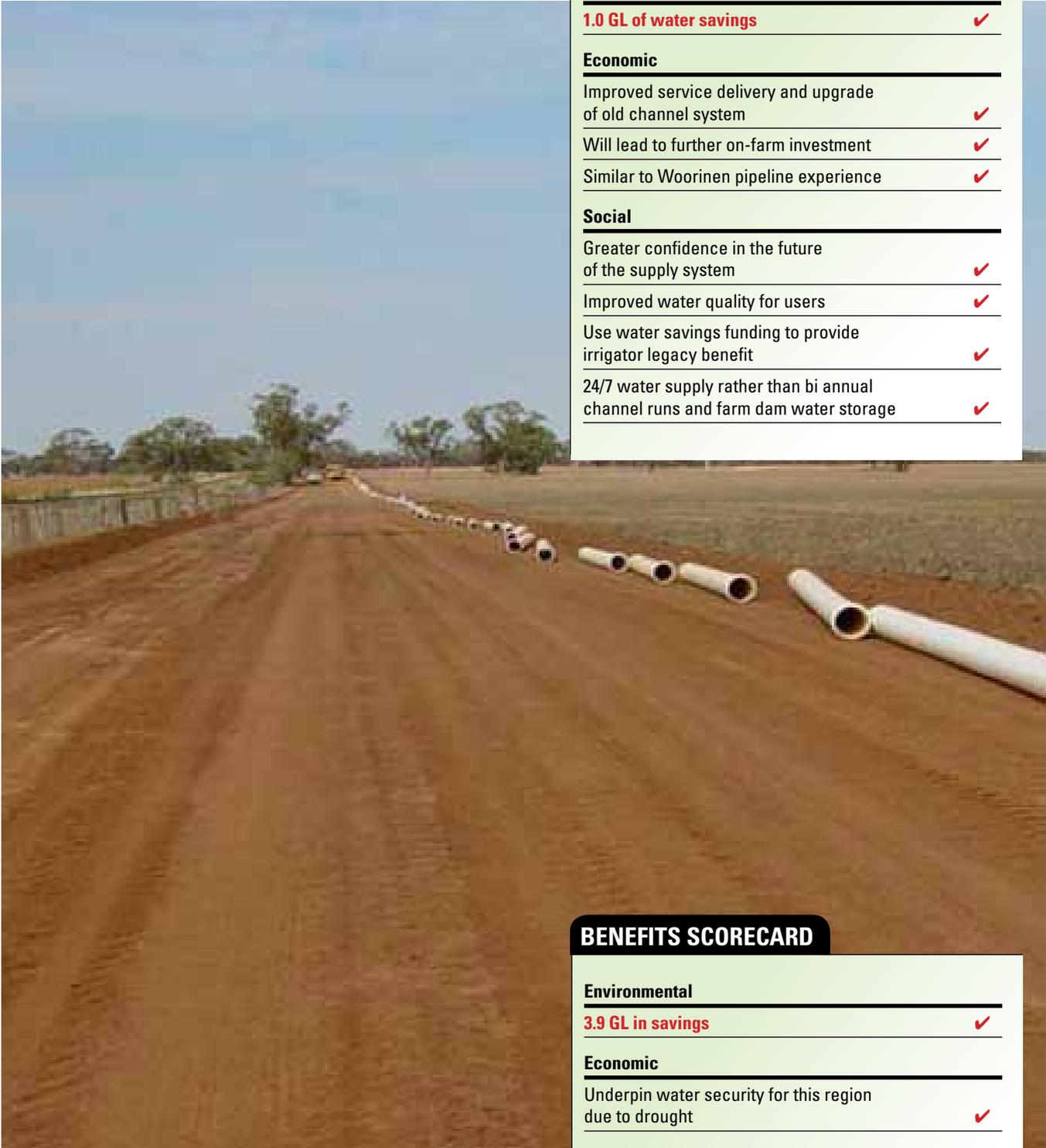
Improved water quality ✓

Water when needed ✓

Region legacy ✓

Koraliegh Pipeline Project

Hay Private Irrigation District (PID) Pressurised Stock and Domestic Scheme – NSW



BENEFITS SCORECARD

Environmental	
1.0 GL of water savings	✓
Economic	
Improved service delivery and upgrade of old channel system	✓
Will lead to further on-farm investment	✓
Similar to Woorinen pipeline experience	✓
Social	
Greater confidence in the future of the supply system	✓
Improved water quality for users	✓
Use water savings funding to provide irrigator legacy benefit	✓
24/7 water supply rather than bi annual channel runs and farm dam water storage	✓

Normanville Pipeline Project – Victoria

BENEFITS SCORECARD

Environmental	
3.9 GL in savings	✓
Economic	
Underpin water security for this region due to drought	✓
Social	
Greater confidence in the future of the supply system and improved water quality for users	✓
Using water savings funding to provide legacy benefit for farmers	✓
24/7 water supply rather than bi annual channel runs and farm dam water storage	✓

STOCK & DOMESTIC SYSTEMS (cont)

Deniliquin Golf Club Water Efficiency Project

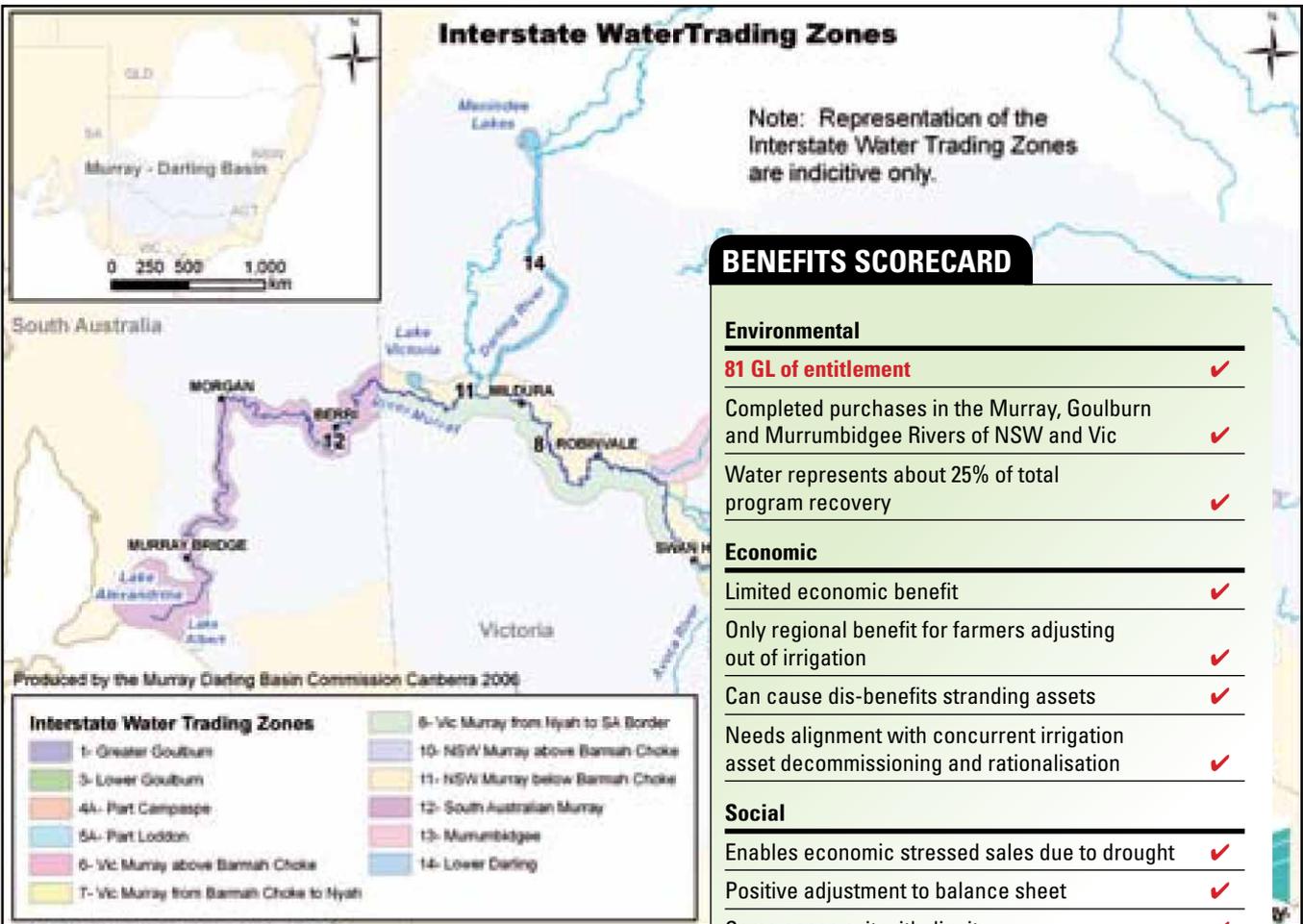


BENEFITS SCORECARD

Environmental	
0.238 GL in savings	✓
Economic	
Long terms benefits to the Club's business including water savings by improving water delivery and providing alternative sources of supply	✓
Social	
Demonstrates regional support to community services	✓
Improves river water use efficiency	✓
Captures community desire to respond to drought conditions/impact	✓

PURCHASE

Water Entitlement Purchase

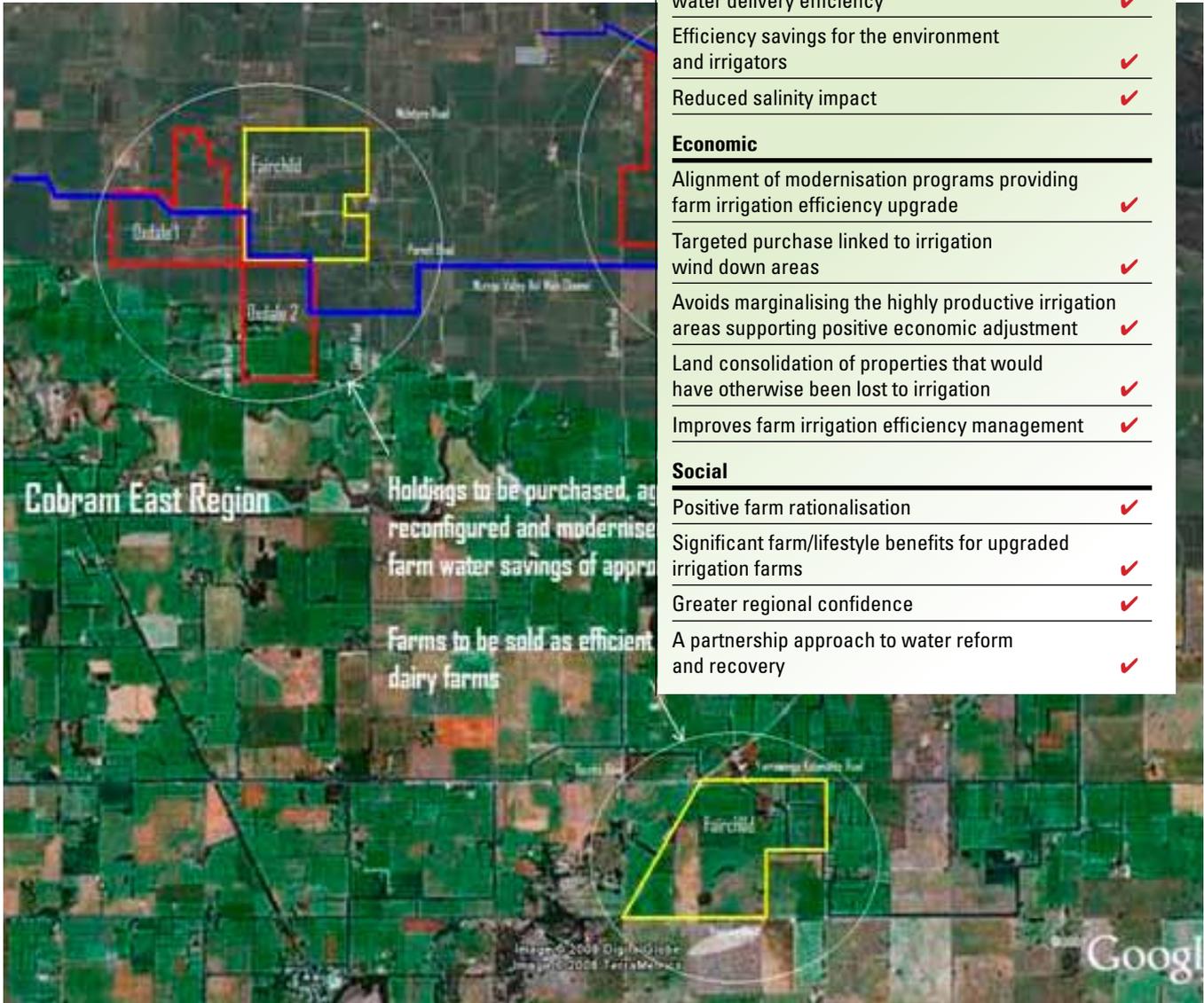


BENEFITS SCORECARD

Environmental	
81 GL of entitlement	✓
Completed purchases in the Murray, Goulburn and Murrumbidgee Rivers of NSW and Vic	✓
Water represents about 25% of total program recovery	✓
Economic	
Limited economic benefit	✓
Only regional benefit for farmers adjusting out of irrigation	✓
Can cause dis-benefits stranding assets	✓
Needs alignment with concurrent irrigation asset decommissioning and rationalisation	✓
Social	
Enables economic stressed sales due to drought	✓
Positive adjustment to balance sheet	✓
Some cases exit with dignity	✓

CURRENT PROJECTS

Over 50 On-Farm Reconfiguration & rationalisation projects across NSW and Victoria

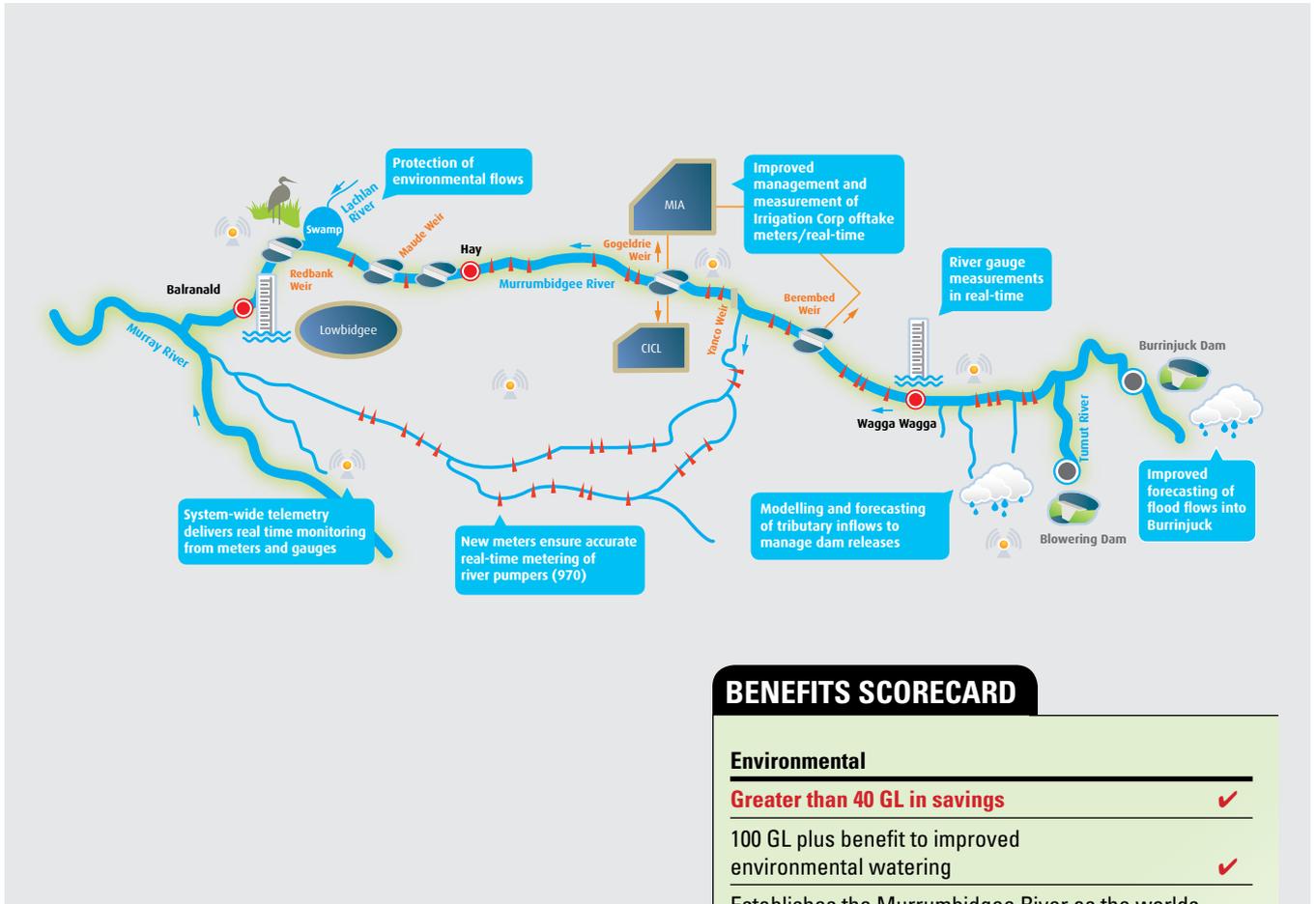


BENEFITS SCORECARD

Environmental	
Positive on farm improvements to water delivery efficiency	✓
Efficiency savings for the environment and irrigators	✓
Reduced salinity impact	✓
Economic	
Alignment of modernisation programs providing farm irrigation efficiency upgrade	✓
Targeted purchase linked to irrigation wind down areas	✓
Avoids marginalising the highly productive irrigation areas supporting positive economic adjustment	✓
Land consolidation of properties that would have otherwise been lost to irrigation	✓
Improves farm irrigation efficiency management	✓
Social	
Positive farm rationalisation	✓
Significant farm/lifestyle benefits for upgraded irrigation farms	✓
Greater regional confidence	✓
A partnership approach to water reform and recovery	✓

CURRENT PROJECTS (cont)

Murrumbidgee River Efficiency Project



BENEFITS SCORECARD

Environmental	
Greater than 40 GL in savings	✓
100 GL plus benefit to improved environmental watering	✓
Establishes the Murrumbidgee River as the worlds most efficiently managed and operated computer aided river management system	✓
Assists in off-setting SDL impacts	✓
More precise control of flows through river system wide	✓
Economic	
Vastly improved river management	✓
More security and certainty for every water user	✓
A high percentage of total flow available for allocation	✓
Historical opportunity for irrigators to leverage on farm water technology	✓
Improved on farm management delivering greater profitability and convenience	✓
Social	
Fairer distribution of available water	✓
Improved environmental outcomes	✓
Less wastage of water	✓

CURRENT PROJECTS (cont)

Yanco Creek Efficiency Project



BENEFITS SCORECARD

Environmental	
Improved system operation minimising negative 'e' impacts	✓
More natural flow regime for wetlands	✓
Murray delivery/transmission savings run down the Murrumbidgee improving 'e' watering efficiency	✓
Economic	
Greater system control and flow management using existing private operators to supply	✓
Social	
Enables targeted purchase and positive adjustment of the lower parts of the system with the greatest transmission losses	✓
Controlled watering and management of wetlands	✓

Coonancoocabill



BENEFITS SCORECARD

Environmental	
More natural wetting and drying regime with evaporative savings	✓
Economic	
Upgrade of weir and control system	✓
Social	
Improved management of wetland system	✓

CURRENT PROJECTS (cont)

Old Man Creek



BENEFITS SCORECARD

Environmental	
Better management of releases will improve operational efficiency of the system	✓
Economic	
Upgrade of weir and control system	✓
Social	
Improved management of wetland system	✓

Bundidgerry Creek System



BENEFITS SCORECARD

Environmental	
Better management of releases will improve operational efficiency of the system	✓
Economic	
Upgrade of weir and control system	✓
Social	
Improved management of wetland system	✓

Attachment 2



Making the Murrumbidgee work better for everyone

The Murrumbidgee Computer Aided River Management (CARM) project is a major upgrade of infrastructure and operational processes throughout the river system that will make control of water flows throughout the river system much more precise and responsive.

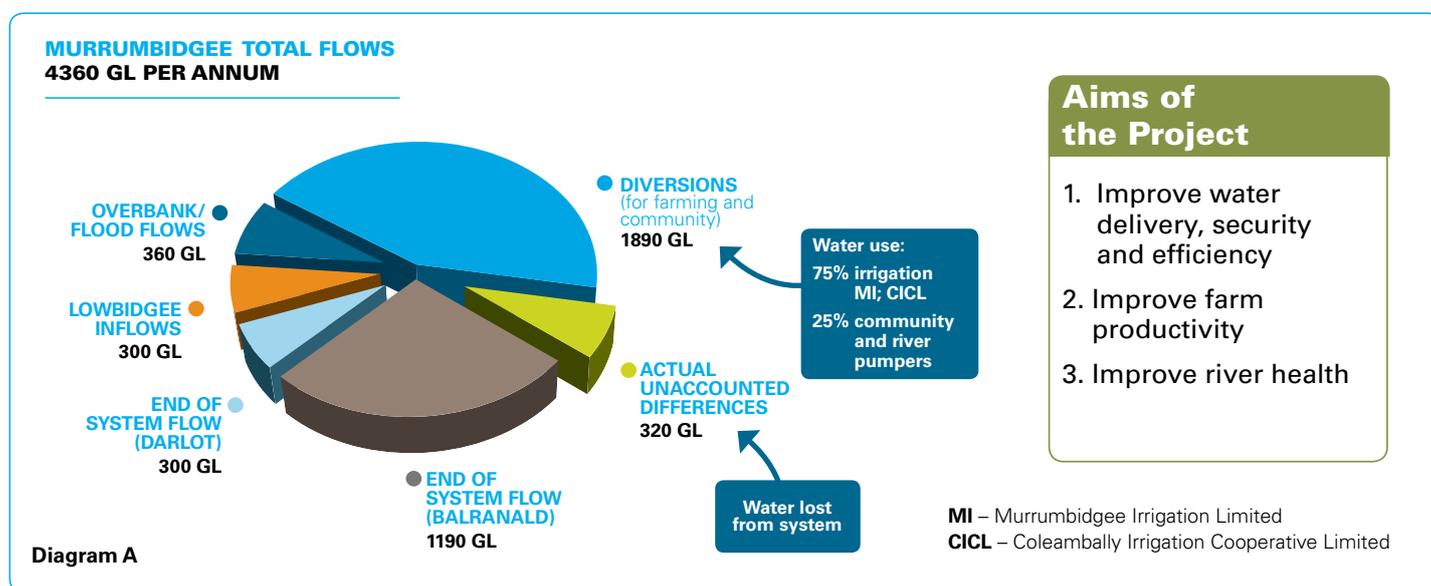
This higher level of control will achieve positive outcomes for all water users – including the environment – along the river: improved levels of service delivery on some parts of the system, more reliable delivery to all water users, greater technology options for irrigators, equity between water users and more confidence in the management and measurement of the Murrumbidgee system.

As the diagram (diagram A) below shows, there are currently about 320 GL of water as unidentified losses from the system each year.

The CARM project is expected to recover up to 80 GL of those losses annually.

The total cost of the project is over \$80 million. In return for investing this money, Water for Rivers will use 40 GL of the water saved through improved conveyance through the system (not water saved at meters) to supplement environmental flows in the Snowy River. The balance of the savings will stay in the system to improve water security for all water users.

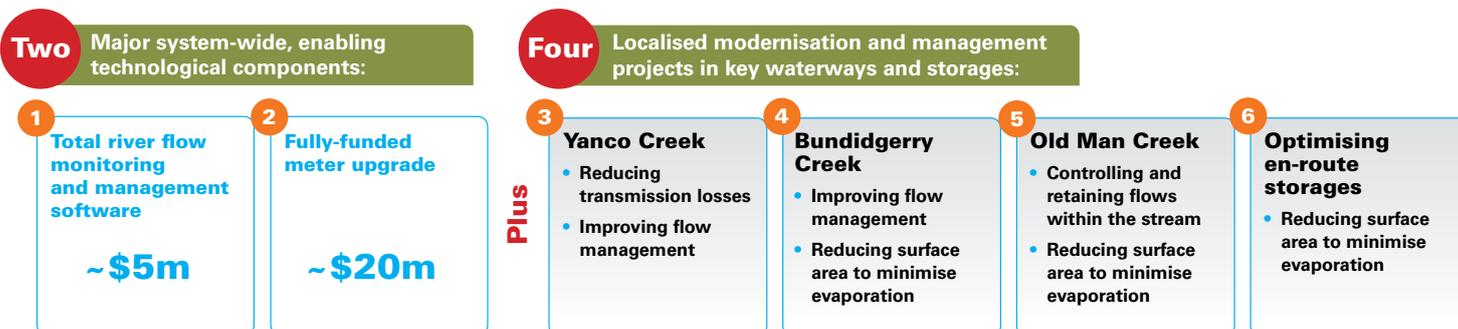
The project will encompass the entire Murrumbidgee River and its key tributaries and anabranches.



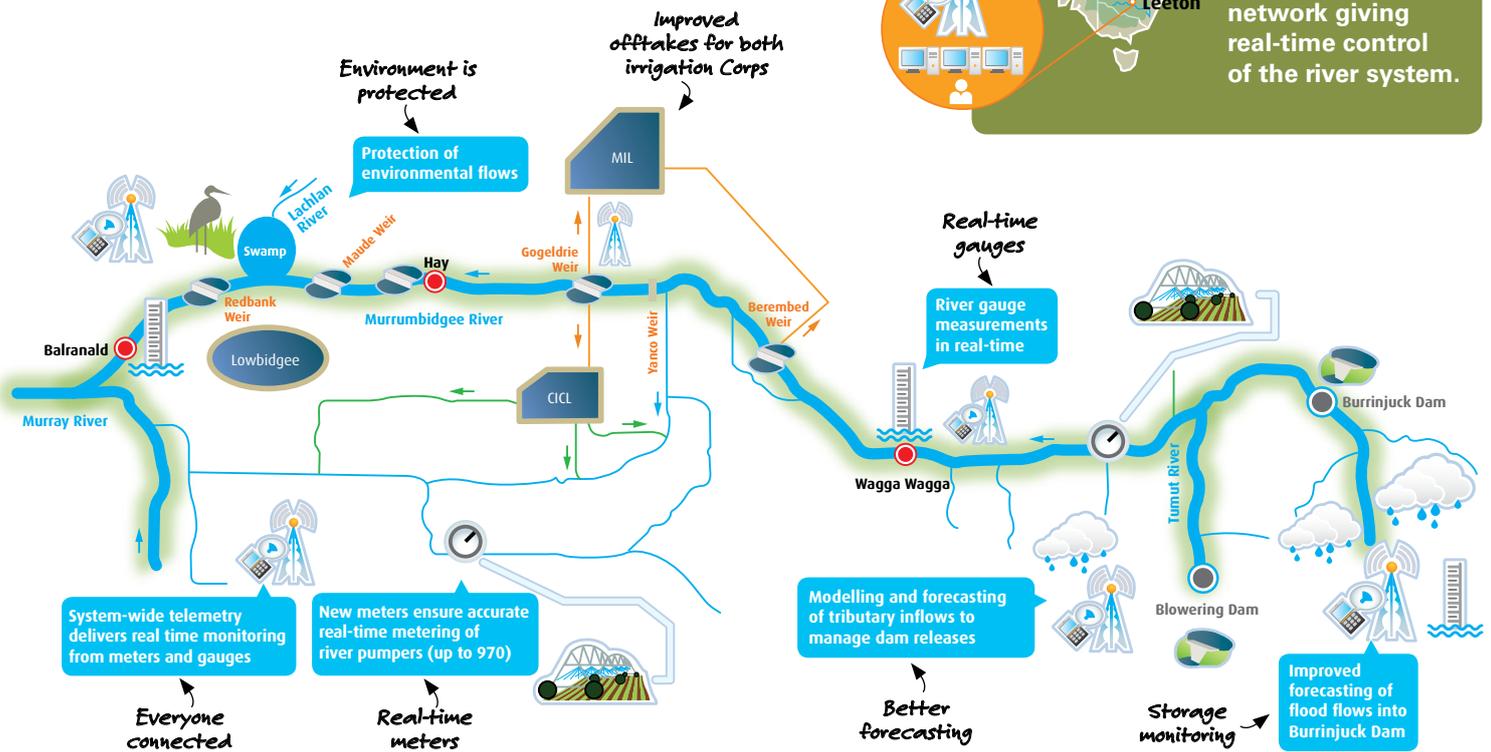
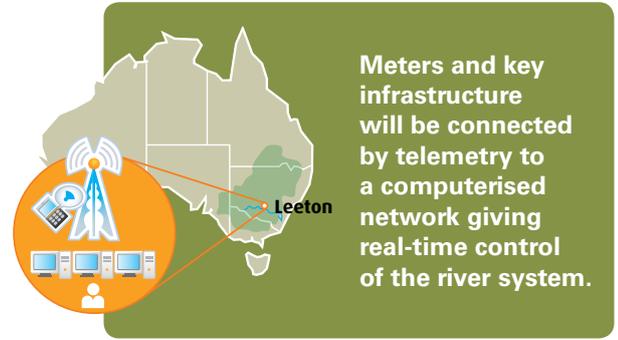
The Project Encompasses Six Contributing Schemes

There are six areas of work which make up the overall project. Two are major and involve the entirety of the river and the majority of water users; the others are specific works to improve management of waterways and storages. All are designed to improve the management and delivery of water in the Murrumbidgee system and, for the first time on a natural system,

monitoring and metering of water will be aided by an extensive computerised management network. Following this work, Australia will have the world's most efficient natural river system, where water – our most valuable environmental and farming input – will be well managed to the benefit of all water users.



Computer Aided River Management



The Computerised Network

The networked operation to be developed is based on established river and catchment computer simulation tools. These simulations can accurately predict water flow travel times (with separate modelling for dry and wet periods).

Using real time and forecast information to its maximum potential, the network will automatically determine optimal water releases. It will monitor and take into account such variables as the effects of rainfall on tributary inflows and more accurately predict the beginning, extent and end of supplementary flows, all-the-while 'self adjusting' to optimise management of the river.

Computer Aided River Management will mean:

- Improved modelling
- Better forecasting of inflows
- Redistribution of water to better meet demand
- Less operational surpluses
- Optimise en-route storages
- Greater control over diversions and flow paths
- Improved shepherding and measurement of environmental water
- Minimising losses

A better Murrumbidgee will mean we make the best use of every drop of water that we have

- More security and certainty for every water user
- Vastly improved river management
- More precise control of flows through system-wide connectivity
- Less wastage of water
- A higher percentage of total flow available for allocation
- Fairer distribution of available water
- Improved environmental outcomes
- Historic opportunity for irrigators to leverage technology into on-farm systems
- Improved on-farm water management delivering greater profitability and convenience

CARM OUTLINE V3_11/11/2010