

Water Challenges for South Australia in the 21st Century.

Government Response to Recommendations in Professor Cullen's Report

Recommendation 1 (Water entitlements)

The Government should establish a high level team to determine how to align South Australian water entitlements with those being developed in other States. This will require them to become familiar with changes being implemented in other States, to review water access entitlements and the rules for water trading in South Australia, ensuring they reflect best practice and meet the National Water Initiative requirements to be compatible with other States. The Review team should be made up of a State official with experience in managing water resources, a representative of the irrigation community and an expert in water entitlements and markets from a research or consultancy organisation.

Government Response

South Australia is participating in the Murray-Darling Basin Commission's Interstate Water Trading Project, which is in part addressing the issues set out in Professor Cullen's recommendation.

The Water Trading Project Board has identified six key water products as being tradeable on a broad scale throughout the Murray-Darling Basin and South Australia is involved in the development of an exchange rates matrix to convert from one product to another. The alignment of water entitlements across the Murray-Darling Basin is a necessary precondition for enhancing interstate trade. As well as the exchange rates models, principles associated with water tagging – where any restrictions associated with a particular water allocation remain with the water when it is traded to a new location - are also being explored. South Australia is also examining the development of a low security product in South Australia to match those in the upstream States.

In addition, SA is an active participant in the Dept Prime Minister and Cabinet's Water Trading Group (established to progress the NWI interstate water trade reforms).

The Department of Water, Land and Biodiversity Conservation will further investigate impediments to water trade and seek to introduce measures that promote a robust water market. This will involve identifying measures that better integrate water market development with water policy and management reform, and measures to improve knowledge of water markets for economic, social and environmental sustainability.

Recommendation 2 (Salinity Measures)

Irrigators should take communal responsibility for the cost of operation of the salt interception schemes that have been built with public money. Salt management is a basic part of the irrigation enterprise, and probably should be built into water prices. The Government should implement a salt trading system for individual landholders so as to provide rewards for those who demonstrate best practice salt management.

The Government and the River Murray Catchment Water Management Board or its successor should amend the Water Allocation Plan to explicitly define salt interception zones, high and low salinity hazard zones and the salt trading rules within each zone and ensure water is not traded into high salinity hazard areas.

Government Response

All River Murray water users benefit from salt interception. The salt interception schemes in operation have largely intercepted natural salt inflows although new schemes are targeted to historic and, to a lesser extent, new irrigation development.

The Government has provided funds to operate salt interception schemes until 2007-08. In the longer term, options for water users to contribute to costs will be developed. The Government is developing a salinity impact offset strategy that will allow impacts at one site to be offset by trading water from other sites.

South Australia has adopted a salinity zoning policy that encourages water trade into low salinity impact areas. The salinity impact of every water trade is assessed and reported to the Murray-Darling Basin Commission with the Government being accountable for offsetting these impacts. Salinity zoning maximises available salinity credits while ensuring that additional salinity impacts of new irrigation development are offset. Salt trading systems are to be evaluated through cooperative work with relevant irrigation districts.

Best practice salt management is already required through the River Murray Water Allocation Plan in that all water trades must demonstrate how they will offset their salinity impacts before the trade is approved. In addition, the Government is working closely with irrigators to encourage improved irrigation practice to reduce salinity impacts on the River Murray.

Recommendation 3 (Water efficiency gains)

Where public funds are used to assist in improving water use efficiency, all or a proportion of the water licence should revert to the Government. Governments should not provide special support to least efficient irrigators; this just makes it harder for efficient operators. An effective water market allows the inefficient to leave the irrigation industry with a financial windfall as they sell their water.

Government Response

As part of the Murray-Darling Basin Commission's First Step decision of 14 November 2003 to recover 500 gigalitres per annum of additional flow in the River Murray, the South Australian Government will only invest in on-farm water use efficiency gains where it is cost effective and provided that water savings can be provided for contribution to environmental flows.

The Water Allocation Plan for the River Murray in South Australia requires irrigators to achieve 85 per cent water use efficiency by 2005 (65 per cent for irrigation between Mannum and Wellington by 2007).

Recommendation 4 (Water Trust)

South Australia should create a River Murray Environmental Water Trust to hold environmental water in South Australia, to seek additional water using whatever State, Federal or other funding may be available and to seek philanthropic donations of money or water and to work with NRM Boards to deliver water to protect specific agreed environmental assets. The Trust needs to work closely with an environmental manager responsible to the Murray Darling Basin Ministerial Council.

Government Response

The Government is encouraging the development of environmental water trusts within the non-government sector. Environmental water trusts could facilitate water transactions between water donors and water recipients to achieve environmental objectives and outcomes. The *Environmental Flows for the River Murray* strategy provides guidelines for assessing environmental flow projects to assist environmental water trusts in facilitating the delivery of water donations for the purpose of improving the health of the River Murray. This will be supported by the development of a rigorous and accountable framework for facilitating environmental water donations.

The *Environmental Flows for the River Murray* strategy foreshadows the establishment of a River Murray Environmental Manager within the new South Australian Murray-Darling Basin Natural Resources Management Board. This will make available significant opportunities for community involvement and will provide a clear way forward in ensuring effective delivery and management of environmental flows. The Government would encourage trusts to work closely with the South Australian River Murray Environmental Manager.

In particular environmental water trusts will be required to produce publicly available information relating to their approved environmental watering projects and report annually to the River Murray Environmental Manager on projects. Environmental water trusts that support environmental watering projects consistent with the guidelines will receive endorsement from the River Murray Environmental Manager. The River Murray Environmental Manager will develop an environmental watering plan in collaboration with other Government departments, taking into consideration the objectives of The Living Murray Initiative and Ramsar Plans.

Recommendation 5 (Ecological study of Lower River Murray & Coorong)

The South Australian Government should undertake a comprehensive ecological study of Lake Alexandrina, the Coorong, Lower River and Murray Mouth to inform management as to the needs of this important environmental asset and ensure it can be managed effectively. This will require a 3-5 year study and should identify future trajectories of the ecological assets under different salinity regimes and during wet and dry periods. The study would benefit by engaging indigenous knowledge of the Coorong and how it functions.

Government Response

The Government has initiated a comprehensive program that includes a combination of on-ground works, scientific investigations and monitoring (both physical and ecological) and the development of an Asset Environmental Management Plan (AEMP) with the ultimate objective of managing existing and additional flows to improve river health.

The AEMP aims to achieve a healthier Lower Lakes and Coorong estuarine environment, through an open Murray Mouth, enhanced migratory water bird habitat in the Lower Lakes and Coorong and more frequent estuarine fish spawning and recruitment.

The program is being undertaken through strong partnership arrangements between Government, the Murray-Darling Basin Commission, South Australian Murray-Darling Basin Natural Resource Management Board, CSIRO Healthy Country Program, and the Ramsar Taskforce. Priority actions include the installation of fish passage and gate automation at the barrages, a sand pumping program and associated monitoring at the Murray Mouth, a socio-economic study, and the establishment of a robust and comprehensive physical and ecological monitoring program to increase the understanding of the relationship between barrage outflow and the ecological health of the Coorong and Lower Lakes. The program, has also involved SARDI Aquatic Sciences, University of Adelaide, Department for Environment and Heritage and CSIRO, and will address the need for baseline information on the ecological health of the Lakes and Coorong. This information is being used to inform future flow management decisions to achieve ecological outcomes that are integrated with other natural resource management objectives and that recognise and respect the rights of Aboriginal people and other water users. Indigenous knowledge is being incorporated into the Plan through a specific process to determine the indigenous values of the Ngarrindgeri people. A Ngarrindgeri facilitator will be employed to provide specific indigenous input into the management of the environmental assets.

Recommendation 6 (Ecological Impacts of Weir Pools)

The South Australian Government should continue to explore the ecological benefits of raising and lowering water level in weir pools of the River Murray and work with the community to explore what can be done in this regard to improve the health of the river.

Government Response

It is well documented that the maintenance of stable weir pools in the lower River Murray is having a significant impact on riverine ecology. In particular, the reduction in seasonal variation in water level is inhibiting key ecological processes and contributing to a decline in river health. This decline is further compounded by the risks associated with climate change and the associated potential reduction in available environmental water.

It is recognised that localised benefits may be achieved in the short to medium term through smarter operation of river management infrastructure. This is acknowledged in South Australia's strategy for *Environmental Flows for the River Murray*, in which weir manipulation has been identified as a priority action.

Recommendation 7 (Role of Commissioners)

South Australia should appoint one of its Murray-Darling Basin Commissioners to speak with a whole of government focus and use the second Commissioner position as an opportunity to appoint an expert in a relevant area with a five-year term to both provide some substantive knowledge amongst Commissioners and to provide some stability which has not been attainable with the frequent changes of heads of agencies.

Government Response

The South Australian Parliamentary Select Committee for the Murray River (2001) also recommended changing Commission appointments to a combination of independent experts and senior bureaucrats from member governments.

The full structure of the Murray-Darling Basin Commission is a matter for all of the six Governments of the Murray-Darling Basin to determine. However, South Australia agrees there is merit in appointing an independent expert to represent South Australia, together with State Government executives, at this important forum and is currently considering the appointment of such an expert.

Recommendation 8 (Responsibility for Sustainable Water Use)

SA Water should be required initially to stabilise per capita consumption within 3 years, and then to reduce it by 10% within 10 years. Consideration should be given to having SA Water responsible to the Minister for Environment and Conservation as well as the Minister for Administrative Services to ensure sustainable water use is given equal status with generating revenue.

The Government should encourage water sensitive urban developments in new areas and in major redevelopments by a range of measures including zoning, subsidy and development charges. The Government should develop a single whole of Government water conservation program rather than have several competing programs.

Government Response

The Government 's response to this recommendation is discussed below under the headings:

- Water consumption,
- Ministerial responsibility
- Urban design and
- Water conservation programs.

Water consumption

This rate of reduction in per capita consumption is consistent with the Government's Water Proofing Adelaide strategy, in which a 22% reduction in per capita household water use is to be achieved by 2025. Water Proofing Adelaide indicates that this could be achieved by implementing relatively simple water conservation measures.

A pre-emptive move to reducing per capita water consumption is also considered desirable in light of population growth targets and climate change forecasts, which are expected to result in increased pressure on water resources, reduced rainfall and increased evaporation. A ten per cent per capita reduction is regarded as achievable by progressive authorities in other Australian States.

Ministerial Responsibility

The Minister for Administrative Services has overall responsibility for SA Water. However, both the Minister for Environment and Conservation and the Minister for the River Murray are responsible for sustainable water use and accordingly influence the activities of SA Water via legislation they administer.

These three Ministers have met regularly to ensure co-ordination and develop and implement sustainable water use policies. This arrangement will now be formalised and will include regular reporting on the implementation of *Water Proofing Adelaide* to ensure sustainability targets are met.

Urban design

The Government will undertake a number of actions to foster water sensitive urban design in accordance with the National Water Initiative

The Draft Planning Strategy seeks to change the way that authorities determine eligibility for new development. Developers would need to be cognisant of water resource management when developing planning applications. New urban development is required to incorporate water sensitive urban design based on a need to provide environmental water requirements at the catchment scale, improved water quality and manage flood risk.

The Draft Planning Strategy for Metropolitan Adelaide incorporates 'water-sensitive urban development' based on catchment level requirements and flood risk management principles into development proposals and Development Plans. It also includes strategies to

- Undertake water-sensitive urban development (WSUD) and associated infrastructure development in order to provide neutral drainage impact as a result of infill development (upstream and downstream).
- Utilise combinations of design and management mechanisms at the site, block, subdivision and catchment levels to ensure flood risk is not increased.
- Ensure compatibility between water-sensitive urban design infrastructure with existing conventional infrastructure in the catchment, taking into account the impact of the development on existing infrastructure.
- Make provision for rainwater storage into plumbing and general building design for use of rainwater in bathrooms, toilets and laundries.
- Ensure industrial development has access to effective wastewater systems which connect to the sewer, or which allow for treatment and re-use.

Water conservation programs

Water Proofing Adelaide provides a framework for integrating water conservation programs. In addition, the Government's WaterCare initiative provides a whole-of-government approach to communications on water issues within South Australia. WaterCare is an over-arching approach to raising awareness of water issues and promoting responsible water use and management. It is supported by a range of communications and education programs conducted by the partner agencies including the Environment Protection Authority, the Department of Water, Land and Biodiversity Conservation, the Department for Environment and Heritage, NRM Boards (previously Catchment Water Management Boards) and SA Water.

These programs are designed to meet a range of organisational and Government priorities including sustainability, demand management and pollution avoidance and are targeted to a range of different audiences. This reflects the need for a range of different water education programs.

The Government has introduced permanent water conservation measures for mains water users which has resulted in householders, local government, business and industry now using water more effectively. Consideration is being given to extending these measures to other water users such as watercourses, lakes surface water, groundwater and effluent.

Recommendation 9 (Hills Catchment)

The South Australian Government should take the following actions to protect the Hills catchment:

- *proclaim the catchments under the water resource provisions of the new Natural Resources Management Act to control farm dams and bores from extracting more water from the catchment;*
- *require metering for all commercial extractions from surface or groundwater;*
- *demand effective land use planning that prevents further urban development in the catchments and insist on appropriate infrastructure to deal with sewage;*
- *strengthen the Mt Lofty Watershed Protection Office and let it expand its programs to assure compliance with pollution control requirements, and*
- *pay landholders who contribute good quality water for the ecosystem services they provide the community; charge those who contaminate waterways.*

Government Response

The water resources of the Eastern Mount Lofty Ranges were prescribed in September 2005 and the water resources of the Western Mount Lofty Ranges were prescribed in October 2005.

Prescription establishes a system for water resource planning and the sustainable allocation and management of water. This provides security of access to water for rural water users, protection of water supplies to Adelaide and provision of water to support and sustain water dependent ecosystems.

A temporary moratorium on new or additional water use also applies in these areas. The moratorium will hold water use while water allocation plans are developed.

As a result of prescription most water users would need a licence to extract water for commercial use. The State Metering Policy requires that in prescribed areas, water users must install a meter once they receive a water licence.

Land subdivision, outside of towns, in the Watershed has been a non-complying development activity in the Development Plan since 1986, preventing additional allotments outside of towns in the Watershed. Existing planning strategies for the region are being reviewed and revised, with consideration being given to strengthening the Development Plan to include prohibition of land division in the watershed and ensuring that adequate sewage systems are maintained and expanded.

The Watershed Protection Office has made significant progress in pollution prevention and addressing water quality issues since it was established in September 2000. The Government recognises that substantial risks remain and that the multiple land uses in the Mount Lofty Ranges Watershed require ongoing management.

The Government supports the concept of rewarding landholders who contribute to good water quality and the application of financial disincentives for landholders who contribute to poor water quality. The application of positive incentives for landholders to retain, manage or enhance native vegetation is also supported. The NRM Council and Boards will consider these complex issues and the mechanisms for achieving them and ensure that effective community consultation on issues is undertaken.

Recommendation 10 (Recycled Water)

SA Water should be encouraged to use recycled water as a replacement for potable water in appropriate uses and should work with the development industry to encourage this in new developments and redevelopments.

Government Response

The Government has recently released the Water Proofing Adelaide strategy which sets targets to achieve greater use of recycled water. There is significant activity occurring both in the Adelaide region and elsewhere in South Australia to make better use of effluent and stormwater. NRM Boards, Local Government and SA Water are actively developing opportunities to substitute reticulated water. Examples include urban runoff reuse at Morphettville Racecourse, treated industrial effluent and urban runoff for the Whyalla golf course, the Mawson Lakes dual reticulation scheme which provides treated effluent and stormwater for domestic purposes, and the Salisbury Council aquifer storage and recovery scheme for use in industry.

SA Water and private enterprise are developing new uses of reclaimed water from the Bolivar, Christies Beach and Port Lincoln treatment facilities. Adelaide has one of the longest running sewage-effluent reuse schemes in Australia (at Glenelg for several golf courses since early 1970s).

SA Water is now recycling approximately 21 per cent of Adelaide's wastewater for horticulture in the Virginia triangle, viticulture in the Willunga basin and for the watering of parks and gardens in the Metropolitan area. There is further potential to extend the wastewater recycling schemes to reach new metropolitan, outer metropolitan and country areas for irrigation. Water Proofing Adelaide seeks to more than double the amount of wastewater recycling by 2025 from the current 14,000 ML per annum to 30,000 ML.

Recommendation 11 (Stormwater responsibility)

The Government should clarify the control over and responsibility for stormwater, and encourage its use as a commercial resource for water supply for appropriate uses. A roundtable conference between the environmental regulator, the health regulator and the relevant research community should

negotiate an appropriate regulatory environment that encourages the development of aquifer storage and recovery and a pricing and management regime put in place to protect groundwater.

Government Response

The Urban Stormwater Management Policy for South Australia was approved by the Government in May 2005. It sets out the complementary responsibilities of State and Local Government instrumentalities in relation to stormwater management. It recognises that stormwater management objectives have diversified from the traditional emphasis on flood mitigation by incorporating multiple objectives for stormwater management, including flood management, reuse, water quality and amenity into planning and decision-making.

The policy sets out a range of strategies for regulating stormwater, including providing certainty of access rights to stormwater resources and watercourses of the Adelaide plains, improved water quality targets in urban areas and improved information about aquifer storage capacity. Consideration of environmental, health and other regulatory issues to encourage ASR will be considered through further development of the Urban Stormwater Policy.

A review of governance and funding arrangements for urban stormwater management is also considering the establishment of an entity which could exercise coercive powers as a last resort to require local councils that contribute stormwater in a catchment to also contribute to planning and works to promote enhancements to flood management, reuse, water quality and amenity. The entity would also allocate state funds to catchment works.

Recommendation 12 (Desalination Policy)

The Government should develop a State policy towards desalination that addresses planning issues, access to saline water, disposal of brine and management of other environmental impacts. The support the Government may provide to appropriate proposals could be outlined to encourage innovation in this area.

Government Response

Water Proofing Adelaide flags the Government's intention to develop a State policy towards desalination that addresses planning issues, access to saline water, disposal of brine and management of other environmental impacts.

There are some policies already in place that deal with the environmental impacts of desalination:

- saline groundwater water extraction requires assessment and where prescribed, licensing;
- brine disposal on land is covered under the Environment Protection (Water Quality) Policy 2003 and requires a license for significant disposal

schemes (disposal of >50,000 KL/day containing chemical or biocide treatments - generally necessary to run desalination plants);

- Saline disposal into the marine environment would be covered by the Environment Protection (Water Quality) Policy 2003; and
- The impact on sea vegetation (eg sea grasses) of drawing water from the sea is covered by the *Native Vegetation Act 2003*.

Desalination plants already operate at Penneshaw (SA Water), Coober Pedy (Local Government), Roxby Downs (WMC), Moomba (Santos), and road houses along the Nullarbor.. In addition, a number of proposals have been forthcoming from energy producers for the conjunctive generation of energy and desalinated water and these are being investigated.

Recommendation 13 (Independent Price Regulator)

The South Australian Government should establish an Independent Price Regulator to review and establish appropriate urban and rural water prices in South Australia. The National Water Initiative provides an excellent framework for implementing this without delay.

Government Response

The Government determines mains water and sewerage prices annually following advice prepared by SA Water with input from other agencies.

From 2004-05 the Government has instigated a more transparent approach to water pricing. The Government tabled in Parliament the *Transparency Statement – Urban Water Prices in South Australia 2004-05 (parts A, B and C)* in June 2004 and the *Transparency Statement – Wastewater Prices in South Australia 2004-05 (parts A, B and C)* in November 2004. The *Transparency Statement Water and Wastewater Prices in Metropolitan and Regional South Australia 2005-06 (Parts A, B and C)* was tabled in May 2005. The *Transparency Statement Water and Wastewater Prices in Metropolitan and Regional South Australia 2006-07 (Part A)* is also available on the Treasury and Finance website.

The Transparency Statements aim to:

- Provide greater transparency in the setting of water and wastewater prices;
- Document and report on the matters considered in the Government's water and wastewater pricing decision; and
- Document the extent to which the Government's water and wastewater price setting processes have complied with Council of Australian Governments' (COAG) principles

The Essential Services Commission of South Australia (ESCOSA) undertakes an independent review of the process and its adequacy in relation to the 1994 COAG water reform framework.

The National Water Initiative signed in June 2004 places a number of new obligations on South Australia. The Government will consider all issues

further through the implementation plan being developed for the National Water Initiative.

Recommendation 14 (Remote Communities)

The Government should consider putting the water supply of remote communities out to tender to ensure it stimulates innovation and develops the most cost effective approach to water supply for these communities. Any cross subsidy needs to be transparent.

Government Response

Providing water supply to remote communities presents particular challenges.

Government is working in partnership with local communities to develop appropriate and innovative solutions to their water supply needs.

The majority of water infrastructure capital projects are already publicly tendered by SA Water. This ensures costs are as low as possible, and provides some scope for innovative delivery options.

The cost of subsidising the operation of regional and remote water services is recognised in the State Budget via community service obligation payments, providing a level of transparency.

SA Water is currently contracted through a MOU by the Department of Aboriginal Affairs and Reconciliation to project manage capital works, routine maintenance, and monitoring of water supply systems in Aboriginal communities. SA Water has developed an outback standard for remote community infrastructure and has contractors undertaking capital, maintenance and monitoring works in Aboriginal communities.

Recommendation 15 (NRM Board Support)

State agencies need to work together to support the NRM Boards with resources and appropriate knowledge, and need to clearly articulate the wider state interest that must be incorporated into plans.

Government Response

The Government is committed to facilitating the support needed to carry NRM Boards through the initial transition stage. Beyond that time a range of funding mechanisms, including ongoing State funding, will be used to provide the necessary support.

The State Natural Resources Management Council has released a consultation draft of the State NRM Plan with a view to articulating the wider State interest. The document represents a major step towards the development of an overall state-wide framework for NRM planning. At the regional level, DWLBC officers are directly engaged in briefings and support of NRM Boards with a view to the preparation and adoption of Regional Plans.

Relevant Commonwealth, State and Local Government agencies are represented on the NRM Council and NRM Boards.

Recommendation 16 (Centre for Natural Resources)

The Centre for Natural Resources should identify appropriate research expertise for various issues within the State and elsewhere, and develop a knowledge strategy for regional bodies that identifies knowledge gaps and make these known to the research community, as well as make specific investment in priority areas.

Government Response

The Government has reviewed and reformed the role and operation of the Centre for Natural Resource Management and how it supports the knowledge needs of those instrumentalities with responsibility for implementation of natural resource management programs. Recent changes to the membership of the Investment Advisory Board and operations of the Centre for Natural Resource Management ensure that it engages with the Natural Resource Management Council and regional Boards as well as agencies in developing research priorities and in determining investments.

Recommendation 17 (Communities of Practice)

The Department of Water, Land and Biodiversity Conservation should facilitate and support “communities of practice” of key people from each Natural Resources Management Board and the technical community to meet say three times a year to share information and experiences in the specific areas of interest.

Government Response

A fundamental objective of South Australia's Natural Resources Management (NRM) program is the development and promotion of a more integrated approach to natural resource management. An integrated approach to the use of technical resources and the dissemination of information is central to the achievement of this objective.

This is being addressed in a number of ways. The *Natural Resources Management Act 2004* provides for advisory committees to be established at the State, regional and sub-regional levels. It is likely that several of these committees will have a technical focus and will therefore facilitate the sharing of technical information. In addition, the Department of Water, Land and Biodiversity Conservation (DWLBC) has convened a working group to examine partnership arrangements that should apply between State agencies and NRM Boards. The focus of this working group will include partnership arrangements to facilitate the delivery of technical services to the regions.

Recommendation 17 specifically proposes regular cross-regional meetings to facilitate sharing of information and experiences. DWLBC will work with NRM Boards to ensure that cross regional networks are developed and maintained.

Recommendation 18 (Integrated Water Assessment Program)

The State needs to implement an integrated water assessment program that provides data on streamflow, water quality, river health, groundwater depth and quality. These data need to meet the needs of a range of data users, and should be publicly available. Periodic interpretative reports should be made available, perhaps through State of the Environment reporting.

Government Response

Data is currently collected on streamflow, water quality, river health, groundwater depth and quality, by different agencies through programs that are not integrated. Availability of these datasets to a range of users varies considerably. Information and evaluation of these datasets is also not integrated to provide a comprehensive picture of catchment health. This lack of integration impacts on catchment management planning and reduces our ability to develop strategies to deal with issues such as climate change and the loss of native species.

As this issue has broad applicability across the natural resource management sector, it is being addressed through the development of an integrated natural resource management information system and a State monitoring and evaluation framework. These initiatives will require significant investment in systems and human resources and the development of strong linkages across the NRM sector and with the State's Chief Information Officer.

Prepared by Department of Water Land and Biodiversity Conservation