

WATER FOR GOOD

Annual
Statement **2011**



Government
of South Australia

Department for Water

Water is our most valuable resource.

It's fundamental to our health, our way of life, our economy and our environment.

Tracking the implementation of **Water for Good** is vital to its success.

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MESSAGE FROM THE MINISTER FOR WATER AND THE RIVER MURRAY



Water is one of South Australia's most valuable resources, and the Government's vision is for all South Australian families and communities to continue to enjoy the benefits of a safe and secure water supply.

The State Government commissioned the **Water for Good** plan in June 2009 in response to the prolonged dry period which impacted on the entire State and saw the rapid deterioration of the South Australian stretches of the River Murray and Lower Lakes. The plan outlines 94 actions to help diversify our water sources, improve the way we allocate and use water and improve and modernise our water industry.

The state of water in South Australia has changed dramatically since the release of **Water for Good**, with improved water supply due to increased rainfall and inflow into the River Murray system. However, it is vital that we manage our precious water resources for current and future generations.

This is why **Water for Good** will continue to be implemented to ensure a future where, even in the driest years, our community can feel confident that there will always be enough water.

Two years on from the release of **Water for Good**, significant progress has been made on most of the commitments. This demonstrates how collaboration and partnerships between community, industry and Government contributes to achieving our ambitious and important water goals.

A number of major milestones have been achieved under **Water for Good** in the past year. The Adelaide Desalination Plant is now producing desalinated water and is expected to be fully commissioned by the end of this year.

South Australia continues to be a national leader in stormwater harvesting and re-use and wastewater recycling. In addition to this leadership, a Stormwater Strategy has been released, detailing nine actions to improve stormwater management in Adelaide.

Regional demand and supply statements are being developed across the State to account for available drinking and non-drinking water supplies and future demand and supply requirements. Significant legislation is also being progressed, with the Water Industry Act to enshrine an open, transparent and collaborative approach to water demand and supply planning.

Getting the right balance for the River Murray is essential and we are working as closely as possible with the Murray-Darling Basin Authority to ensure that a workable, fair and realistic whole-of-basin plan comes out of the drafting and consultation phase we are currently going through.

I would like to congratulate all involved in the implementation of **Water for Good**. We are truly leading by example when it comes to sustainable water resource management and smart water use – and it is vital that we continue this leadership. We have already come a long way, however in the context of a 40-year strategy we are still in the early stages. We will continue to meet the challenges in achieving all the targets in the plan as the State's water environment continues to change.

By continuing to work together to achieve the targets in **Water for Good**, we will all enjoy the benefits of a sustainable water supply for our health, our economy, our environment and our lifestyle.

A handwritten signature in blue ink, appearing to read 'P. Caica'.

Paul Caica

Minister for Water and the River Murray



CONTENTS

INTRODUCTION	7
PROGRESS HIGHLIGHTS	8
Adaptability, Monitoring and Evaluation	8
Desalination	9
Stormwater Recycling	10
Wastewater Recycling	12
Using and Saving Water	12
Rain, Rivers, Reservoirs and Aquifers	14
Planning	16
Fostering Innovation and Efficiency	16
Legislative and Regulatory Change	17
Pricing and Market Instruments	17
ASSESSMENT OF SOUTH AUSTRALIA'S WATER SUPPLIES	18
GREATER ADELAIDE 2010-12 SUPPLY AND DEMAND	18
Greater Adelaide Actual and Projected Available Supply (2010-2011)	20
Review of Assumptions (Greater Adelaide)	22
EYRE PENINSULA DEMAND AND SUPPLY	24
Eyre Peninsula 2010-2011 Supply and Demand	24
Eyre Peninsula 2010-2011 Actual and Projected Available Supply	24
Review of Assumptions (Eyre Peninsula)	25
THE YEAR AHEAD AND FUTURE PRIORITIES	29
BIBLIOGRAPHY	30



INTRODUCTION

Water security remains one of the key challenges facing South Australia. Managing the State's water resources is no longer solely a natural resources issue; it must also address economic development, population growth, water markets and urban planning.

That is why in June 2009, the South Australian Government released **Water for Good**, a plan to ensure the State's water security to 2050. **Water for Good** outlines 94 actions to help diversify our water sources, improve the way we allocate and use water and improve and modernise our water industry.

The implementation of the wide ranging actions in **Water for Good** have already seen South Australia being recognised both nationally and internationally as an innovative leader in water management and as delivering on the foundation of the strategy for us to be a truly 'water sensitive state'.

The Government tracks the implementation of **Water for Good** on a quarterly basis and annual reviews of progress and water supply and demands are essential elements of this approach. This Annual Statement for 2011 is the second such annual report, which has been prepared against the following criteria:

- Assessment of progress and identification of any risks or issues
- Evaluation and confirmation of water security standards for the next review period
- Provision of demand and supply status information about Greater Adelaide and other Natural Resources Management regions
- Identification and analysis of the impacts of emerging issues.

The 2011 Annual Statement highlights that most **Water for Good** actions are well progressed and being implemented with a significant degree of collaboration across Government and with other levels of Government, the private sector and the broader community.

Of the 94 Actions listed within *Water for Good*, 16 have been completed, 56 are on track and 25 are experiencing some delay. No Actions are significantly behind and one has a rating of not being applicable (Action 57, construction of a temporary weir at Pomanda Island).

While work on most actions is on schedule, it will continue to be a challenge to meet all the targets in the plan as the State's water environment changes. It is essential that Government remains flexible to ensure an adaptive approach to the management of our precious water resources.

It is important to note that **Water for Good** was developed during an unprecedented drought across South Australia and in an environment where the Government was required to make important decisions to secure our water supplies and to protect the River Murray system.

It continues to be important that the South Australian community is confident that our water supplies are safe, secure and reliable, in an increasingly variable climate. This is why **Water for Good** and each Annual Statement include projections for water demand and supply under both 'moderate dry-year' and 'extreme dry-year scenarios'.

The assessment of demand and supply for Greater Adelaide for 2010-11 confirms that no major assumptions have changed and no new issues identified that warrant a review of the projections, or actions, outlined in the plan.

The Annual Statement for 2011 has been released in May 2012 to allow for the most current data to be used to estimate demand and supply scenarios for Greater Adelaide and other Natural Resources Management (NRM) regions. The Water Industry Bill, recently passed by Parliament, will enshrine in legislation a requirement for ongoing annual reporting of the State's water security status.

While South Australia's water supply situation has improved dramatically since the release of **Water for Good** as a result of improved rainfall and inflows to the River Murray system, there is still a need to continue with its implementation, the diversification of the State's water supplies and the wise use of our precious water resources.

PROGRESS HIGHLIGHTS

Two years after the release of **Water for Good**, significant progress has been made on most of the commitments, with the State on track to achieve all of the plan's targets.

This section provides an overview of the key achievements during 2011. A comprehensive assessment of all of the plan's 94 actions is provided in the Report Card and available on the **Water for Good** website; www.waterforgood.sa.gov.au.

ADAPTABILITY, MONITORING AND EVALUATION

The Government continues to monitor progress of all actions contained in **Water for Good** and reports quarterly to the Water Security Council.

In order to ensure improved strategic linkages across water management and other related areas of Government, a re-focused Water Security Council was established in 2011. The Council is chaired by the Minister for Water and the River Murray and includes the Minister for Agriculture, Food and Fisheries; Chief Executives from the Department for Water, Department of the Premier and Cabinet, Department of Treasury and Finance, SA Water, Department of Planning, Transport and Infrastructure, Primary Industries and Regions SA, Department of Environment and Natural Resources and Department of Manufacturing, Industry, Trade and Resources; as well as the Chair of the Goyder Institute for Water Research and the South Australian Chief Scientist.

Underpinning the actions in **Water for Good** is an adaptive management framework, based on constant monitoring, which allows for water management responses to adapt to changes in the policy environment and resource conditions.

Given the changing nature of regulation around the water sector, particularly the new National Guidelines for Drinking Quality Water and the Water Industry Act, the Department for Water has been refining water security standards to ensure that they appropriately define risk points for future water security and link with new legislative processes. It is anticipated that these standards will be finalised by the end of 2012.



The standards will be based around the following parameters:

- System water quality
- Cost effectiveness
- Capacity of the supply system
- Source water
- Consumer efficiency
- Demand (population and economic growth)
- Climate change scenarios
- Environmental requirements
- Restrictions.

The other key element of an adaptive management approach is the ongoing review of demand and supply for Greater Adelaide and across the State's eight NRM regions.

Regional Demand and Supply Statements provide a long-term overview (to 2050) of the likely demand and supply of drinking and non-drinking quality water within regions, under scenarios of both high and low climate change impact and population growth. They provide the opportunity to identify when demand for water may exceed supply ahead of time and detail the trigger points for the establishment of an Independent Planning Process to consider demand management and supply augmentation options to address the projected imbalance.

In April 2011, the Regional Demand and Supply Statement for the Eyre Peninsula region was released, and was the first such statement for our NRM regions. A Regional Demand and Supply Statement for the Northern and Yorke region was released in December 2011.

DESALINATION

To provide security to the State's water supplies, non-rainfall dependent desalination options are essential. The Adelaide Desalination Plant achieved the production of its first desalinated water at the end of July 2011 and is expected to be fully commissioned by the end of this year.

Assessment of the need for, and the design of, interconnection works between the northern and southern suburbs to enable the supply of water from the Adelaide Desalination Plant across the city has been completed following extensive public consultation and engagement, with construction already underway.

Options for providing desalination to supplement Eyre Peninsula water resources continue to be investigated by SA Water and are being linked with ongoing assessment of the water demands and supply in the region through the Eyre Peninsula Demand and Supply Statement.

SA Water is also continuing to assess the need for groundwater desalination plants for regional locations where salinity is an issue. Investigations into the provision of a groundwater desalination plant for the township of Hawker have been undertaken and a project plan is being developed.

In addition, the development of a Statewide Desalination Policy is being progressed in alignment with key aspects of the Water Industry Act.



STORMWATER RECYCLING

South Australia continues to be a national leader in respect to stormwater harvesting and re-use. By 2013, South Australia will have the capacity to harvest approximately 23 gigalitres per annum from such schemes.

In addition to schemes being established across metropolitan Adelaide and regional areas of the State, the Government is investing \$48.6 million in conjunction with significant funding by the Australian Government and local government in eight key harvesting projects. These projects are:

- Water Proofing the West
- Adelaide Airport Stormwater Scheme
- Unity Park Biofiltration
- Water for the Future
- Waterproofing the South Stage 2
- Adelaide Botanic Gardens Aquifer Storage and Recovery Scheme
- Barker Inlet Stormwater Re-use Scheme
- Oaklands Park Stormwater Harvesting and Re-use Scheme.

Construction on most of the projects has commenced and all are on track to be completed by June 2013, providing capacity to harvest eight gigalitres per annum.

Building on the establishment of stormwater harvesting and re-use infrastructure, in July 2011 the Minister for Water and the River Murray released the Stormwater Strategy – The Future of Stormwater Management as a roadmap to achieving the target of harvesting 60 gigalitres of stormwater across Greater Adelaide by 2050 and ensuring that our approach to stormwater is integrated into the management of other urban water resources across Adelaide.



The Strategy was developed by the Stormwater Taskforce, chaired by the Chief Executive of the Department for Water and including senior representatives from the Stormwater Management Authority, SA Water, the Adelaide and Mount Lofty Ranges Natural Resources Management Board, the Local Government Association and the Goyder Institute for Water Research.

The Stormwater Strategy details nine actions to improve stormwater management in Adelaide, including a commitment to the development of a 'blueprint for urban water' to bring together stormwater and wastewater alongside other water resources in the Adelaide region; guide future infrastructure investment and policy requirements; and assist Adelaide to transition to a water-sensitive city. Such a blueprint will be the first integrated urban water management plan for a capital city in Australia.

Other actions outlined in the Strategy include:

- Introducing interim targets for water-sensitive urban design
- Completing further studies to improve the knowledge and management of public health risks relating to the recycling of stormwater
- Further improving the management of flood risk by prioritising flood mitigation scheme proposals
- Ensuring a strong scientific basis for our future approach to urban water management.

Significant progress has been made with the drafting of a new State and Local Government Stormwater Management Agreement between the State Government and the Local Government Association. The new Agreement proposes a range of actions to improve collaboration between the two spheres of Government on stormwater matters and will outline a more strategic role for the Stormwater Management Authority. Consultation on the draft Agreement was initiated in March 2012.



WASTEWATER RECYCLING

As with stormwater, South Australia is the national leader in regard to wastewater recycling, with approximately 31 percent of the wastewater from SA Water plants re-used each year for a range of fit-for-purpose activities. **Water for Good** details a target for 45 percent of wastewater to be recycled from urban areas by 2013.

The 2010 Annual Statement identified a number of new recycling schemes that are being established in line with the **Water for Good** target. These include the Glenelg to Adelaide Park Lands Recycled Water Project, the Southern Urban Re-use Project and the Statewide Wastewater Recycling Project.

Supporting such initiatives, **Water for Good** also includes a commitment to develop a wastewater masterplan. Following the release of the Stormwater Strategy, this masterplan will now be progressed as part of the Blueprint for Urban Water to ensure an integrated approach to stormwater, wastewater and other water resources across Greater Adelaide. The blueprint will be completed by 2014.

The Department of Planning, Transport and Infrastructure has started work on guidelines which will assist developers and local government to assess opportunities for wastewater schemes. These guidelines will be a component of the Blueprint for Urban Water.

USING AND SAVING WATER

South Australians continue to show a commitment to water use efficiency and the State is in an enviable position with regard to public engagement in water management matters.

Water Wise Measures are in place across the State. The Water Wise Measures allow for watering of gardens and lawns at any time by hand (through a hand-held hose fitted with a trigger nozzle, a watering can or bucket) or through a drip-feed irrigation system. Sprinklers can be used on any day after 5.00pm and before 10.00am. Children can play under the sprinkler or use water toys that attach to a hose at any time of the day as long as the sprinkler or toy is located on a grassed area or garden and is turned off when children are not playing under it. Other arrangements are also in place for washing of cars, construction and home pools.

With the breaking of the drought, the H₂OME Rebate Scheme has been modified and now covers only stand-alone rainwater tanks and residential retrofit program rebates.



Water for Good Annual Statement 2011

The Government has also taken on a leadership role with regard to its own water use efficiency in publicly-owned buildings. In 2011, the Government established a policy requiring the adoption of water-efficient fittings in its buildings undergoing refurbishment, where it is cost effective. The impacts of this initiative will be reviewed in late 2012 to identify other water efficiency measures that could be feasibly adopted across publicly-owned buildings.

A water leak detection program for Mount Gambier was completed in December 2011 and reduced water loss in the South East by an estimated 204 megalitres per annum.

Community education and engagement is a key theme in the implementation of **Water for Good**. The **Water for Good** website continues to be used as an effective means of updating the community on water management issues, while the WaterConnect website provides important information and data on such matters as the state and condition of surface and groundwater systems. It also provides information about irrigator licences and water levels for recreational use.

The following initiatives support the on-line provision of information:

- The establishment of an annual awards program and sponsoring of existing award programs to recognise the achievements of communities, individuals, schools, businesses, industry and governments
- Programs targeting various ethnic communities, with water wise educational products being translated into 17 different languages
- More than 770 schools and councils issued with an Irrigated Public Open Space permit confirming that they do not use mains water to irrigate less than 5,000 square metres of turf
- A WaterWise Communities program established between the Department for Water, SA Water and the Local Government Association, encouraging householders, businesses, schools and community groups to use water wisely
- A WaterWise kit specifically designed for schools, launched in October 2011.



RAIN, RIVERS, RESERVOIRS AND AQUIFERS

The South Australian Government continues to advocate for a Murray-Darling Basin Plan that ensures a long term sustainable environment across the Basin that will continue to support the communities and industries that rely on a healthy river system.

Upon release of the proposed Basin Plan in November 2011, the Premier announced the establishment of a Taskforce to co-ordinate South Australia's response. The Taskforce includes the Premier, Deputy Premier, Treasurer, Minister for Water and the River Murray, Minister for Agriculture, Food and Fisheries, Minister for Infrastructure, the Chief Executive of the Department for Water, the Under Treasurer and the South Australian Chief Scientist.

The Taskforce is responsible for considering the proposed Plan's implications for South Australia and coordinating scientific and ecological analysis of the proposed Plan, as well as the State's legal rights.

In addition, the Premier established a Community Leaders Forum and has visited several South Australian Basin communities to ensure a coordinated and united response to the proposed Basin Plan.

Assessment of the various scenarios detailed in the Guide to the Proposed Basin Plan, released in 2010 by the Goyder Institute for Water Research, suggests that the return of 3,500 to 4,000 gigalitres of water to the Basin is the minimum that is needed to return the Basin to health.

The South Australian Government's response to the proposed Basin Plan was delivered to the Murray-Darling Basin Authority (MDBA) in April 2012.

Against this backdrop, the Government has worked with the MDBA to draft new schedules to the Murray-Darling Basin Agreement to give effect to the State's rights to carry over and store water for critical human needs, as well as for private carry-over. For the first time, South Australia will have the ability to store water in upstream dams which will help manage the risks associated with future droughts and reduce the need for special water-sharing arrangements to be negotiated with other states on an annual basis.

A review of the Murray-Darling Basin Agreement is underway and is examining options for improving the management of water resources across the Basin, in particular the operation of the River Murray system to better meet the challenges of a drier future.



Water for Good Annual Statement 2011

South Australia continues to take measures to maintain a positive balance on the Murray-Darling Basin Salinity Register and to ensure salinity is managed so that water quality remains at levels suitable for human consumption despite the increased flows.

Work is also continuing on the implementation of the Murray Futures program, with a number of key infrastructure projects completed in 2011 including the removal of the Clayton regulator and Narrung bund.

Reform of the water allocation planning process is progressing to improve the timeliness of the completion of water allocation plans, and to improve levels of community engagement.

The *Natural Resources Management (Commercial Forests) Amendment Act 2011* was passed by the South Australian Parliament in 2011. This amendment provides for a forest water licensing and permit system- a first in Australia. A state-wide policy framework, supported by the legislation, is being implemented by including it in relevant regional NRM plans and water allocation plans.

The various **Water for Good** actions to improve the management of the Mount Lofty Ranges Watershed are being progressed in a coordinated fashion. A workshop with key Government and other stakeholders was held in late 2011 to start formulating a vision, targets and key responsibilities for the watershed. The outcomes of this workshop will be utilised to finalise the vision and targets for Government consideration.



PLANNING

Regional Demand and Supply Statements are an essential component of the adaptive management approach supported in **Water for Good**. The statements provide an overview of likely demand and supply to 2050 across the State's eight Natural Resources Management regions and are reviewed annually. Two Statements were completed in 2011, covering the Eyre Peninsula and Northern and Yorke regions.

The Eyre Peninsula Demand and Supply Statement released in April 2011 originally projected that under a worst-case scenario of high population growth and climate change impact, demand for drinking quality water was projected to exceed supply in 2017-18. A review of the data and assumptions for 2011 has resulted in a revised projection for drinking-quality water demand and supply. The new projections suggest that demand is not anticipated to exceed supply until 2023-24 at the earliest.

The Northern and Yorke Demand and Supply Statement, released in December 2011, projects that demand for drinking-quality water is not expected to exceed supply before 2050 under a low population growth scenario. Under the high population growth scenario, demand is not anticipated to exceed supply until 2044-45. The data and assumptions underpinning this statement will be reviewed at the end of 2012, and projections reported in the next Annual Statement.

To continue addressing urban water policy matters, the Department for Water released a Water Sensitive Urban Design (WSUD) Consultation statement in December 2011 as a means of re-engaging local government, developers and other stakeholders in establishing a consistent approach and targets for WSUD across the State. The Statement outlines possible targets for new developments covering aspects such as water conservation, water quality, run-off quantity and integration with other design policies. The targets were based on initial work undertaken by the then-Department of Planning and Local Government through the Institutionalising Water Sensitive Urban Design Project and were reviewed by the Goyder Institute for Water Research.

The Statement also outlines the possible roles that State Government may play to see an uptake of WSUD across the State. Following assessment of feedback from the consultation, the Government will formalise a final policy and implementation arrangements for WSUD.

FOSTERING INNOVATION AND EFFICIENCY

The South Australian Government maintains that good science must underpin its future policy directions in water management. Improving the interface between science and policy has been a key focus in 2011.

The Goyder Institute for Water Research, established in 2010, is a key driver of such linkages, by coordinating research on key policy questions in water management. The Goyder Institute has four primary thematic areas of urban water, water for industry, environmental water and climate change.

During 2011, the Goyder Institute continued a rigorous process of engagement across various Government agencies with policy responsibilities for water management, to clearly define its future research agenda and linkages with strategic directions of Government. Two early outcomes of the Goyder Institute's work have been a scientific review of the Guide to the Proposed Basin Plan which was released in 2010, and the development of WSUD targets as the basis for the State's policy statement.

South Australia continues to engage in other related research activities, including the Cities as Water Supply Catchments initiative. This initiative will be incorporated into the new Cooperative Research Centre (CRC) for Water Sensitive Cities announced by the Commonwealth Government in early 2012. Participation by South Australia in this CRC will further strengthen the State's policy response to water management issues and provide an opportunity to develop linkages between the CRC and the Goyder Institute.

The Department for Water also continues to build strong linkages with the National Centre for Groundwater Research and Training and provided logistical support with the establishment of the Super Science site at McLaren Vale. A Groundwater Aboriginal Scholarship initiative was also jointly developed and the Department for Water has taken on two cadets under this initiative.

LEGISLATIVE AND REGULATORY CHANGE

The Water Industry Bill was introduced in the South Australian Parliament in July 2011 and passed the Parliament on 5 April 2012.

The legislation will provide a modern legislative framework for the water and wastewater service industries in the State. It repeals the *Waterworks Act 1932*, *Water Conservation Act 1936* and the *Sewerage Act 1929* and complements other existing water, environmental and public health legislation.

The Bill will provide a legislative basis for an open, transparent and collaborative approach to water demand and supply planning, providing for:

- an assessment of South Australia's water resources
- an assessment of current and future demand for water, including for the environment
- policies, plans and strategies to ensure the State's water supplies are secure, reliable and sustainable.

It will also establish independent economic regulation of the water and wastewater industry, with the Essential Services Commission of South Australia (ESCOSA) to serve as independent regulator. Among other things, ESCOSA will be responsible for setting SA Water's prices from 1 July 2013.

In addition to this:

- Water industry entities will be afforded new powers to access land and protect infrastructure (powers traditionally enjoyed only to SA Water).
- An independent technical regulator will be established for the plumbing industry.
- A water industry ombudsman will be established
- Concession arrangements will be retained.
- A proposal for a third-party access regime will be brought before the Parliament.

To complement these arrangements, the Government has also committed to a review of pricing structures, which will be undertaken by ESCOSA and inform its second price determination for SA Water.

PRICING AND MARKET INSTRUMENTS

Alongside community education and water demand management measures, pricing is a critical mechanism in ensuring the efficient use of water and maximising the value of its use for economic, environmental and social benefits.

ESCOSA and the Department of Treasury and Finance have been undertaking significant preparatory work for the introduction of independent economic regulation by ESCOSA in 2012, following the passing of the Water Industry Bill by Parliament.

In May 2011, the Government announced increases to water and sewerage pricing for SA Water customers for the 2011-12 financial year. The increases provide for significant investments made by the Government in securing Adelaide's water supply, including the construction of the Adelaide Desalination Plant. Water prices in South Australia increased on average by 26.3 percent, while sewerage charges increased on average by 5.5 percent for metropolitan customers and 6 percent for regional customers.

Importantly, concessions were also increased and the Government will provide \$22 million over the next four years to concession holders to assist to soften the impact of the new prices.

ASSESSMENT OF SOUTH AUSTRALIA'S WATER SUPPLIES

Water for Good developed demand-supply projections to 2050 based on two scenarios – moderate dry-year and extreme dry-year.

They illustrate the possible water demand and supply levels in any given year, depending on population, climate change, the state of the Mount Lofty Ranges storages, River Murray inflows and the impacts of mitigation measures. Moderate and extreme dry-year scenarios were considered the most useful and sensible for long-term planning for the security of supply in worst-case conditions.

GREATER ADELAIDE 2010-12 SUPPLY AND DEMAND

The year 2010 was Australia's second wettest on record since national rainfall records commenced in 1900 [Bureau of Meteorology (BoM), 2011]. It was also the third wettest year on record for South Australia, and the Murray-Darling Basin had its wettest year on record, ending the record sequence of years with below-average rainfall starting in 2001. This rainfall led to a dramatic recovery in water storages across the Basin (BoM, 2011).

This rainfall, combined with widespread flooding during late 2010 and early 2011, resulted in River Murray inflows being well above the long-term average for most of 2010-2011 (see Figure 1). Inflows to the River Murray system increased 360 percent, from 3,724 gigalitres in 2009-2010 to 17,120 gigalitres in 2010-2011. This volume of 17,120 gigalitres is more than 56 percent greater than the long-term average inflow of 11,000 gigalitres (see Figure 2).

Figure 1: River Murray system inflows (excluding Menindee inflows and Snowy releases)

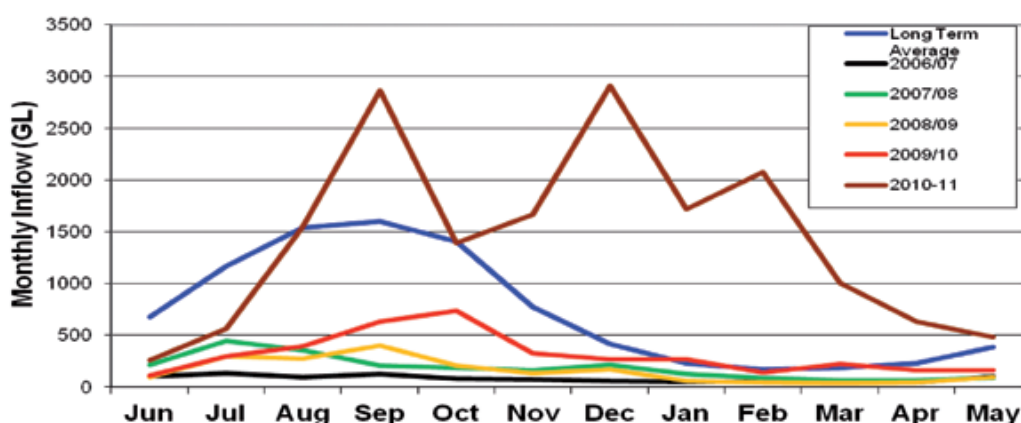
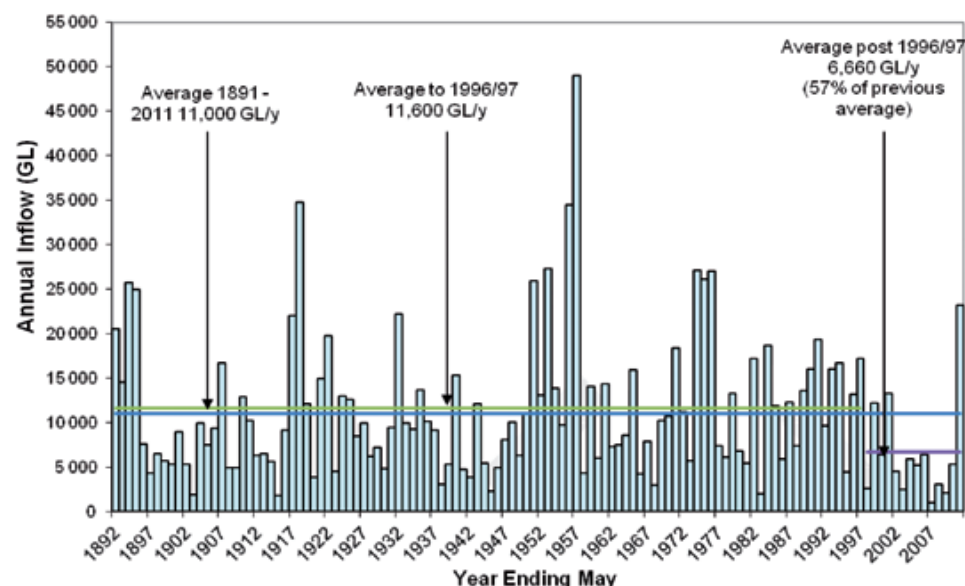
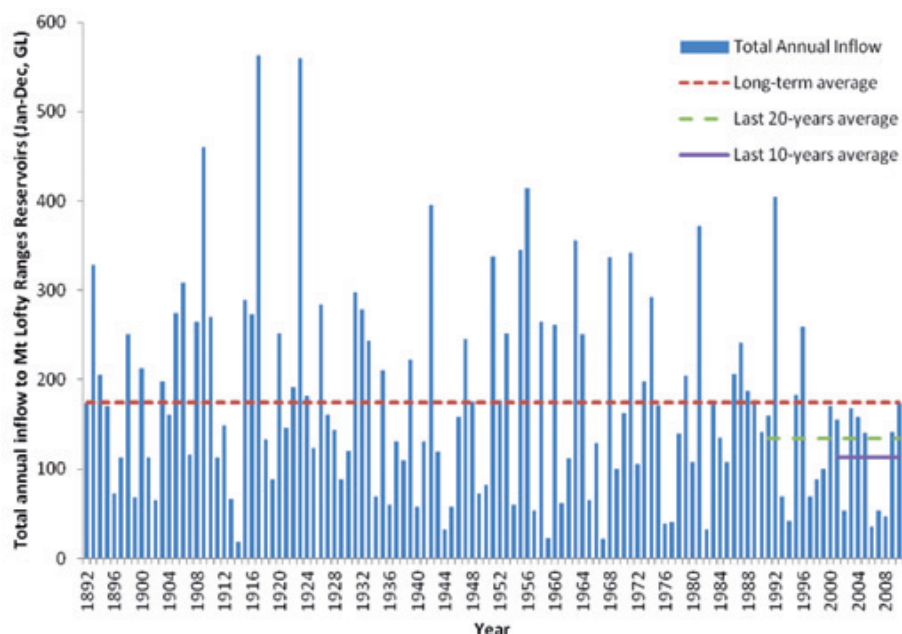


Figure 2: River Murray system inflows 1891-2011 (including inflows to Menindee and excluding Snowy releases)



Inflows to the Mount Lofty Ranges reservoirs also increased by 20 percent, from 141.8 gegalitres in 2009 to 173.0 gegalitres in 2010 (see Figure 3). This volume is greater than the past 10-year and 20-year average inflows, but remains below the long-term average.

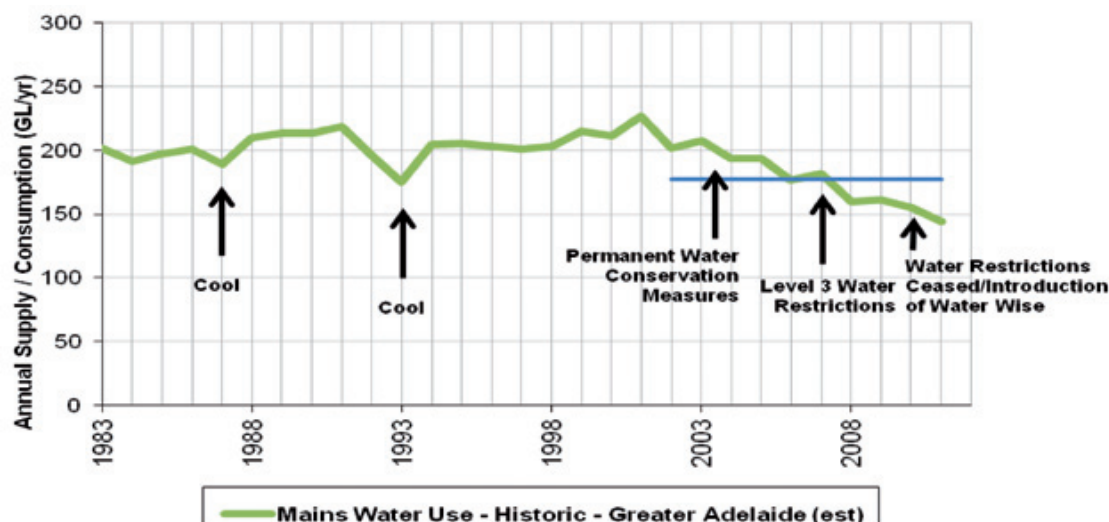
Figure 3: Annual inflow to the Mount Lofty Ranges reservoirs



During 2010-2011, demand for mains water in Greater Adelaide was 144 gegalitres (see Figure 4).

Water restrictions ceased in December 2010 and were replaced with Water Wise Measures. Although water restrictions were removed, mains water consumption continued to decrease, from 155 gegalitres in 2010 to 144 gegalitres in 2011.

Figure 4: Mains water consumption for Greater Adelaide



GREATER ADELAIDE ACTUAL AND PROJECTED AVAILABLE SUPPLY (2010-2011)

Significantly higher rainfall and associated inflows to the Mount Lofty Ranges reservoirs and River Murray resulted in a surplus in available supply for Greater Adelaide in 2010-2011. There was also a surplus of treated wastewater available for reuse.

An 85 gegalitre surplus of mains water was recorded in the Greater Adelaide area, compared with a likely projected moderate and extreme dry-year scenario surplus of 25 gegalitres and 5.8 gegalitres respectively (see Figure 5). If the quantities of drinking quality and non-drinking quality water (i.e. including recycled stormwater and wastewater and other prescribed water resources such as groundwater) were combined, there was a surplus of 198 gegalitres. The projections for moderate and extreme dry-year scenarios are for a surplus of 131 gegalitres and 112 gegalitres respectively.

Figure 5: Greater Adelaide 2010-2011 available supply compared to projections

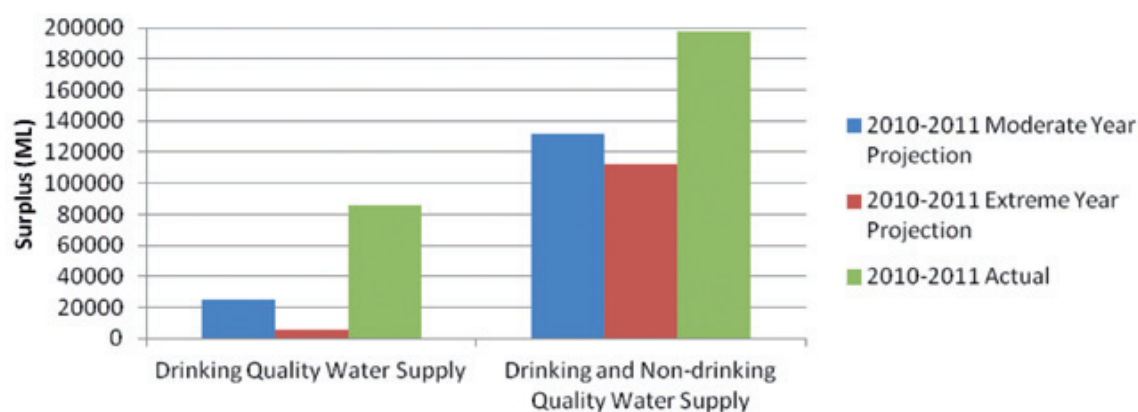
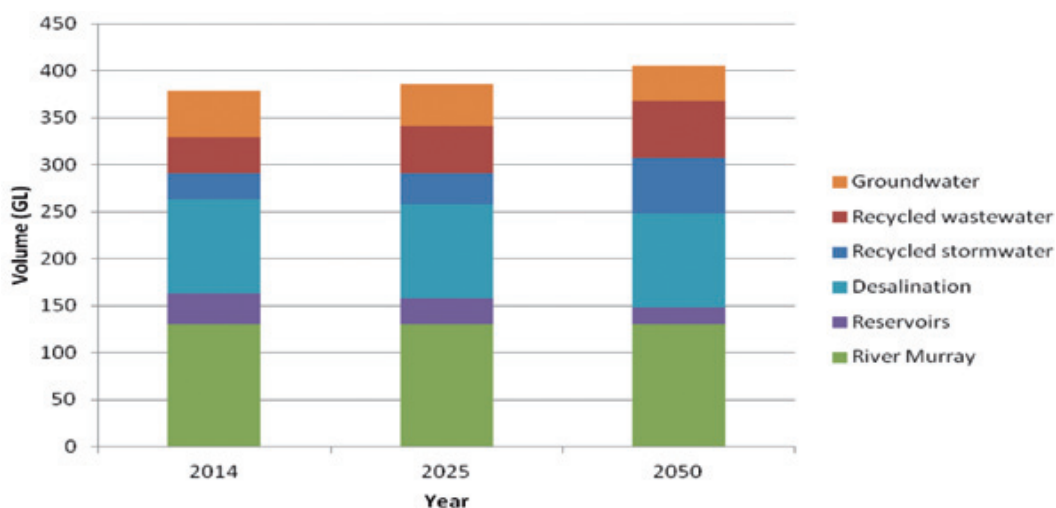


Figure 6 shows the projected total available water supply mix for Greater Adelaide in 2014, 2025 and 2050 in a moderate dry-year scenario. There have been no changes to the projected supply mix since the last **Water for Good** Annual Statement.

As Greater Adelaide's water supply increases to 2050 the new initiatives and water sources detailed elsewhere will help reduce Adelaide's reliance on the River Murray.

Figure 6: Greater Adelaide's projected water supply mix



REVIEW OF ASSUMPTIONS (GREATER ADELAIDE)

During the development of **Water for Good**, a number of factors were identified that could affect the demand-supply balance for Greater Adelaide. To better understand the future water supply and the demands it will face, it is important to recognise the influences. An overview of these drivers is provided below.

SUPPLY DRIVERS

Mount Lofty Ranges reservoirs supply

Inflows to the Mount Lofty Ranges reservoirs increased by 20 percent between 2009 and 2010, and this meant SA Water did not rely heavily on the River Murray for use in Greater Adelaide. While the volume of inflow was greater than the past 10 and 20-year averages, it was still not as high as the long-term average.

River Murray supply

Inflows into the River Murray system increased by 360 percent, from 3,724 gigalitres in 2009-2010 to 17,120 gigalitres in 2010-2011 (see Figures 1 and 2). This volume of 17,120 gigalitres is more than 56 percent greater than the long-term average inflow of 11,000 gigalitres (see Figure 2).

In normal circumstances, South Australia has a minimum entitlement of 1850 gigalitres, of which SA Water has a five-year rolling licence for 650 gigalitres for Metropolitan Adelaide water supply (130 gigalitres/annum on average). In extreme circumstances, special water-sharing arrangements are triggered to ensure South Australia has access to water for critical human needs.

In 2010-2011, SA Water used only 56.4 gigalitres of River Murray water to supply Greater Adelaide (the **Water for Good** extreme dry-year scenario predicts 160 gigalitres), thus freeing up water for the environment. Such a reduction is common in years when natural inflows to the Mount Lofty Ranges reservoirs are high, as the State prefers to draw on the reservoirs before pumping water from the River Murray.

Desalinated water supply

Water for Good projected that 50 gigalitres of desalinated water would be supplied to the Greater Adelaide region by mid 2011, however the increased rainfall over the past two years has ensured the Greater Adelaide region has maintained a surplus of supply for the short-term, without the need for desalinated water.

Alternative supplies

There are nine stormwater harvesting projects in Greater Adelaide that are due for completion in June 2013. The projects are expected to harvest approximately eight gigalitres per annum in total. South Australia will then be ahead of **Water for Good** projections with respect to the volume of recycled stormwater contributing to the total water supply mix.

Climate change

Based on the most current science, the **Water for Good** projections assume that climate change impacts will reduce inflows to the Mount Lofty Ranges reservoirs by 41 percent by 2050 (i.e. a gradual reduction of one percent per annum). While there was no decrease during the reporting period, year-to-year natural variability is not unusual and is expected even in an environment of long-term climate change. Current technical advice from the Department for Water is that the **Water for Good** projections remain valid.

DEMAND DRIVERS

Demand

During the reporting period, demand for mains water in the Greater Adelaide region was reduced from previous years due to increased rainfall and less demand for watering of gardens.

Climate change

Climate change had no influence on demand during the reporting period and current advice from the Department for Water is that the **Water for Good** projections remain valid.

Population growth

Water for Good adopted the population growth projections modeled by the then-Department for Planning and Local Government (DPLG) for the Plan for Greater Adelaide. When extrapolated out to 2050, the DPLG projections suggested a 37 percent increase in total. Subsequent advice from the Department of Planning, Transport and Infrastructure suggests that actual population growth to 2050 is tracking closely to the projected population growth out to 2050 as outlined in **Water for Good**.

Demand management measures

Water for Good projections assume that demand management measures implemented between 2010 and 2050 will equate to 50 gigalitres in savings. These are in addition to those calculated under the Water Proofing Adelaide Strategy and equate to gradual water savings of 1.25 gigalitres per annum. It is difficult to quantify the savings achieved as a result of demand management measures to date, however it is expected that initiatives such as the WaterWise Communities program will have some effect in the longer term.

Water for Good demand projections assume no water restrictions. When water restrictions ceased in December 2010, it was reasonable to expect that the demand would have been higher without them. However, as can be seen in Figure 4, demand for mains water was lower than the previous year when water restrictions were in place. Education initiatives and the community's water wise behaviour have had a significant positive impact.



EYRE PENINSULA DEMAND AND SUPPLY

The Eyre Peninsula Demand and Supply Statement outlines demand-supply projections to 2050 based on four scenarios – high and low population growth and climate change impact on both of these growth scenarios. They are intended to illustrate the possible water demand and supply levels in any given year, depending on a range of assumptions including population, climate change, the available supply from the Southern Basins and Musgrave Basin Prescribed Wells Areas, River Murray supply and the impacts of mitigation measures. When released in April 2011 the Eyre Peninsula Demand and Supply Statement projected that under a worst-case scenario of high population growth and climate change impact, demand for drinking quality water was projected to exceed supply in 2017-2018.

Eyre Peninsula 2010-2011 Demand and Supply

The year 2010 was Australia's second wettest since national rainfall records commenced in 1900 (BoM, 2011). It was also the third wettest year on record for South Australia and the Murray-Darling Basin had its wettest year on record, ending the record sequence of years with below average rainfall starting in 2001 (BoM, 2011). This rainfall led to a dramatic recovery in water storages across the Basin (BoM, 2011).

After several decades of declining groundwater levels in the Southern Basins and Musgrave Prescribed Wells Areas, above-average rainfall in 2009-2010 and continuing good rainfall into 2010-2011 has led to increased recharge and watertable rises of up to 0.4 metres in these Prescribed Wells Areas (DFW, 2011). In some areas, the water levels in 2009-2010 were the highest recorded for the previous ten years.

During 2010-2011, demand for drinking quality water in the Eyre Peninsula region was lower than the best and worst-case scenarios of high and low population growth and climate change impact in the Eyre Peninsula Demand and Supply Statement. Mains water consumption for the Eyre Peninsula region was 16.2 gigalitres compared with projected demands of 19.1 gigalitres in the best-case scenario and 19.2 gigalitres in the worst-case scenario.

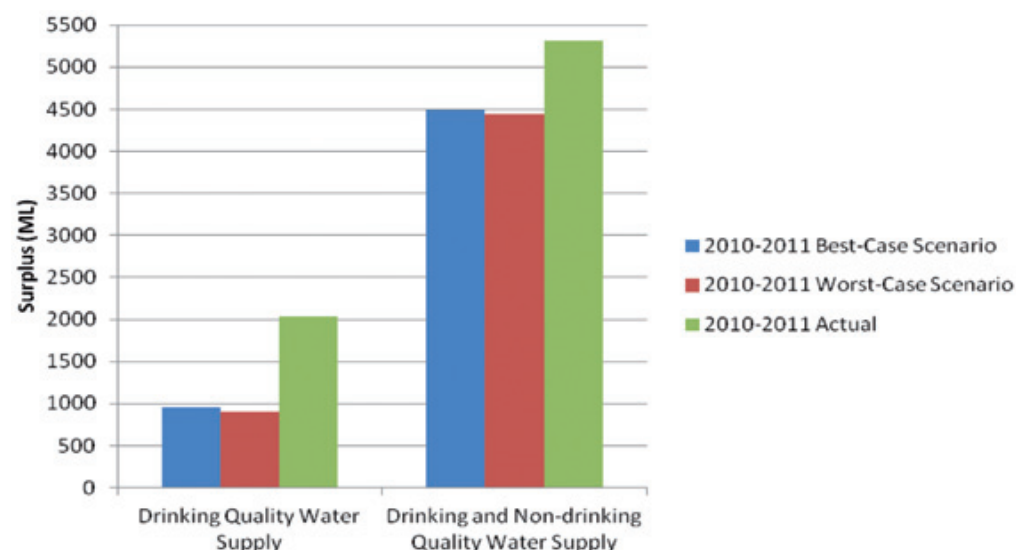
Although water restrictions were removed across the Eyre Peninsula in April 2011, and replaced with Water Wise Measures, the demand-supply projections in the Eyre Peninsula Demand and Supply Statement were developed assuming there were no restrictions. As such, it is not expected that we will see any significant change in demand as a result of lifting the restrictions from what was projected.

Eyre Peninsula 2010-2011 Actual and Projected Available Supply

Significantly lower actual demand from the mains water supply compared to projections in the Eyre Peninsula Demand and Supply Statement resulted in a surplus in available supply for the Eyre Peninsula region over 2010-2011. There was also less water supplied from the River Murray than projected, however this reduction in supply was outweighed by the decrease in demand.

A 2,040 megalitre surplus of drinking quality water was recorded in the Eyre Peninsula region, compared with projected best-case and worst-case scenario surplus of 951 megalitres and 904 megalitres respectively (see Figure 7). If the quantities of drinking quality and non-drinking quality water (i.e. including recycled stormwater and wastewater and other prescribed water resources such as groundwater) were combined, there was a surplus of 5,311 megalitres (see Figure 7). The projections for the best-case and worst-case scenarios were for surplus' of 4,497 megalitres and 4,445 megalitres respectively.

Figure 7: Eyre Peninsula 2010-2011 available supply compared to projections



REVIEW OF ASSUMPTIONS (EYRE PENINSULA)

During development of the Eyre Peninsula Demand and Supply Statement, a number of factors were identified that could affect the demand-supply balance for the Eyre Peninsula region and lead to a surplus or deficit. To better understand the region's future water supply and the demands, it is important to recognise the influences. An overview of these drivers is provided below.

SUPPLY DRIVERS

River Murray supply

In normal circumstances, South Australia has a minimum entitlement of 1850 gigalitres, of which SA Water has a licence for 50 gigalitres per annum for country town water supply purposes. In extreme circumstances, special water-sharing arrangements are triggered to ensure South Australia has access to water for critical human needs.

In 2010-2011, SA Water supplied approximately 9.3 gigalitres of River Murray water to the Eyre Peninsula region (the Eyre Peninsula Demand and Supply Statement assumed a maximum supply capacity of 11.2 gigalitres), the majority of which is used in Whyalla. Demand for water in the region in 2010-2011 did not require that SA Water utilise the full system capacity.

Southern Basins Prescribed Wells Area supply

The above-average rainfall in 2009-2010 and continuing good rainfall into 2010-2011 led to increased recharge into the aquifers of the Southern Basins Prescribed Wells Area and as a result there were water table rises of up to 0.4 metres in some of the aquifers of the Prescribed Wells Area (DFW, 2011). In some areas, the water levels in 2009-2010 were the highest recorded for the previous ten years (DFW, 2011).

The improved recharge to these aquifers allowed an increase to licensed allocations from some of the aquifers in the Southern Basins Prescribed Wells Area, from a total available licensed allocation in 2010-2011 of approximately 8.1 gigalitres to approximately 8.6 gigalitres in 2011-2012.

Musgrave Basin Prescribed Wells Area supply

As with the Southern Basins Prescribed Wells Area, the above average rainfall in 2009-2010 and continuing good rainfall into 2010-2011 led to increased recharge into the aquifers of the Musgrave Basin Prescribed Wells Area. As a result, there were watertable rises of up to 0.4 metres in some of the aquifers of the Prescribed Wells Area (DFW, 2011). In some areas the water levels in 2009-2010 were the highest recorded for the previous ten years (DFW, 2011).

The improved recharge to these aquifers allowed an increase to licensed allocations from some of the aquifers in the Musgrave Basins Prescribed Wells Area, from a total available licensed allocation in 2010-2011 of approximately 1.8 gigalitres to approximately 2.3 gigalitres in 2011-2012.

Alternative supplies

Local government throughout the Eyre Peninsula region have well developed capacities for capturing and reusing stormwater, and reusing treated wastewater for non-drinking purposes. The annual review showed that less stormwater was being captured and reused than had been projected and that less treated wastewater from Community Wastewater Management Schemes was being reused than had been projected. However, this is likely to be due to difficulties in obtaining data rather than actual reductions in stormwater capture and reuse.

Climate change

New information is now available on the impacts of climate change on recharge to the Southern Basins and Musgrave Basin Prescribed Wells Areas and run-off into the Tod Reservoir catchment since the Eyre Peninsula Demand and Supply Statement was developed.

This new science indicates that the impact of climate change on recharge to the Southern Basins and Musgrave Basin Prescribed Wells Areas will not be as severe as first projected. Based on the most current science, climate change impacts on the Southern Basins Prescribed Wells Area will reduce by 24 percent by 2050 (i.e. a gradual reduction of 0.4 percent per annum) and by 26 percent by 2050 to the Musgrave Basin Prescribed Wells Area (i.e. a gradual reduction of 0.43 percent per annum) (DFW, 2012). Run-off into the Tod Reservoir catchment is projected to decrease by 45 percent by 2050 (i.e. a gradual reduction of 0.75 percent per annum).

While there was no decrease during the reporting period, year-to-year natural variability is not unusual and is expected even in an environment of long-term climate change.



Mining supply

As outlined in **Water for Good**, it is State Government policy that securing water for mining activities is the responsibility of the company.

The information regarding supply of water for mining purposes in the demand-supply projections in the Eyre Peninsula Demand and Supply Statement is sourced from the Resources and Energy Sector Infrastructure Council's (RESIC) Infrastructure Demand Study 2009. The annual review has revised the supply of water for mining purposes based on the recently-released RESIC Infrastructure Demand Study 2011.

Based on the updated information, the annual review has shown that there is currently a greater volume of water being supplied for mining purposes, from the 2010-2011 projected volume of approximately 2.1 gigalitres to approximately four gigalitres from private desalinated seawater.

DEMAND DRIVERS

Demand

During the reporting period, demand for drinking quality water in the Eyre Peninsula region was approximately three gigalitres lower than the Eyre Peninsula Demand and Supply Statement projections. Demand for drinking and non-drinking quality water was approximately 1.5 gigalitres lower than the Eyre Peninsula Demand and Supply Statement projections.

Population growth

The Eyre Peninsula Demand and Supply Statement adopted the South Australia's Strategic Plan regional population targets/growth rates for the Eyre and Western South Australian Government region. Advice from the Department of Planning, Transport and Infrastructure (DPTI) suggests that actual population growth was above the low population growth rate used in the projections but lower than the high population growth rate used.

DPTI has advised that the population growth rates to 2050 should be revised to a lower rate, therefore reducing the demand on water resources in the region than originally projected.



Mining demand

As discussed in the supply drivers, it is State Government policy that securing water for mining activities is the responsibility of the company.

The information regarding demand of water for mining purposes in the demand-supply projections in the Eyre Peninsula Demand and Supply Statement is sourced from the RESIC Infrastructure Demand Study 2009 as well as advice from the then-Primary Industries and Resources South Australia. The annual review has revised the demand of water for mining purposes based on the recently-released RESIC Infrastructure Demand Study 2011.

Based on the updated information, the annual review has shown that there is currently a greater volume of demand for water for mining purposes, from the 2010-2011 projected volume of approximately 2.5 gigalitres to the actual volume of approximately four gigalitres. This four gigalitres is provided from private desalinated seawater.

Looking forward, it is anticipated that there will be significant growth in the demand for water for mining purposes. Although there will be increased demand, the majority of this water is expected to be sourced from private seawater desalination plants, with a smaller portion sourced from non-prescribed groundwater resources.

Essentially the growth in demand from the mining sector is not expected to have a detrimental impact on the current mains water supply in the region as mining companies suggest they will supply the water for their operations from desalinated seawater or non-prescribed groundwater resources.

Stock

Based on advice from the then-Primary Industries and Resources South Australia, the Eyre Peninsula Demand and Supply Statement projections assume that stock demand will increase by 1.5 percent on the 2009-2010 level for ten years and then remain constant. Current advice from Primary Industries and Regions South Australia is that the Eyre Peninsula Demand and Supply Statement projections remain valid.



THE YEAR AHEAD AND FUTURE PRIORITIES

Many challenges still remain to ensure a secure, safe and reliable water supply for South Australia and 2012 will be a significant year on many fronts.

The Government has established seven strategic priorities, as part of its forward agenda for next two years. These are:

- Creating a vibrant city
- Maintaining our safe communities and healthy neighborhoods
- An affordable place to live for everyone
- Every chance for every child
- Growing advanced manufacturing
- Realising the benefits of the mining boom for all South Australians
- Clean green food as our competitive edge.

Water management and many of the actions in **Water for Good** will be essential elements of the Government's approach to these strategic priorities, and they will provide an important mechanism for ensuring stronger linkages between water management and other areas of Government policy.

The development of the Blueprint for Urban Water and finalisation of a State policy on WSUD will be critical to creating a vibrant city. Improving stormwater and flood management arrangements will be an essential foundation for maintaining safe communities. Securing the future of the Murray-Darling Basin will be a necessary precursor to developing an internationally competitive and sustainable food sector.

Other important initiatives to be progressed during 2012 include:

- Passing of the Water Industry Bill and the start of independent economic regulation by ESCOSA
- Progressing the establishment of the Finding Long-term Outback Water Solutions initiative to support the mining industry and the sustainability of outback water resources
- Hand-over of the Adelaide Desalination Plant to the Government of South Australia
- Completing the South Australian Arid Lands and Alinytjara Wilurara Demand and Supply Statements
- Constructing stormwater harvesting and re-use projects across Adelaide
- Establishing a vision, and roles and responsibilities for managing the Mount Lofty Ranges Watershed
- Establishing a strategic framework for the management of environmental water
- Assessing rural community water supplies and future needs.

While much has already been achieved, the Government is committed to the ongoing implementation of **Water for Good** and the use of an adaptive management approach to ensure the future security of our water resources.

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