

Transitioning Adelaide to a water sensitive city

Towards an Urban Water Plan for Greater Adelaide

Issues paper | October 2014



Government
of South Australia

Department of Environment,
Water and Natural Resources

Message from the Minister for Water and the River Murray

Water is central to Adelaide's lifestyle, environment and economy. In response to the millennium drought, the Government has worked with local government, industry and the community to diversify our water resources and reform the water and wastewater services sector. As a result, our water supplies are now secure for future decades.

We now have an opportunity to set a new direction for how we manage and use Adelaide's six sources of urban water – water from the catchments in the Mount Lofty Ranges, River Murray water, groundwater, wastewater, stormwater and desalinated seawater – so that we can ensure that these resources support positive economic, social and environmental outcomes for the community.

The Government has committed to the development of an Integrated Urban Water Management Plan for Greater Adelaide to build on the reforms of recent decades and ensure that we adopt an innovative approach to urban water into the future.

Multiple State Government agencies, the local government sector, industry and the broader community play various roles and have an interest in how our urban water resources are managed. It is essential that the Government engage with various stakeholder groups and the community more generally as part of continuing to bring the community's voice into Government decision-making.

This Issues Paper has been prepared to start such an engagement process and to assist with defining the scope and key priorities of the Integrated Urban Water Management Plan for Greater Adelaide. It provides an overview of the drivers for developing such a plan, the current status of our urban water environment, existing management arrangements and possible future directions for urban water.

I encourage you to provide your input to assist with the development of the Plan – one which will establish South Australia's reputation as an international leader in urban water management and ensure that Adelaide is the pre-eminent water sensitive city in Australia.



The Hon Ian Hunter MLC

Minister for Sustainability, Environment and Conservation
Minister for Water and the River Murray

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1. Introduction

How we manage and use water in Adelaide has significant implications for our economy, the environment and the community. In Adelaide, as a result of investments over the last decade, we now have six major sources of water, these being:

- Water from the River Murray;
- Water from catchments in the Mount Lofty Ranges;
- Stormwater;
- Wastewater;
- Groundwater;
- Desalinated seawater.

In addition to these, roof runoff captured by rainwater tanks is a popular supplementary supply for many homes and some businesses.

The city has significantly diversified the water resources available for both drinking and non-drinking purposes over the last two decades, primarily in response to the recent millennium drought, but also in broader recognition of alternative water supplies such as stormwater and wastewater as a valuable resource.

As Adelaide continues to grow and the impacts of climate change are realised, we will face a number of challenges in managing the impact of urbanisation on our water resources. These include:

- Increasing risk of minor and major flood events and decreasing capacity of existing drainage infrastructure;
- Increasing run-off of polluted stormwater into urban watercourses and the coastal environment;
- Increasing pressure on demand for potable water and wastewater infrastructure to service urban growth areas;
- The need to ensure new and maintain existing open green space to mitigate urban heat effects and provide for more liveable urban environments;
- Reducing levels of annual rainfall as a result of climate change, decreasing overall water availability.

At the same time, we may also be able to utilise our urban water resources to more effectively support healthy communities, provide for vibrant and more liveable urban environments and support economic growth and new employment opportunities.



Traditionally, urban water resources and the various issues associated with them have been managed in isolation and across a variety of State and local government organisations. This has resulted in a broad distribution of roles and responsibilities across various parties, making opportunities for the more effective use of water and efficient approaches to water management difficult to realise.

Over recent years, the community, industry, research organisations, local government and the State Government (including through SA Water) have all played significant roles in adapting to unprecedented drought conditions and ensuring that our water supplies are now secure and sufficient to meet demand for the next few decades.

There is now an opportunity to build on our existing water management foundations and establish a more integrated approach to urban water management across Greater Adelaide.

The Government is committed to furthering the urban water management reforms implemented through our water security plan, Water for Good (www.environment.sa.gov.au/about-us/our-plans), by developing an innovative integrated urban water management plan for Greater Adelaide. Such a plan will set a new direction and framework for urban water management and ensure that future challenges are not only addressed, but turned into positive outcomes for the community.

South Australia is already a well-recognised leader in many aspects of urban water, including stormwater harvesting and re-use, wastewater re-use, the protection of public health, the adoption of water efficiency measures in domestic residences and commercial and industrial operations, in water research and science and the development of new water technologies and businesses.

The delivery of an integrated urban water management plan for Greater Adelaide will place the State at the forefront of contemporary urban water approaches and establish Adelaide as the preeminent water sensitive city in Australia.

Many organisations and the community at large play a role in various aspects of urban water, whether these be State and local government agencies, the private sector, not-for-profit organisations or research institutions. It is therefore critical that a new plan for urban water in Adelaide is developed through strong engagement with these groups.

This Issues Paper has been prepared to initiate discussion on the scope and key elements of such a plan and to provide a platform for the community and key organisations to have a say in Adelaide's water future.

Interested parties are invited to participate in the development of the plan, initially through providing feedback on the key elements of this Issues Paper. Further details on the approach for developing the plan and how you can get involved are outlined in Section 5.



2. The urban water environment in Greater Adelaide

2.1 Water Resources

Any future directions for urban water management in Greater Adelaide need to be considered in the context of and with an understanding of the current environment and existing management arrangements. The approach to water management in Adelaide has evolved over many years and in response to a range of issues, and our current water environment is necessarily complex in nature.

Adelaide's six sources of urban water are all managed and used for different purposes, and each pose a number of future challenges and opportunities.

Significant interactions occur between these water resources, which necessarily influence how we need to think about and manage them into the future. For example, our ability to store harvested stormwater through managed aquifer recharge for use in summer is heavily influenced by how we manage our groundwater system, while the use of desalinated seawater is driven by the availability and cost of supplying drinking water from the Mount Lofty Ranges and the River Murray.

2.1.1 Surface Water in the Mount Lofty Ranges

Surface water in the Mount Lofty Ranges is one of three raw drinking water sources for Adelaide. This water is captured and stored in ten water supply reservoirs fed by five major catchments across the region. Before being supplied to water users, the water is treated to ensure it is safe for drinking. Natural inflows to these reservoirs are also regularly supplemented by water pumped from the River Murray.

The combined storage capacity of these water supply reservoirs is almost 200 gigalitres, which is approximately Adelaide's annual drinking water demand. However, the amount of water these reservoirs capture is heavily dependent on annual rainfalls and, as a result, some only occasionally reach full storage.

The availability of water from the Mount Lofty Ranges stored in our reservoirs sets a baseline for our drinking water supplies and dictates how much supplementary water is required from the River Murray and the Adelaide Desalination Plant.

Certain reservoirs also provide some flood mitigation for minor events and contribute to other flood management measures in the South Para, Gawler and Torrens catchments.

Surface water is also captured across a large number of private and commercial dams in the Mount Lofty Ranges to provide stock and domestic supplies, as well as to support irrigated agriculture.

2.1.2 River Murray Water

Not only is the River Murray an iconic river system for South Australians, it is also a key source of drinking water supplies for Adelaide and other regional locations. The River also supports a significant irrigated agriculture sector, as well as being a key tourism destination and the location of internationally significant environmental assets.

During the recent millennium drought, it became apparent that we cannot continue to rely on the River Murray to the same extent that we have in the past.



On average, South Australia sources around 40 per cent of its drinking water from the River Murray, depending on climatic conditions, with a large proportion of this used across Adelaide.

The adoption of the Murray-Darling Basin Plan in 2012 was a historic milestone for the River Murray and the communities and industries that rely on it. It provides for the integrated management of the Basin's water resources and will see the return of 3,200 gigalitres of water across the Basin to ensure its future sustainability.

The implementation of the Murray-Darling Basin Plan will deliver many benefits, including ensuring a sustainable future supply of drinking water for Adelaide and other regional communities, keeping the Murray Mouth open, flushing salt from the system and providing environmental flows to precious River Murray wetlands and floodplains. It will also support a sustainable irrigation sector and local communities.

The South Australian Government has developed a detailed strategy to guide the state's implementation of the Basin Plan and related programs between 2013 and 2019

(www.environment.sa.gov.au/managing-natural-resources/river-murray/murray-darling-basin-plan).

2.1.3 Desalinated seawater

Desalinated seawater is a recent addition to Adelaide's urban water portfolio, with significant investment made in the Adelaide Desalination Plant to provide a non-climate dependent source of drinking water in times of drought.

The Adelaide Desalination Plant has the capacity to provide up to 100 gigalitres of water per annum, which is equivalent to more than half the volume of potable water now used in Adelaide.

2.1.4 Stormwater

Stormwater is surface water that is generated by rainfall runoff from urban centres, and which flows along street drains and urban watercourses. As the Adelaide Plains and parts of the Mount Lofty Ranges have urbanised since settlement, we have replaced many pervious surfaces with hard impervious ones, changing natural hydrological patterns. This increases the proportion of runoff during periods of rain.

As water flows across hard surfaces it picks up various pollutants which find their way into urban streams and ultimately Gulf St Vincent, causing a range of environmental impacts such as poor nearshore water quality and prevention of inshore growth of seagrasses. High rates of stormwater runoff, compared to previously natural flows from undeveloped areas, increase flooding risks and can also result in erosion and loss of environmental and amenity values of urban rivers and streams, such as the River Torrens.

Until approximately 20 years ago, stormwater was often seen as a nuisance, something to be drained as quickly as possible into the Gulf to provide adequate flood protection across Adelaide. Stormwater now is seen as a resource that can be harvested and used for appropriate purposes such as watering parks and gardens, reducing demands on potable water supplies.

Adelaide's stormwater harvesting capacity has grown from about one gigalitre a little more than a decade ago, to more than 20 gigalitres today. Large stormwater harvesting schemes exist north, west and south of Adelaide, many as a result of the initiative of councils and also joint investments by local government, the State Government and the Australian Government.

Additional stormwater harvesting and reuse schemes are also being developed in eastern Adelaide and near Gawler.



2.1.5 Wastewater

Wastewater from metropolitan Adelaide's households and commercial and industrial premises is treated at wastewater plants located at Bolivar, Glenelg, Christies Beach and Aldinga.

In addition, a number of smaller State or local council owned wastewater treatment systems service areas of the Mount Lofty Ranges. In areas where such public services are not available, on-site wastewater treatment and disposal systems are used.

Treated wastewater from wastewater plants is either recycled for purposes such as irrigation of parks and gardens and for agriculture, or otherwise discharged into watercourses or to Gulf St Vincent.

The annual reuse of treated wastewater in Adelaide has grown from about five per cent in the late 1990s to around 30 per cent currently, which is the highest per capita level of use of all Australian capitals. In summer, when the demands for treated wastewater are highest, the level of reuse from some plants can approach 100 per cent.

Recycling wastewater helps to reduce demand for drinking water, or other sources such as groundwater.

Reuse for irrigation provides a commercial return for what is otherwise a wasted resource and also allows nutrients in treated wastewater, such as nitrogen and phosphorus, to be recycled rather than discharged to watercourses or to the Gulf.

2.1.6 Groundwater

In parts of the Mount Lofty Ranges and Adelaide Plains, there are significant storages of groundwater in a number of different aquifer formations. In many of these areas groundwater is used (in some places extensively) for private stock and domestic demands, irrigated agriculture and other commercial and industrial applications.

The quality of groundwater varies across the region from relatively fresh in some areas to highly saline in others. Groundwater use is heaviest where the water quality (salinity) is relatively low and is suitable for purposes such as irrigated agriculture.

Some groundwater aquifers are also being used to store harvested stormwater through a process known as managed aquifer recharge (MAR), for subsequent extraction for some non-drinking uses.

2.2 Management arrangements

South Australia is a well-recognised leader in many areas of urban water management and it is important that we continue to build on such strengths in any future approach to urban water in Adelaide.

Management arrangements for urban water in Adelaide are primarily provided for through a range of key legislation, which include:

- *Natural Resources Management Act 2004;*
- *Water Industry Act 2012;*
- *Public Health Act 2011;*
- *Safe Drinking Water Act 2011;*
- *Development Act 1993;*
- *Environment Protection Act 1993;*
- *Local Government Act 1999* (including Schedule 1A).



A range of supporting policy frameworks have been established (or are being developed) under such legislation to ensure that water management issues are adequately managed. These include:

- Water allocation plans for the Western and Eastern Mount Lofty Ranges Prescribed Water Resource Areas and the Central Adelaide Plains Prescribed Wells Area, which provide for the sustainable allocation of water to the environment and consumptive uses and provide secure water property and access rights to licence holders.
- The *Adelaide Coastal Water Quality Improvement Plan*, specifying targets and actions to improve the quality of water flowing into Gulf St Vincent so as to minimise future environmental degradation.
- Independent economic regulation of the water and wastewater services industries by the Essential Services Commission of South Australia, to protect consumers and ensure cost efficient delivery of services.
- The *30 Year Plan for Greater Adelaide*, which sets out the strategic policy directions for the development of the city, integrating some aspects of the water cycle into the urban development and planning system and local development plans.
- Regional Natural Resources Management Plans for the Adelaide and Mount Lofty and South Australian Murray Darling Basin regions, specifying various arrangements for water regulation and key initiatives to sustainably manage various urban water resources.
- *Strategic Infrastructure Plan for South Australia*, which maps out key infrastructure priorities over future years, including for water and wastewater.
- Stormwater Management Plans, developed under the guidance of the Stormwater Management Authority to provide for catchment wide stormwater approaches.

A brief overview of current management arrangements pertaining to key issues associated with urban water in Adelaide follows.

2.2.1 Drinking water security

SA Water, which is owned by the State Government, is the primary commercial supplier of potable water for Adelaide. Such water is sourced from surface water catchments in the Mount Lofty Ranges, the River Murray and more recently the Adelaide Desalination Plant. The choice of how much water comes from each of these sources is determined by a range of factors, including climatic conditions, namely rainfall and its impact on supply, and the cost of supplying from each source.

SA Water's use of these resources and any flow-on cost and price impacts are set on a forward three or four year timeframe through the independent economic regulation arrangements established under the *Water Industry Act 2012*, as overseen by the Essential Services Commission of South Australia. The current period of regulation is from 2013/14 to 2015/16.

In normal rainfall years, the primary sources of supply are from the Mount Lofty Ranges and the River Murray. The Adelaide Desalination Plant began producing drinking water in October 2011 under commissioning arrangements and since this time over 100 gigalitres of drinking water have been produced. Its future use will be determined based on climatic conditions, which impact the availability of water from other sources, with the aim of maximising the overall economic benefit to the state.

Some private providers also deliver water in smaller communities in the foothills and Mount Lofty Ranges, generally supplied by water extracted from a private bore and distributed by the landowner.

2.2.2 Flooding

The primary driver for the management of stormwater is to mitigate flooding risks to metropolitan and Adelaide Hills communities. Local government has primary responsibility for mitigating flood risk and a number of councils have prepared or are currently developing stormwater management plans to address flooding issues.

The State Government also has responsibility for some major pieces of drainage infrastructure in the metropolitan area as a result of drainage legislation introduced in the 1930s to 1960s (sometimes following widespread flooding across several council areas). State Government-managed drainage assets include parts of the lower Torrens and Sturt River systems.

The Stormwater Management Authority has been jointly established by State and local government to facilitate catchment stormwater planning including from a flood management perspective and the construction of required infrastructure. The Authority is an independent statutory authority established under Schedule 1A of the *Local Government Act 1999*.

The Authority oversees and approves stormwater management plans developed by councils in accordance with specific guidelines and provides financial support through the Stormwater Management Fund, to which the State Government is providing \$4 million per annum (indexed) for a thirty year period until 2037. The current annual allocation to the Fund is approximately \$4.9 million.

2.2.3 Stormwater and wastewater recycling

Stormwater and wastewater recycling schemes are usually managed and operated by the owners of the infrastructure.

Local councils are the owners and operators of many existing stormwater reuse schemes. However, there are also a number of private schemes, including some operated by metropolitan golf clubs.

A number of councils have also entered into arrangements to supply harvested stormwater to others, such as public and private schools and commercial businesses.

Wastewater reuse is typically the outcome of arrangements between public suppliers, such as SA Water, and in some cases local councils, with private entities such as irrigators or major developers.

Stormwater and wastewater recycling schemes are subject to various regulatory requirements which are determined by the nature of each operation. Such schemes often involve arrangements for managing environmental and public health matters, ensuring alignment with the planning and development system and for the protection of customers.

2.2.4 Public health

A paramount consideration in the management of Adelaide's urban water resources is the protection of public health.

The management of Greater Adelaide's drinking water is challenging, given the nature of the catchments and the potential impact of urban development, agriculture and rural industries. Drinking water suppliers are subject to a range of regulations to safeguard public health.

SA Health ensures that drinking water is delivered to consumers according to the requirements of the *Safe Drinking Water Act 2011* and the *Safe Drinking Water Regulations 2012*.

The *Safe Drinking Water Act 2011* applies to all drinking water providers who supply water to the public, including SA Water, operators of independent town supplies, providers of drinking water in hospitals, child care and aged care centres, food and accommodation premises, supplies in rural and remote communities, and water carters.

SA Water, as the major supplier of public drinking water supplies, regularly monitors the quality of water using a 'catchment to tap' approach.

2.2.5 Water quality

The Environment Protection Authority has primary responsibility for the implementation of policies and regulations to ensure that water quality is managed so as to protect the natural environment. The quality of water which is discharged through stormwater drainage networks, wastewater treatment plants and industrial and commercial operations into receiving waters is a key driver of aquatic ecosystem health.

The State's primary mechanisms for addressing such matters include the Environment Protection (Water Quality) Policy, the Adelaide Coastal Water Quality Improvement Plan and other mechanisms under the *Environment Protection Act 1993*.

These arrangements place responsibility on all parties to ensure that their actions do not cause environmental harm, or the inappropriate discharge to the State's water resources.

In addition, the Adelaide and Mount Lofty Ranges and South Australian Murray-Darling Basin Natural Resources Management Boards also implement a range of programs to address water quality issues, such as investments in urban wetlands, and gross pollutant traps.

In 2013 the Government released a state wide policy for water sensitive urban design, including targets addressing water quality. Implementation of the policy is underway.

Water allocation plans for the water resources of the Eastern and Western Mount Lofty Ranges adopted in 2013 include provisions to ensure that the environment receives sufficient water to remain healthy.





3. Why an integrated urban water management plan for Greater Adelaide?

The Government sees significant opportunity from the development of an integrated urban water management plan for Greater Adelaide to ensure that we use and manage our urban water resources in a way that delivers maximum benefit to the community.

The diversification of our water resources over recent decades, important reforms to increase competition in the water and wastewater sectors and the value we place on water, have all contributed to our water supplies being secure for future decades. However, there are a range of challenges that Adelaide continues to face in dealing with our diverse urban water resources.

The availability of water for our economy and lifestyle is only part of the story. How we make the most productive use of our water resources will significantly affect Adelaide's productivity and liveability. As Adelaide continues to grow, it is critical that we seek to ensure that our urban environments are designed to work in harmony with the urban water cycle.

Current management arrangements for our urban water resources have evolved over the last 150 years, with roles and responsibilities for different resources and issues being spread across different Government agencies, the local government sector, industry and other not-for-profit organisations. These

arrangements and respective roles and responsibilities have reflected the priorities of their time (for example water supply, sewerage and flood protection), but can now be reviewed to better reflect the dynamic nature of urban water in Adelaide.

A long term direction for urban water in Adelaide, which is progressed with and supported by the community, will help to identify major opportunities to use these water resources to improve the city's liveability, create healthy and productive urban environments, drive new industry development opportunities and attract and retain skilled labour.

In developing our approach we must think collectively about the linkages between the various resources and how best we can maximise real benefits from these resources for the community, industry and the environment.

Various stakeholder groups and the community continue to express an interest in our future water directions and, following on from the recent millennium drought, we must continue to ensure that all of those with a responsibility and interest in urban water are appropriately engaged and informed.



By developing an integrated urban water management plan for Greater Adelaide, South Australia will place itself at the forefront of urban water arrangements on a national and international scale. In doing so we have the opportunity to set a long term direction for addressing issues and capturing opportunities such as:

- Ensuring the ongoing security of supply of drinking water, supplied as efficiently as possible;
- Minimising flood risk and utilising harvested stormwater for fit for purpose applications where this is cost effective;
- Ensuring the supply of appropriate quality water for economic development purposes, including agricultural, commercial and industrial uses;
- Leveraging new investment from our capabilities in water management and through the provision of water at the right time, in the right place and at the right cost;
- Using our water resources to cost effectively provide green space and public amenity across Adelaide to deliver important health and productivity improvements;
- Ensuring that water management is integral to our approach to climate change adaptation;
- Aligning water planning and future investment in infrastructure with the land use planning system to ensure the availability of appropriate service levels across Adelaide at the least possible cost;

- Recognising and promoting opportunities to ensure future developments are 'water sensitive';
- Leveraging our expertise in urban water management and our research capabilities to commercialise and develop new international markets for related goods and services.

The Government believes that a new plan for urban water, building on our achievements, is required so that we can:

- Establish a long term vision for urban water and ensure alignment and a collaborative approach across all sectors of the community;
- Improve the community's capacity to engage more effectively in urban water management initiatives;
- Make best use of the resources available across the State and local government sectors for urban water and focus these on critical priorities;
- Continue to improve government efficiency in its approach to urban water management;
- Clarify future roles and responsibilities between government, the private sector and the community;
- Ensure that we can adapt to emerging issues and a changing climate.



4. What should the plan focus on?

In order to provide a foundation for a plan that can be embraced by the urban water sector and broader community, it is important that we first seek to set an appropriate scope for the plan.

As a starting point, the Government proposes that the plan focuses on concrete initiatives and future directions in the following areas.

It is important that the directions build on recent achievements and represent cost-effective approaches to future urban water management.

Designing Adelaide to conserve and make the best use of water:

- How can we better use water that exists locally?
- How can we further and sensibly increase the efficient use of water by households, the commercial and industrial sector and governments?
- How do we ensure that green space across Adelaide is appropriately provided for and kept green during periods of drought?
- What new and productive water uses could be encouraged for each or a combination of our six sources of urban water?

- Where are the future demands for water likely to be greatest across Adelaide and can these demands be cost effectively supplied from alternative sources, such as treated stormwater, wastewater and/or saline groundwater?

Improving the quality of urban run-off and minimising environmental impacts on Gulf St Vincent:

- Where do most pollutants (i.e. sediments and nutrients) come from and how can these impacts be most cost effectively managed?
- Where do we need to target water sensitive urban design and are there opportunities for more localised stormwater harvesting?
- Can we use more wastewater for economic or public benefit purposes to reduce discharges into the Gulf?
- Can we increase both the re-use of wastewater and stormwater through combining such schemes?

Optimising the use, management and investment in water infrastructure:

- How do we improve upfront planning for and the delivery of water and wastewater infrastructure for Adelaide's growth areas?
- Can we use our existing infrastructure for other purposes that may deliver a public or environmental benefit?



- How can we more cost effectively invest in infrastructure improvements and maintenance?
- Can we utilise more decentralised approaches to urban water management, such as water sensitive urban design and localised wastewater treatment, to minimise the need for future large scale infrastructure investments?

Improving flood management:

- How can we ensure that flood mitigation measures are built into new development areas?
- How do we ensure that funding is available to provide for future drainage infrastructure?
- Can the localised use of water sensitive urban design provide cost effective flood relief across Adelaide?
- How do we increase the community's preparedness for flood events as a result of a changing climate?

Improving the community's understanding and behaviour in regard to urban water:

- What roles would the community and industry like to play in regard to urban water management?
- How can we continue to keep the community engaged and interested in urban water issues?
- How can government more effectively engage the community in urban water decision making processes?

Leveraging new economic and investment opportunities from our approach to urban water:

- How can our investments in urban water research and development be commercialised into new products and services?
- Can our expertise in urban water management be used to open new export markets for related goods and services?
- How can we use alternative water resources more effectively to promote peri-urban agriculture and clean and green food and wine production?
- Can urban water be used more effectively to provide for a green and vibrant Adelaide that can attract and retain skilled labour?

Ensuring that water management arrangements take account of other related issues of importance to the community:

- How can we use water to support and sustain trees, parks and other green infrastructure that contributes to our amenity, health and well-being?
- How can we use water to mitigate the effects of rising temperatures associated with climate change and development effects?
- How can we use water to create vibrant places for work and recreation?

5. Developing the plan

The Government is keen to ensure that a new integrated urban water management plan for Greater Adelaide is developed through the active involvement of the community, local government, industry and the not-for-profit sector.

This Issues Paper is the first step in an open discussion about how best we manage and use our urban water resources into the future.

The outcomes of consultation on this issues paper will be used as the basis for a draft plan for further discussion with South Australians.

There has been a range of work undertaken over recent years which will also provide a strong foundation for considering a new approach to urban water in Adelaide. This includes scientific research conducted by the Goyder Institute for Water Research and a range of position papers prepared by industry associations and the Local Government Association of South Australia.

A range of opportunities will be provided for engaging interested parties in the development of the integrated urban water management plan for Greater Adelaide.

These will include:

- Written comment on this Issues Paper and various drafts of the plan;
- Workshops on key issues;
- Surveys and related investigations;
- Web based participation and feedback mechanisms.

As a starting point, the Government is keen to receive initial feedback on this Issues Paper and the key questions outlined in Section 4. This will set the foundation for the ongoing preparation of the plan and future approaches to consultation.

You are encouraged to put forward your thoughts on Adelaide's future approach to urban water by providing your comments on this Issues Paper and the various questions contained within via email to dewnr.iuwmpga@sa.gov.au, or to GPO Box 1047, Adelaide, SA, 5001 by Friday 19 December 2014.

Other opportunities to be involved will be communicated publicly during the course of developing the plan over the remainder of 2014 and in 2015.





6. Glossary

Algal blooms – an unusually large number of algae, per unit of water, which may impair the aesthetics of a water resource, impact on its quality for use, and/or impact on the water environment

Aquifer – underground water-bearing permeable rock, gravel, sand, or silt that holds water

Catchment – an area of land that drains rainfall runoff (e.g. into streams, rivers, wetlands, or via infiltration into soils and groundwater)

Gigalitre – one billion litres (approximately the amount of water in 500 olympic size swimming pools)

Integrated Urban Water Management Plan - a plan for managing the water resources of a region such as freshwater, wastewater, stormwater and groundwater in a purposeful and coordinated way

Managed Aquifer Recharge - the intentional recharge of water to aquifers for subsequent recovery or environmental benefit

Potable water – an alternative term for drinking water

Recycled water – wastewater or water from stormwater systems that is treated to a standard appropriate for its intended use

Runoff – water that runs off land surfaces as a result of rain

Seagrass – a type of flowering sea plant with roots that often form ‘meadows’

Stormwater – rainwater that runs off all urban surfaces such as roofs, pavements, car parks, roads, gardens and vegetated open space

Wastewater – water collected from internal household and other building drains

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