Improving Stormwater Management Arrangements in South Australia

A draft position paper for local government

A confidential report prepared for the Local Government Association of South Australia
Thursday 14 November 2019

CONFIDENTIAL DRAFT FOR COMMENT
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Abbreviations

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<th>DEW</th>
<th>Department of Environment and Water</th>
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<tr>
<td>DPTI</td>
<td>Department of Planning, Transport and Infrastructure</td>
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<td>EPA</td>
<td>Environment Protection Authority</td>
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<td>LGA</td>
<td>Local Government Association of South Australia</td>
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<td>SMA</td>
<td>Stormwater Management Authority</td>
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<td>SMF</td>
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<td>SMP</td>
<td>Stormwater Management Plan</td>
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<td>IWCM</td>
<td>Integrated Water Cycle Management</td>
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<td>WSUD</td>
<td>Water Sensitive Urban Design</td>
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Executive Summary

Improved management of stormwater has the potential to offer significant environmental, economic and social benefits to South Australia. However, the ability to capitalise on these opportunities is limited by the existing complex governance and institutional arrangements, limited funding and a lack of strategic direction.

Increased rainfall variability and intensity arising from climate change, pressures from infill and greenfield development, as well as more general urban growth are all increasing the risks posed by stormwater runoff and highlighting gaps and weaknesses in the existing approach to stormwater management in South Australia. For local government, these pressures are presenting themselves in the immediate term as increased flood risk, and as a consequence, increasing costs for the maintenance, operations, upgrade and renewal of stormwater infrastructure. These escalating costs are unsustainable and are having to be borne by ratepayers.

Local government has investigated the challenge of management over the last two years. In 2018, the Local Government Association (LGA) worked with councils to identify the most pressing challenges from the current management arrangements and opportunities for improvement. Acknowledging that the current system is failing, local government is now looking at what can be done to drive real and effective change.

This report acknowledges that there have been improvements in on-ground approaches to stormwater management in South Australia over recent years and that current planning reforms should support the planning system to better accommodate these new management approaches (i.e. water sensitive urban design). This paper does not address this aspect of stormwater management, but instead focuses on the broader governance, institutional, policy and funding arrangements, which have been identified as hindering the realisation of stormwater outcomes across South Australia (LGA 2018b).

The current legislative and institutional arrangements that relate to stormwater are shared across multiple pieces of legislation and responsible entities. As a consequence of this fragmented approach there is a lack of collective vision, integration and coordination. This is limiting the ability to make system-wide, long-term planning decisions and in particular, the ability to appropriately price and fund the operations, maintenance and required upgrades of stormwater infrastructure and services.

Outlined below is a summary of the key findings in this report.

Key Findings

- The wide array of legislative responsibilities shared across organisations is contributing to a lack of clear leadership, coordination and cohesive approach to stormwater management across South Australia.

- There is a growing trend interstate and internationally, of centralised bodies (such as a water utility) having management and oversight of major stormwater infrastructure, supported by a regulated funding source (such as drainage charges).
• The Productivity Commission Inquiry into urban water management recommendations reflect the challenges identified in South Australia and point to opportunities for further reform.

• The current disaggregated stormwater management arrangements, lack of regulation and appropriate funding is exacerbating the risks of flooding.

• Current funding available to local government is not adequate to meet the growing costs for stormwater services across South Australia.

• A lack of regulation and disaggregated responsibilities is resulting in inconsistent standards and levels of service.

• Increased rainfall variability and intensity arising from climate change is increasing the risks posed by stormwater runoff and highlighting gaps and weaknesses in the existing approach to stormwater management in South Australia.

• A more integrated and better regulated approach to water management, where stormwater is considered as part of the broader urban water cycle management, is required to realise the potential benefits from stormwater.

Framework for improving stormwater management

Improving stormwater management will be a difficult task as it will require the will and agreement of many stakeholders and a concerted, long-term effort. There is not one solution that will address all of the challenges. Therefore, there needs to be agreement on what success looks like. To assist this process, we have developed a framework and a set of principles. This framework is intended to provide a guide to what good stormwater management (from a legislative, policy and institutional perspective) should include. Any changes to legislation, policies or other arrangements should refer back to these principles. The framework can be used to assess the effectiveness of current arrangements, guide any proposed changes and provide a high-level narrative for future reform.

Figure 1: Framework for decision making – guiding principles for good stormwater management
The framework for good stormwater management includes seven guiding principles:

1. **Leadership** - Good leadership is required from local and state government. Leadership requires a shared vision and strategy, and clarity of roles and responsibilities.

2. **Integration** - Stormwater should be considered as part of an integrated water cycle management framework, alongside water supply, sewerage and waterway health in order to maximise social, environmental and economic benefits.

3. **Understanding the costs and benefits** - Investment and management decisions should be based on an informed understanding of the long-term direct and indirect benefits and costs (impacts).

4. **Risk-based decisions** - Decisions should be prioritised based on risks to people, property and the environment.

5. **Levels of service** - Management of stormwater should be based on place-based agreed levels of service that is reflective of community’s values and risk tolerance.

6. **Transparent and sustainable funding** - Stormwater services should have transparent pricing and sustainable funding which promote the long-term interests of community (users), reflects community (user) values, understanding of risks and enable service providers to meet agreed levels of service.

7. **Place-based solutions** - Place-based stormwater management solutions should be developed in partnership with local government and communities and reflect communities’ values.

The principles have been used to identify opportunities for improvement for this report.

**Bold change required**

Using the framework and principles outlined above this paper has identified three main areas that local government should focus its efforts to improve stormwater management:

1. Look to improve the effectiveness of the SMA.

While the above areas include improving the existing system (i.e. the SMA and an Urban Water Strategy), it is our view that ultimately, tinkering at the edges of the system is unlikely to result in the change required to achieve the benefits that improved stormwater management could realise.

This paper also outlines recommendations to consider and investigate the opportunities for changes to the Water Industry Act (SA) (2012) (Water Industry Act). This legislation does not currently include stormwater in its definition of ‘water industry’. Therefore, it is largely silent in relation to the management of stormwater. However, with some amendments, it could fundamentally alter how stormwater is governed and managed in South Australia. The Water Industry Act provides the opportunity to appropriately regulate, fund and coordinate the delivery of stormwater services across South Australia similar to how sewerage and drinking water is regulated. The changes that are required are bold and ambitious, and require further consideration to identify any unintended consequences.

A summary of the recommendations made in this report to improve stormwater management is outlined below.
Recommendations

Recommendation 1
Local Government should finalise a ‘framework’ for improving stormwater management and use this as a position to advocate for, and proactively work with state government, to change and improve stormwater management arrangements.

Recommendation 2
Local government should work with the Stormwater Management Authority (SMA) as a priority to:
- undertake a review of the Stormwater Management Agreement
- allocate additional resources to the SMA to increase its ability to deliver on its intended functions and priorities
- review and update its strategic plan
- consider the benefits of the SMA being more proactively involved in the oversight, coordination and delivery of the Stormwater Management Plans (SMPs)
- progress the development of service standards.

Recommendation 3
Local government, the SMA and state government should work together to prepare a state-wide urban water strategy.

Recommendation 4
Undertake a detailed legislative review that looks at the implications of including stormwater in the definition of the ‘water industry’ of the Water Industry Act. This review should look at the opportunities that arise from this change, any possible impacts on other related legislation, such as the Local Government Act and other stormwater related legislation, and how these impacts could be managed.

Recommendation 5
Undertake further detailed work to consider the opportunities and any unintended costs of the model of having a centralised body to manage regional stormwater. This work should consider any required amendments to the Water Industry Act and related legislation.

Recommendation 6
Investigate options for the establishment of drainage charges, including appropriate regulation, basis and mechanisms for equitable distribution amongst local and regional stormwater managers and identify the potential impact on residents under various models.
1. Introduction

Changing climate, growing populations, increasing urbanisation, escalating costs, ageing infrastructure and community expectations for more liveable, sustainable and prosperous cities are driving the need for improved stormwater management in South Australia.

When not managed appropriately, stormwater runoff can pose risks to public health, the natural environment and contribute to flooding. Improved stormwater management has the potential to provide benefits such as healthier waterways and coastal environments, more attractive, greener and cooler urban environments, reduced flood risk and an alternative water source to support water security.

In South Australia, the governance and institutional arrangements for managing stormwater is a shared responsibility across state and local government. However, local government frequently carries the burden of this responsibility in the development, operation and maintenance of stormwater infrastructure and for on-ground management solutions.

South Australia is recognised as a leader in water management, including stormwater management, harvesting and reuse. Councils have frequently been at the forefront of innovative stormwater management approaches. South Australia has the expertise to manage and use water efficiently and effectively. However, despite improvements and reform over the last decade, the current governance, institutional and funding arrangements for stormwater management continue to limit the ability to effectively plan for the long-term, deploy these expertise and capabilities, and realise the benefits from stormwater for local communities.

1.1. Purpose of this position paper and its scope

The purpose of this position paper is to:

- progress the work undertaken to date by the Local Government Association of South Australia (LGA) regarding understanding the opportunities and constraints to improving stormwater management arrangements in South Australia;
- provide local government with recommendations, backed by an informed narrative, and
- identify a pathway for local government to collectively advocate for improving the management of stormwater in South Australia.

This position paper will be used as a basis for feedback and discussion from local government to inform an action plan for the LGA to advocate for improved stormwater management in South Australia.

Stormwater management is a term that is often used interchangeably in literature and policy. It often refers to the governance and institutional arrangements for the management of stormwater, but can also refer to the on-ground measures used to physically manage stormwater (such as water sensitive urban design (WSUD)). This paper focuses on the governance, institutional, policy and funding arrangements, which the LGA has previously identified as a challenge that is hindering the realisation of stormwater outcomes across South Australia (LGA 2018b).

This position paper builds on the work undertaken to date by the LGA and Stormwater Management Authority (SMA). Appendix A provides a summary of this work. This work provides supporting background and context to this position paper. Work completed in 2019 by the LGA highlighted the need to move beyond discussions of the problem to identifying and implementing practical actions to address the
problem (LGA 2019). This position paper purposefully focuses on moving the discussion from ‘why’ there is a problem towards ‘how’ the problem can be addressed and tries not to repeat previous work.

1.2. Structure of this report

This position paper includes a framework for good stormwater management as well as recommendations that local government can use to work collaboratively with state government and other stakeholders to advance the management of stormwater in South Australia. The remaining sections within this position paper include:

Section 2 An overview of the current stormwater management arrangements in South Australia and in other jurisdictions, as well as a brief commentary on recent work by the Productivity Commission.

Section 3 Outlines the challenges and missed opportunities that are driving the need for local government to revisit how stormwater is managed in South Australia.

Section 4 Provides a framework and associated set of principles which underpin the ability to achieve good stormwater management, and should be used by local government to frame and guide future effort and decisions.

Section 5 Outlines three main areas and recommendations where improvements to stormwater management arrangements in South Australia could be made.

Section 6 Provides a high-level overview of what the next steps could look like, noting that further work will be undertaken for the second part of this project to develop a specific action plan.

Appendix A Includes a summary of previous work undertaken by local government that relates to stormwater management and summarises the key findings from that work.

Appendix B Provides further details on the drainage charges applied in various jurisdictions across Australia,
2. An overview of stormwater management arrangements

This section of the paper provides an overview of stormwater management arrangements in South Australia and other jurisdictions and the 2017 national inquiry into urban water reform.

2.1. Stormwater management arrangements in South Australia

Stormwater management and regulation in South Australia is complicated; with a range of legislation and responsibilities spread across organisations. Having multiple players with shared and often overlapping responsibilities is one of the most challenging aspects of stormwater management in South Australia.¹

Legislation and related instruments

The key pieces of South Australian legislation that include a specific role or requirement for managing stormwater (services) are:

- Local Government Act 1999 (SA)
- The Stormwater Management Agreement and Schedule 1A of the Local Government Act 1999 (SA)
- Metropolitan Drainage Act 1935 (SA)
- South-Western Suburbs Drainage Act 1959 (SA)
- Natural Resources Management Act 2004 (SA) (and proposed Landscape Act)
- Environment Protection Act 1993 (SA) and Environment Protection (Water Quality) Policy 2015
- Emergency Management Act 2004 (SA)
- Planning, Development and Infrastructure Act 2016 (SA)

Roles and responsibilities

As implied by the array of legislation listed above, stormwater is managed by many different organisations in South Australia. Across metropolitan Adelaide alone, there are 27 organisations which play a role in stormwater management, including:

- 19 local government authorities
- 2 local government regional subsidiaries (Gawler River Floodplain Management Authority and Brownhill Keswick Creek Stormwater Board)
- 3 state government agencies (Department for Environment and Water (DEW), Department of Planning, Transport and Infrastructure (DPTI), Environment Protection Authority (EPA))
- 1 Natural Resources Management Board (Adelaide and Mount Lofty Ranges Natural Resources Management

¹ More information and commentary around the current roles and responsibilities can be found in LGA supporting documentation such as the Review of stormwater management legislation and policy 'un-muddying the waters': issues paper (LGA 2018b).
Board)
• 1 government corporation (SA Water)
• 1 statutory authority (Stormwater Management Authority (SMA)).

Table 1 provides a summary of the roles and responsibilities of these entities.

The array of legislation and responsibilities across numerous agencies is contributing to piecemeal decision making and a lack of consistent and strategic management. Local government has identified the following key challenges as a result of the current governance arrangements:
• lack of clear/agreed definition of stormwater and stormwater management
• lack of agreed benchmarking of acceptable risk or failure rates
• no delineation between retrospective and prospective stormwater management
• no clear pathway for elevating or identifying when responsibilities shift from local government to state government (LGA November 2018b).

**Key finding:** The wide array of legislative responsibilities shared across organisations is contributing to a lack of clear leadership, coordination and cohesive approach to stormwater management across South Australia.

### 2.2. Stormwater management arrangements in other jurisdictions

While there is a growing evidence-base of best practice ‘on-ground’ stormwater approaches and management (e.g. WUSD), there is less clarity (nationally and globally) around best practice approaches on how to govern, legislate and fund the business of stormwater management. While broadly across Australia stormwater is a shared responsibility between multiple parties, there is an array of models and approaches used. In all examples however, local government plays a critical, albeit varying role.

Previous work completed by the LGA (including the *Review of stormwater management legislation and policy: Discussion Paper* (2018a)) provides more details on stormwater management arrangements across Australia. In summary, this work highlighted that:

• In many jurisdictions a water utility or similar organisation plays a greater role than in South Australia. In Melbourne, Sydney and Perth, water utilities have some level of responsibilities for regional (or major) stormwater systems, which are funded by drainage charges. This model is also common in the United States of America where there are over 2,500 ‘stormwater utilities’ that levy drainage charges to fund stormwater management.

• Drainage charges are commonly linked to the management and oversight of some stormwater functions by a centralised body (e.g. water utility). This charge is generally used to fund the operations, maintenance and upgrades of regional stormwater infrastructure and to undertake other waterway health-related functions (refer to Appendix B for a list of drainage charges applied across Australia).

**Key finding:** There is a growing trend interstate and internationally, of centralised bodies (such as a water utility) having management and oversight of major stormwater infrastructure, supported by a regulated funding source (such as drainage charges).
Table 1: Summary of responsibilities

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<tr>
<th>Organisation</th>
<th>Responsibilities</th>
<th>Key relevant legislation</th>
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| Local Government                  | • Take measures (including building and maintenance of infrastructure) to protect their local government area from natural hazards, including flooding from stormwater runoff  
• Have a role to “manage, develop, protect, restore, enhance and conserve the environment in an ecologically sustainable manner ...” which extends to how stormwater is managed, driving much of the activity in harvesting across the state over recent decades  
• Play a critical role in the land use planning process through their development and administration of development plans, which determine where and what kind of development can occur, including in flood prone areas  
• Have a role in maintaining some roads (and stormwater fixtures installed to protect roads)                                                                 | Local Government Act 1999 (SA)  
Planning, Development and Infrastructure Act 2016 (SA)  
Metropolitan Drainage Act 1935 (SA)  
South-Western Suburbs Drainage Act 1959 (SA) |
| SMA                               | • Provide oversight and coordination of stormwater management, including prioritisation of infrastructure works  
• Assist state and local government in preparing policies and best practice  
• Facilitate and coordinate preparation of stormwater management plans (SMP) with local government  
• Provide funding under the Stormwater Management Fund (SMF) to support local government in the delivery of SMPs                                                                 | The Stormwater Management Agreement and Schedule 1A of the Local Government Act 1999 (SA) |
| DEW                               | • Flood management hazard leader with specific duties in state-wide emergency flood management planning, including the development of a Hazard Plan  
• Responsible for leading the development of state-wide strategy (such as the urban water strategy) and oversight of implementation of state-wide water policy, Water for Good  
• Management of specific stormwater assets identified in the Stormwater Management Agreement (e.g. Patawalonga)                                                                 | State emergency management plan under the Emergency Management Act 2004 (SA)  
Stormwater Management Agreement |
| Natural Resource Management Boards (NRM boards) | • Have special powers to carry out works, including works undertaken for the purposes of stormwater management or flood mitigation                                                                                           | Section 31 Natural Resources Management Act 2004 (SA)                                                       |
| **EPA** | • Responsible for the protection of the environment, including from a water quality perspective  
• Responsible for issuing and managing licenses as well as mitigation of non-point source pollutions | Environment Protection Act 1993 (SA) and Environment Protection (Water Quality Policy) 2015 |
| **SA Department for Planning, Transport and Infrastructure (DPTI)** | • Responsible for overseeing the development and land use planning across the state  
• Manages approximately 25 percent of SA’s road network  
• Develops stormwater design standards and guidelines | Planning, Development and Infrastructure Act 2016 (SA) |
| **SA Water** | • Responsible for the Sturt River Flood Control Dam, and the parts of Adelaide watercourses that it manages pursuant to the Metropolitan Drainage Act 1935 (SA) and the South Western Suburbs Drainage Act 1959 (SA) | South Western Suburbs Drainage Act 1959 (SA)  
Metropolitan Drainage Act 1935 (SA)  
Schedule 1 of the Stormwater Management Agreement |
| **SA State Emergency Services** | • Flood emergency control agency, responsible for coordinating emergency response following a flooding event | State emergency management plan under the Emergency Management Act 2004 (SA) |
| **SA Department for Health and Wellbeing** | • Responsible for developing policy and providing advice to other agencies and the public to prevent or minimise the adverse health effects of environmental hazards in the South Australian community, including providing advice to water providers, local councils, government agencies, and the public on the health implications of recycled water use (including stormwater reuse) | South Australian Recycled Water Guidelines 2012 |
| **Private Landowners** | • Landowners, including owners of strata title property and other private landowners, have responsibilities for the condition of watercourses which pass through their land | Environment Protection Act 1993 (SA) and Water Quality Policy  
Natural Resources Management Act 2004 (SA) |
2.3. National urban water reform – Productivity Commission inquiry

The discussion and debate surrounding the need to reform stormwater management in South Australia coincides with and reflects a larger discourse occurring at the national level. In 2017 the Productivity Commission completed an inquiry into the progress of Australian governments in achieving the objectives, outcomes and timelines anticipated under the Intergovernmental Agreement on a National Water Initiative. The inquiry (PC 2017) identified several actions to improve urban water and stormwater management in Australia, including:

- Recommendation 3.1(f) – State and Territory Governments should ensure that their entitlement frameworks can incorporate alternative water sources, such as stormwater, wastewater and managed aquifer recharge, so they do not present a barrier to efficient investment in these supply options.
- Recommendation 6.1(b) – State and Territory Governments should: require that decision-making processes are consistent with good planning principles, in particular that they consider all options fully and transparently, including both centralised and decentralised approaches (including indirect and direct potable reuse, and reuse of stormwater), and are adaptive in response to new information.
- Recommendation 6.2 – State and Territory Governments should ensure that decentralised integrated water cycle management (IWCM) approaches are considered on an equal footing alongside other water supply and management approaches, particularly in the planning of new developments to support urban growth. Priorities are:
  a. ensuring that place based IWCM plans are developed for major growth corridors and significant infill development locations
  b. ensuring that options identified in IWCM plans are considered in water system planning, including both high-level system-wide planning and detailed investment planning, and in land-use planning
  c. ensuring that IWCM projects are implemented when they are shown to be cost-effective (considering their full range of benefits)
  d. reviewing the role that developer charges play in planning for new developments.

**Key finding:** The Productivity Commission Inquiry into urban water management recommendations reflect the challenges identified in South Australia and point to opportunities for further reform.
3. Drivers for change

This section of the position paper summarises the drivers behind local government’s desire to improve stormwater management in South Australia.

3.1. Flooding

Floods are the most economically damaging natural hazard in South Australia. Flash flooding from short term, high intensity rain events is the most common type of flooding in urban centres in South Australia. Climate change scenarios are predicted to increase the frequency and intensity of extreme rainfall events – putting greater pressure on existing and ageing infrastructure. Population growth (and associated urbanisation and densification) in Adelaide and regional centres will also put a greater demand on existing stormwater infrastructure.

The ability to effectively respond to the increased risk of flooding is hindered by the governance arrangements outlined in Section 2.1, and the associated lack of adequate funding. This was highlighted following significant flood events in September 2016, where there was a public debate between state and local government as to who was responsible for stormwater management (LGA, 2018b). This lack of clarity and disagreement not only highlights that the system is confusing and unclear, but also provides an opportunity for blame shifting, as opposed to solution building.

Key finding: The current disaggregated stormwater management arrangements, lack of regulation and appropriate funding is exacerbating the risks of flooding.

3.2. Unsustainable and rising costs

An interrelated issue is the increasing operational and maintenance costs of existing (soft and hard) infrastructure, and renewal requirements of ageing infrastructure. Much of the existing (hard) infrastructure in South Australia is ageing and requires costly repair, renewal, or upgrades to accommodate increased runoff from climate change impacts and population growth.

There has also been an increase in the use of soft or ‘green infrastructure’ such as wetlands and detention basins over the last 20 years. This soft form of infrastructure also requires ongoing maintenance and upgrades to optimise performance. There is a growing demand by communities for these types of solutions. However, the current planning regime does not deal well with this type of infrastructure. This is coupled with challenges in uptake by developers due to a lack of incentives and the ‘perceived’ associated risks.

Informal estimates suggest that approximately $4 billion worth of infrastructure across Adelaide will need to be replaced in the next 50 years or so. There is generally a lack of collective and consistent understanding across South Australia of the current state of stormwater infrastructure and the long-term costs required to

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2 When referring to infrastructure in this report we include both soft (e.g. wetlands) and hard (e.g. pipes and culverts). Both types of infrastructure are required and used within a stormwater and drainage system.
maintain and upgrade it to meet required flood mitigation standards (i.e. 1 in 100-year flood events\(^3\)). Costs for the entire state could be substantially higher than the estimate for Adelaide.

State government provides grant funding via the SMA to assist local government with stormwater infrastructure development and management responsibilities. SMA typically fund half the value of successful applications for funding, with local government contributing the other half. Between 2012-13 and 2016-17, the Stormwater Management Fund (SMF) contributed approximately $22 million of the total $54 million\(^4\) spent on strategic stormwater projects (LGA 2018a). The SMA is currently ‘oversubscribed’, receiving more requests for funding than it has funding available. The total cost for local government across the state is estimated to be in the order of $110 million per year (LGA pers comm., 23 October).

Based on the indications of the cost of upgrades over the coming 50 years the current level of investment available through the SMA is clearly not enough to meet the maintenance and renewal of ageing infrastructure across the state.

In addition to the SMF, stormwater management activities are also funded through an ad-hoc and variable combination of:

- local government funding via council rates
- state revenue used to appropriate SA Water for their stormwater asset responsibilities
- money collected by NRM boards through NRM levies
- Commonwealth grants and initiative funding.

However, these funds still fall short of the estimated total cost over the next 50 years.

**Key finding:** Current funding available to local government is not adequate to meet the growing costs for stormwater services across South Australia.

### 3.3. Lack of consistent standards of service

There is no definitive benchmark for what standard stormwater systems must be built and maintained to in South Australia (partly because of the disaggregated responsibilities of stormwater). Some stormwater systems may be built to maintain a 1 in 100-year flood (100 year Average Recurrence Interval (ARI) Standard with a one percent chance of occurrence each year), while others may be built to maintain as little as a 1 in 5-year flood (5 year ARI standard with a 20 percent chance of occurring each year) (LGA 2018a). Limited funding often results in decisions to reduce levels of maintenance.

Improved regulation of stormwater infrastructure, preferably under one piece of legislation, that provides guidance and possible levels of prescription would improve this. However, the success of this will rely on adequate and long-term funding.

**Key finding:** A lack of regulation and disaggregated responsibilities is resulting in inconsistent standards and levels of service.

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\(^3\) While used for explanatory purposes, the term 1 in 100-year flood event is based on historic records of floods occurring. As a result of climate change, there is a move away from using this measurement in policies.

\(^4\) This figure relates to the amount councils spent on joint projects.
3.4. Climate change

Climate change is predicted to have a significant impact on stormwater management. An increase of extreme rainfall events will increase the likelihood and intensity of floods and consequently, damage to stormwater infrastructure. Dry and drought periods are also predicted to increase, increasing the importance of alternative water supply options, including stormwater, to diversify supply.

South Australian councils have started considering the risks to stormwater infrastructure presented by climate change. For example, the Resilient Hills and Coasts Regional Adaptation Plan identified stormwater management in its adaptation options. The Plan emphasises that within the next 5 years, existing stormwater infrastructure may need to be made larger in size in order to continue to operate effectively if the frequency and intensity of rainfall increases (Alexandrina Council 2016, p. 55).

Key finding: Increased rainfall variability and intensity arising from climate change is increasing the risks posed by stormwater runoff and highlighting gaps and weaknesses in the existing approach to stormwater management in South Australia.

3.5. Un-realised benefits

In addition to addressing the key risks outlined above, improving stormwater management presents an opportunity to drive further benefits for South Australian communities and environments including:

- **Enhanced liveability and climate resilience outcomes for communities:** If managed appropriately, stormwater can contribute to wellbeing, amenity, and recreational values by providing a low-cost water supply for irrigation of open spaces. Maintaining public green spaces in urban areas during hot and dry periods can help to mitigate urban heat island effects and provide a range of mental and physical health benefits to the community.

- **Maintained or improved health of waterways and coastal environment:** Stormwater quality and runoff volume can degrade urban waterways, rivers and coastlines. Appropriate stormwater management can mitigate the impacts of increased urbanisation on waterways and the surrounding natural environments – improving the quality of stormwater runoff that enters waterways and minimising the volume of stormwater discharged to waterways through stormwater infiltration, capture and reuse. Improved waterway ecological condition also provides important habitat and refuge for local wildlife, increases local biodiversity and contributes to local amenity.

- **Improved water security:** Harvesting and reuse of stormwater can support water security by providing an alternative source of water supply (e.g. for toilet flushing and irrigation) and diversifying the supply portfolio, supporting the resilience of water supplies to urban communities, particularly in drought. In some circumstances, stormwater can be more cost effective than other alternative water sources, such as desalinated water.

Key finding: A more integrated and better regulated approach to water management, where stormwater is considered as part of the broader urban water cycle management, is required to realise the potential benefits from stormwater.
4. Framework for decision making

This section of the paper provides guiding principles for good stormwater management that provides a framework for future decision making

Policy and legislative reform are a journey. The end destination will not be achieved through one or two simple changes or actions. When faced with a long and complex journey it is important to have in mind an understanding of what the destination is – or what success looks like. In addition, the complex nature of stormwater management and the many stakeholders involved means that change will require agreement by a range of parties. This can be achieved in various ways, but a good starting point is to establish key parameters, or guiding principles. These principles collectively form a framework for decision making.

The section outlines a framework and set of guiding principles that:

- reflect and align with the drivers and challenges summarised in Sections 2 and 3 of this paper
- the priorities recently identified by local government at the workshop held in April 2019 summarised in Box 1
- the recommendations from the Productivity Commission (2017).

Moving forward, this framework and guiding principles can be used to build a narrative and inform future decisions. The following section (5) of this position paper outlines changes that could be made to the existing arrangements that would address these principles.

Box 1: Local Government priorities for improved stormwater management

The LGA has recently undertaken a series of work, including the development of a position paper and issues paper (LGA 2018a and LGA 2018b), that sought to define the problem and identify opportunities for improvement in stormwater management legislation and policy. This culminated in a workshop in April 2019 with representatives from South Australian councils, where stakeholders identified the key elements of an improved stormwater management system in South Australia (LGA 2019). The elements of an improved stormwater management system included:

- stronger leadership with clarity of roles and responsibilities
- centralised management body
- fair and equitable service levels
- state-wide strategy for stormwater management
- manage community expectations
- stormwater needs to ‘grow up’ (need to move the conversation on to reform)
- stronger regulatory framework
- dedicated and adequate funding (long-term).
4.1. Framework for decision making

Figure 2 below outlines a framework for decision making, which is made up of seven guiding principles. Each principle is interrelated and support one another. Stormwater management arrangements should have regard for each principle. Improved stormwater management is likely to be achieved if all of these principles are included.

![Framework for decision making](image)

Figure 2: Framework for decision making – guiding principles for good stormwater management

4.2. Guiding Principles

**Principle 1  Leadership**

Good leadership is required from local and state government, including having a shared vision and strategy and clarity on roles and responsibilities.

Stormwater management will always be a shared responsibility. Therefore, leadership is fundamental to successful management. Providing leadership incudes having a clear vision, long-term strategy and clarity on roles and responsibilities. As part of this, responsibilities must be assigned to those that are best placed (both in terms of capability and capacity) to fulfil such obligations.

Leadership can come from local government, by providing a united voice on what is required to improve stormwater management. It must also come from the state government. Ideally there would be an agreed state-wide vision, strategy and plan that would be implemented in partnership.

Having clear leadership will result in better decisions, better coordination, better use of resources and better outcomes.
Principle 2  Integration

Stormwater should be considered as part of an integrated water cycle management framework, alongside water supply, sewerage and waterway health in order to maximise social, environmental and economic benefits.

IWCM is a holistic approach to planning and management of all facets of the water cycle to maximise social, environmental and economic benefits, as summarised in Section 3.5. IWCM integrates the planning of these systems to provide benefits that would not be considered if developed separately. It requires shared goals and mutually supportive activities across these systems. Sustainable stormwater management is an essential component of IWCM (Melbourne Water 2018).

In order to maximise these outcomes stormwater must be considered holistically within all elements of the urban water cycle (including water supply, sewerage, drainage and waterway health). Ideally legislative and policy settings should facilitate the consideration of urban water cycle elements within a single management framework.

Principle 3  Understanding of the full suite of costs and benefits

Investment and management decisions should be based on an informed understanding of the long-term direct and indirect benefits and costs (impacts)

As cities and communities continue to grow (especially in population density), it is important to ensure that sound investment decisions and fit-for-purpose stormwater solutions are being put in place. While the obvious risk is that infrastructure will not be maintained or upgraded to meet these demands, there is also a risk that costly and ineffective investment decisions will be made when cheaper solutions could have met the ‘desired outcome’. To avoid this investment and management decisions need to be based on strategic long-term planning with consideration of the full direct and indirect benefits and costs. These should include the benefits and or indirect costs to the environment, amenity and other community values.

Principle 4  Risk based decisions

Decisions should be prioritised based on risks to people, property and the environment

Stormwater can contribute to multiple benefits; however, it can also contribute to flooding and loss of life and property. Given the extent of the investment required over the next 50 years, it is likely that decisions will need to be prioritised due to funding constraints and project delivery capacity. Investment decisions should be prioritised based on the risk to life, property and to the environment, building upon SMA’s prioritisation approach that focuses upon flooding risks.

Principle 5  Levels of service

Management of stormwater should be based on place-based agreed levels of service that is reflective of each community’s values and risk tolerance.

A service level framework that outlines a process of agreeing to levels of service/flood prevention with local communities will support transparent, fair and equitable decision-making across South Australia. Agreed level of service should be based on the community’s values, willingness to pay and tolerance for risk.
Principle 6  
**Transparent and sustainable pricing**

Stormwater services should have transparent pricing and sustainable funding which promote the long-term interests of community (users), reflects community (user) values, understanding of risks and enable service providers to meet agreed levels of service.

Stormwater management is reliant upon ongoing and sustainable funding to support the operation and maintenance of existing infrastructure and development of new infrastructure. Transparent pricing, where users (i.e. the community) pay for stormwater management services based on agreed levels of service, would provide a sustainable and long-term funding source. Additionally, a balance between different pricing mechanisms should be sought between ‘impactor pays’ (e.g. developers) and ‘beneficiary pays’ (e.g. households) to ensure transparent and equitable pricing.

Principle 7  
**Place-based solutions**

Place-based stormwater management solutions should be developed in partnership with local government and communities and reflect communities’ values.

Stormwater solutions should be developed in partnership with local government and their communities, reflect the values of those communities, and maximise environmental, social and economic outcomes.

There are often multiple ways to achieve the same outcome but the costs for these solutions vary. The cheapest solution may not always be the best. The choice as to which solution is most appropriate will vary across communities and can include both hard infrastructure and soft or ‘green’ infrastructure solutions. The best solutions will be those that are developed with communities and tailored for communities. These solutions are far more likely to gain support and deliver improved outcomes. Local government does, and should continue to play a central role in developing these place-based solutions.

**Recommendation 1:** Local Government should finalise a ‘framework’ for improving stormwater management and use this as a position to advocate for, and proactively work with state government, to change and improve stormwater management arrangement.
5. Opportunities for better stormwater management arrangements

This section outlines opportunities for change that will improve stormwater management in South Australia. The recommendations are built on the guiding principles outlined in Section 4.

Using the framework and principles describes in section 4 we have identified three areas that local government should focus its efforts to improve stormwater management:

1. Look to improve the effectiveness of the SMA
2. Advocate for the state-wide Urban Water Strategy

Each opportunity is outlined in more detail below.

5.1. Stormwater Management Authority (SMA)

The SMA is an important existing vehicle that has had some success providing a more coordinated approach to stormwater management and a source of revenue for improvements and upgrades to infrastructure. Given it was established in partnership by local and state government, it is the ideal body to progress both short term improvements and longer-term reform. Therefore, it is critical that the SMA is enabled to be as effective as possible.

There are two questions that need to be answered in relation to the SMA. Firstly; is the SMA working effectively as possible within its current remit and powers under the Stormwater Management Agreement and secondly, is the Agreement adequate?

As it was not within the scope of this project to undertake a detailed assessment of the Stormwater Management Agreement the second part of this question cannot be fully answered and further work on this is required. There are however opportunities to improve the effectiveness of the SMA under the existing Stormwater Management Agreement. This includes:

- **Providing the SMA with more resources to operate.** Currently it has one Executive Officer. The current level of resources limits the ability for the SMA to be proactive in many areas, having to focus its time on assessing and responding to the high demand for funding via the stormwater management fund. In effect it only has time to administer grants. Additional resources would enable it to be more strategic, proactive, drive further reforms and provide greater coordination.

- **Enabling the SMA to take a more strategic and outcomes-based approach.** This would include reviewing and updating the existing SMA strategic plan. The new plan should align with other state plans, provide an updated narrative and focus more on outcomes and priorities for the coming agreed term (i.e. five years). This plan as much as possible should embrace the principles describes in section 4. Funding for works would align with the identified priorities and demonstrate they are contributing to the agreed outcomes. This approach would move the role of the SMA away from being a ‘grant’ funder to being a more proactive strategic planning entity. It could then proactively seek partnerships (such as with Greening Adelaide) to implement projects, including by seeking funding from partners if projects delivered multiple benefits.
• **Enabling the SMA to be more involved in the delivery of SMPs.** This would involve looking for opportunities for the SMA to take a more proactive role in coordinating and facilitating the delivery of the SMPs. This approach would enable greater consistency of approaches across regions and provide economies of scale.

• **Progress the development of service standards.** The implementation of the SMPs provides an opportunity to also implement agreed levels of service. However, it does not make sense for each SMP delivery agency (such as the Brownhill and Keswick Stormwater Board) to develop these standards separately. The SMA, in line with the above role, could be more proactive in working with councils to develop agreed levels of service.

Improving the effectiveness of the SMA is the most immediate and practical approach that local government can take to improve the management arrangements of stormwater. However, we see a long-term risk to the current model in that the ongoing success of the SMA and the delivery of the SMP’s is largely reliant on the agreement and partnerships of various local governments. Over time, without clear regulation this can be tested as council members change, funding pressures grow and the support from communities for these activities vary. Therefore, we believe long term effective improvements to stormwater management will require changes to the overall legislative and governance arrangements.

**Recommendation 2:** Local government should work with the SMA as a priority to:

- undertake a review of the Stormwater Management Agreement
- allocate additional resources to the SMA to increase its ability to deliver on its intended functions and priorities
- review and update its strategic plan to be an outcome focussed plan
- consider the benefits of the SMA being more proactively involved in the oversight, coordination and delivery of the SMPs
- progress the development of service standards.

## 5.2. State-wide urban water strategy

The South Australian government has intended to update the 2010 Stormwater management strategy for some time. It is also considering the next iteration of ‘Water for Good’. Informally this is referred to as the ‘Urban Water Strategy’. In line with the recommendations arising from the Productivity Commission and the inherent challenges of and opportunities presented by stormwater management, it is important that this work is progressed, and that South Australia takes a more integrated and long-term approach to water management planning.

The development of an Urban Water Strategy provides an opportunity to take an integrated approach (i.e. IWCM) to how we plan for future water needs, maximising outcomes while also mitigating the risks.

This strategy should consider the broader benefits and risks for urban water and look at all potential sources of water. This plan would be broader than just stormwater, but will set the high level state wide approach for urban water, of which stormwater is an essential part.

Using the Guiding Principles in Section 4 of this position paper, local government should work with state government and other stakeholders to prepare a high-level state-wide urban water strategy. This strategy would enable agreement on a vision and long-term outcomes, priorities and measures of success. It could provide the basis for significant future reforms and build the narrative and inputs for further change.
**Recommendation 3:** Local government, the SMA and state government should work together to prepare a state-wide urban water strategy.

### 5.3. Water Industry Act (2012)

The *Water Industry Act 2012 (SA)* (*Water Industry Act*) regulates the water and sewerage industry in South Australia. It was introduced to provide a framework for an independently regulated water industry that protects the needs of customers, public health and the environment and provides opportunities for new participants in the industry.

The *Water Industry Act* in its current form only considers stormwater from a supply point of view, referring to stormwater under the retail definition of water. It does not consider stormwater as part of water supply and demand planning, and does not regulate its use.

There is an opportunity to reform this legislation, and improve the ability to manage and regulate stormwater by including stormwater in the definition of the ‘water industry’. This change could address many of the challenges identified throughout this paper, while also contributing to the realisation of the principles listed in Section 4.

If stormwater was considered part of the ‘water industry’ under the *Water Industry Act* then the Act could:

- provide a mechanism for centralised and regulated body to oversee regional stormwater services – addressing Guiding Principle No.1
- become the vehicle to provide an appropriate legislative framework that enables IWCM and supply and demand planning - addressing Guiding Principle No.2
- promote measures to ensure that water supply and demand planning includes all alternative sources of water. - addressing Guiding Principle No.2.
- include mechanisms for the transparent setting of prices within the water industry and facilitate pricing structures that reflect the true value of services provided by participants in that industry - addressing Guiding Principle No.3 and 5
- provide for and enforce proper standards of reliability and quality in the water industry, including in relation to technical standards for water and sewerage infrastructure, and installations and plumbing – addressing Guiding Principles No.5 and 6.

The most significant reforms that could be made to the *Water Industry Act* include:

- the provision of a central entity to manage stormwater across a region
- the ability to apply drainage charges to stormwater customers.

These two reforms are explored in further detail below.

**Recommendation 4:** Undertake a detailed legislative review that looks at the implications of including stormwater in the definition of the ‘water industry’ of the *Water Industry Act*. This review should look at the opportunities that arise from this change, any possible impacts on other related legislation such as the Local Government Act and other stormwater related legislation, and how these changes could be managed.
Centralised stormwater entity

If stormwater was recognised as part of the water industry then The Water Industry Act could provide a framework for ‘regional’ stormwater to be managed by a centralised body – which could be any licenced water industry entity under the Act, including a water utility such as SA Water, a local government (or a group of local government entities) or a private water industry entity.

As highlighted in Section 2.2, several other jurisdictions in Australia have taken a similar approach. This model provides a more strategic and holistic approach to the management of stormwater and enables more appropriate regulation and funding.

Under this model an entity is regulated to manage and oversee the public regional stormwater system5. Private land owners continue to be responsible for the infrastructure that is within their private property and local government continue to be responsible for the public local stormwater system (refer to Table 2 below for a breakdown of responsibilities under a centralised stormwater entity model).

Table 2: Breakdown of responsibilities under centralised stormwater entity model

<table>
<thead>
<tr>
<th>Stormwater system</th>
<th>Description</th>
<th>Current responsibility</th>
<th>Responsibility under centralised stormwater entity model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private local stormwater system</td>
<td>The part of the system that is within private property (e.g. a house block). Typicaly consists of gutters and downpipes, but private properties can also contain ditches, small channels and swales and sometimes small creeks as part of the stormwater conveyance system.</td>
<td>Currently, the responsibility of the landowner.</td>
<td>No change would occur.</td>
</tr>
<tr>
<td>Public local stormwater system</td>
<td>Designed to remove stormwater from areas such as streets and footpaths to provide pedestrian safety and convenience and vehicle access. Typically consists of inlets, street and roadway gutters, roadside ditches, small channels and swales and small underground pipe systems and small creeks that transport water to the regional drainage system.</td>
<td>For the most part is the responsibility of local government with some shared responsibilities across state government.</td>
<td>Would remain with local government with clarified boundaries of responsibilities.</td>
</tr>
<tr>
<td>Public regional stormwater system</td>
<td>The part of the overall drainage system that controls larger flows from bigger, less frequent storms. Typically consists of large constructed conduits and</td>
<td>This is a shared responsibility between local government with some specific areas (such as Patawalonga) being the responsibility of SA Water and state government.</td>
<td>Managed by a centralised body with greater regulation and a dedicated revenue source.</td>
</tr>
</tbody>
</table>

5 A regional stormwater system is the part of the overall drainage system that controls larger flows.
natural waterways, but can also include some less obvious drainage ways such as over land relief swales and infrequent temporary ponding areas (‘flood storage’). These systems can be located within private properties (and sometimes in private ownership) although they provide a stormwater management service for all upstream properties.

There are several possible benefits that could be achieved through this model including:

- greater ability to develop and implement integrated regional-wide strategy and planning
- economies of scale in both the efficiency of operations and investments in infrastructure
- greater focus on regional scale flood mapping and planning
- greater integration of issues, drivers and outcomes
- consideration of a broader suite of benefits and costs in planning
- ability to retain and maintain appropriate levels of service and capabilities through economies of scale.

Under this model local government would retain responsibility for the local stormwater system. This would see local government retaining most of its current functions in relation to planning, local asset management and implementing street scape solutions and WSUD.

In many regional areas the local government entity may become the water industry entity or ‘utility’. In larger metropolitan areas a separate entity may be established.

Recommendation 5: Undertake further detailed work to consider the opportunities and any unintended costs of the model of having a centralised body to manage regional stormwater. This work should consider any required amendments to the Water Industry Act and related legislation.

Drainage charges

It is often assumed that stormwater drainage services are currently unpriced, however this is not completely accurate. Landowners pay for the costs of stormwater drainage services through local government rates, natural resources management levies and general taxation (which appropriates the SMF and other state and federal grant programs). This is neither a transparent nor efficient means of paying for the costs of stormwater management.

Allowing a centralised entity such as outlined above to charge for providing, operating and maintaining stormwater infrastructure would facilitate transparent pricing that better reflects the costs of providing such a service. There are numerous examples of this type of arrangement across Australia and abroad as highlighted in Section 2.2.

If responsibility for regional stormwater systems was shifted to a water industry entity under an amended Water Industry Act, drainage charges could be collected as part of the existing billing arrangements, with prices independently regulated by the Essential Services Commission of South Australia (ESCOSA).
aligns with current processes in New South Wales and Victoria, where drainage fees are regulated by the Independent Pricing and Regulatory Tribunal (In New South Wales) and the Essential Services Commission (in Victoria) and charged to all houses in an area at the relevant rate dependent on the size of the property (see Appendix B). Specific drainage charges could be set based on a range of possible property attributes, including capital value, impervious area, or property size. Collection of drainage charges could be based on defined drainage areas, with all properties required to pay the relevant fees, which could be tailored for different drainage districts to reflect different cost requirements to address stormwater management. In addition to drainage charges for established properties, developer charges could be collected to fund the development of new stormwater infrastructure in areas of new or redevelopment.

If drainage funds are collected for a regional drainage system area by a water industry entity, additional mechanisms could be established for portions of the funding to be passed through to local government to support management of the local drainage system.

It is acknowledged that there is currently little appetite by the state government to impose another ‘levy’. This change would require further detailed consideration and understanding of the options for the type and collection of the fees and the likely costs imposed. However, in the medium term unless there is serious consideration given to a more sustainable form of funding, the current risks and challenges facing stormwater management in South Australia are unlikely to be resolved. The Water Industry Act is an appropriate piece of legislation that could, relatively easily address the growing issue of appropriate funding for stormwater services.

**Recommendation 6:** Investigate options for the establishment of drainage charges, including appropriate regulation, basis and mechanisms for equitable distribution amongst local and regional stormwater managers and identify the potential impact on residents under various models.
6. Next steps

This position paper seeks to articulate the need for change in how South Australia manages stormwater (from a legislative and governance perspective). In many respects there is little debate or argument around the current failings, challenges and tensions inherent within the current system. The challenge is to identify the most effective and practical pathway forward that can lead to real change to address these issues.

There is no easily transferable or ‘single fix’ solution to stormwater management. Gaining support and agreement with the many players involved is critical but may not be straightforward. We propose that local government focus its efforts on the following four areas:

1. **Agree on what success looks like:** in the first instance, agree on a framework and associated set of principles based on those outlined in Section 4. This can be used to prepare a narrative and pathway forward that can be used to work with stakeholders to address the challenges.

2. **Bolster the current arrangements:** seek to make improvements to the current Stormwater Management Agreement and Authority to ensure they are working as well as they can within their remit.

3. **Work with State government to prepare a state wide urban water strategy:** develop a high-level system-wide strategy that includes a clear vision, agreed outcomes, priorities and measures of success (targets). This strategy may go beyond stormwater but will set out an ambitious vision for change.

4. **Progress bolder reforms:** work with state government to implement bolder reforms as identified in the Water Industry Act, that will improve the governance, regulation and funding for stormwater management and services in the longer-term.

Ultimately, tinkering at the edges of the system is unlikely to result in the change required to drive the benefits that improved stormwater management could realise.

We have recommended a suite of ambitious changes that will fundamentally alter how stormwater is government and managed in South Australia. If these changes are put in place then the landscape is set to enable best practice on ground management to occur and risks to be effectively mitigated. In short, South Australia needs a new model that provides better leadership, integration, coordination, regulation and sustainable investment. The only approach that is seen as viable is one where parts of the current responsibilities for the management of stormwater are vested to an entity that are regulated under the Water Industry Act. Attached to this is the ability to generate revenue. There are multiple variations available on this model and this paper in unable to fully investigate these details and approaches. However, it should be agreed by local government that more of the same won’t work and that radical changes are required. Fortunately, we have a piece of legislation in the Water Industry Act, that could if altered provide an avenue to achieve this. To date this has not been considered by local government and should be seen as a significant opportunity to improve the management of stormwater.
References


Tate, J 2013, Report: Stormwater Narrative, Jeff Tate Consulting Pty Ltd, McLaren Vale, March 2013.
Tate, J 2012, Report on Councils and Stormwater Harvesting, Jeff Tate Consulting Pty Ltd, McLaren Vale, June 2012.

Legislation

Agreement on Stormwater Management, State of South Australia-Local Government Association of South Australia, 30 August 2013.

Emergency Management Act 2004 (SA)
Environment Protection Act 1993 (SA)
Environment Protection (Water Quality) Policy 2015
Landscape South Australia Bill 2019, Legislative Council
Local Government Act 1999 (SA)
Metropolitan Drainage Act 1935 (SA)
Natural Resources Management Act 2004 (SA)
Planning, Development and Infrastructure Act 2016 (SA)
South West Drainage Act 1959 (SA)
Appendix A – Summary of previous documents

The table below provides a summary of the relevant reports and documents previously written or commissioned by the Local Government Authority of South Australia (LGA SA) on stormwater governance and legislation. It also includes a summary of the Stormwater Management Authority’s Strategic Plan and 2016-2020 regional priorities.

Table 3: Summary of documents

<table>
<thead>
<tr>
<th>Year</th>
<th>Report title</th>
<th>Author</th>
<th>Areas covered</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>Paper on Powers and Liabilities of Councils re creeks and watercourses on private land</td>
<td>K.L. Kelly</td>
<td>• Legal matters about stormwater and drainage management (and the impacts of the Stormwater Management Amendment Bill 2006 (inc. on local government legal responsibilities))&lt;br&gt;• Legal immunity is not covered for drainage works and culverts under the SA Civil Liability Act 1936</td>
<td>• Local government should request review of old drainage Acts as soon as Stormwater Management Bill is passed&lt;br&gt;• Local government should request review of all legislation applicable to the River Torrens with the intention of simplifying into one act&lt;br&gt;• Local government should urge Mt Lofty Ranges NRM Council and State Government to commit to the urgent development of a Code of Practice</td>
</tr>
<tr>
<td>2010</td>
<td>Review of governance issues of the Stormwater Management Authority (SMA)</td>
<td>K.L. Kelly</td>
<td>• Governance arrangements and issues for SMA&lt;br&gt;• Quoracy and conflict of interest issues&lt;br&gt;• Resourcing issues&lt;br&gt;• Lack of accountability concerns, and potential models to fix this&lt;br&gt;• Statutory functions of the SMA&lt;br&gt;• Stormwater Management Fund - establishment, payment and concerns about funding of stormwater reuse&lt;br&gt;• Stormwater Management Plans – rules&lt;br&gt;• General SMA governance, roles and responsibilities</td>
<td>• Suggests local government give consideration to foregoing the nomination (and subsequent appointment) of elected councillors to the SMA Board&lt;br&gt;• Suggests the preparation of a public Code of Ethics&lt;br&gt;• Suggests greater regulation/oversight of SMA performance&lt;br&gt;• Further clarity of the use of Stormwater Management Fund for stormwater reuse – and potential split of the fund to provide for both flood and reuse infrastructure&lt;br&gt;• Suggests extending SMA powers including those related to Stormwater Management Plan implementation, regulation-making powers and extending coercive powers</td>
</tr>
<tr>
<td>2012</td>
<td>Councils and stormwater harvesting</td>
<td>Jeff Tate</td>
<td>• Identifies ‘fragmented approach to water</td>
<td>• Identifies need for a consistent narrative about the</td>
</tr>
<tr>
<td>Year</td>
<td>Document Title</td>
<td>Author/Role</td>
<td>Summary</td>
<td></td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td>2013</td>
<td>Stormwater Narrative</td>
<td>Jeff Tate</td>
<td>Outlines roles of other government agencies; multiple objectives of stormwater harvesting and the ongoing need for collaboration between all levels of government; suggests a formation of a ‘local government water authority’</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Stormwater Management Authority Strategic Plan</td>
<td>SMA</td>
<td>Identifies climate change and urban growth as the key drivers; sets out the direction for the SMA for 2015 to 2025 including a vision and key goals, as well as specific deliverables for the Authority for 2015-2017; briefly explains roles between local government, state and community, and functions of the SMA; summarises functions of SMA; goals for the SMA: - Stormwater planning and infrastructure investments target the highest priority areas of the State and appropriate levels of investment are leveraged across all stakeholders. - Policy and legislative instruments support effective stormwater management, so as to maximise public value through social, environmental and economic outcomes, and require stormwater to be a key component of integrated urban water management across the State. - All stakeholders are engaged effectively in stormwater management decision making and are informed about the role stormwater plays in integrated urban water management.</td>
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</table>

- Summary of stormwater policy and framework (focused on Water Sensitive Urban Design (WSUD))
- Summary of drivers underpinning stormwater policy (climate change and urban growth)
- Summary of council roles and objectives (focused on those for WSUD)
- Four case studies on a range of approaches to stormwater management at different points of time (focused on approaches to WSUD)
- Better coordination between agencies about promotion of water management and terminology
- Pitched a narrative for local government (with external and internal messages) which included ‘councils are leaders in stormwater management’ and ‘proactive involvement by local government in overall water management is crucial’ and ‘robust governance arrangements are required at different levels’
### Summary

**Forecast growth or of regional significance (i.e. large town):**
- Port River Catchments (east)
- Munno Para System
- Virginia
- Hindmarsh Enfield Prospect

**High priority regional investment:**
- Clare
- Renmark
- Port Augusta

### 2018 Review of stormwater management legislation and policy: Discussion paper

**LGA SA**
- Summarises SA legislation and policy definitions related to stormwater, as well as planning policies
- Identifies climate change and population growth as drivers
- Summarises recent history of stormwater management in SA, including development of SMA, flood inquiries taskforce, Burns Review and Brown Hill and Keswick Creeks Agreement
- Summarises stormwater management roles and responsibilities in SA and in other jurisdictions across Australia

**No recommendations made**

### 2018 Review of stormwater management legislation and policy: un-muddying the water issues paper

**LGA SA**
- Identifies the ambiguity of stormwater management roles and responsibilities as the main ‘policy problem’
- Identifies six key themes (issues) and sought response from local government to confirm / better define them

**The six themes are:**
- What are the ‘on the ground’ problems?
- Lack of clear/agreed definition of stormwater and stormwater management
- No clear benchmarking/no agreement on acceptable risk or acceptable failure rates
- No delineation between retrospective and prospective stormwater management
- No clear/agreed method of identifying failures in stormwater infrastructure following flooding events
- No clear pathway for elevating responsibility from local to State Government
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Organisation</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 2019 | Stormwater Management Workshop | LGA SA | • Summarises outcomes from workshop with LGA members to discuss what is working and what is not and opportunities for improvement in stormwater management legislation and policy (in response to discussion and issues papers)  
• Workshop covered; elements of an ideal stormwater management system and how to get there  
• The elements of an ideal stormwater management system were identified as:  
  – Stronger, clearer leadership  
  – Centralised management body  
  – Fair and equitable service levels  
  – State-wide strategy  
  – Managed community expectations  
  – Stormwater needs to ‘grow up’ (need to move the conversation on to reform)  
  – Stronger regulatory framework  
  – Dedicated and adequate funding (long-term)  
• Provides a summary as well as verbatim notes from workshop of how to achieve these elements  
• Actions to achieve the elements:  
  – Develop a separate framework and governance structure to oversee stormwater across the State including legislation and funding models  
  – Update the business and strategic plan for Stormwater Management Authority and clarify the function/roles and responsibilities of the body  
  – Increase visibility of Stormwater Management Authority  
  – Conduct a needs analysis to better identify client needs  
  – LGA to advocate to the Stormwater Management Authority for improved outcomes for local government  
  – Regulate a set service level standard (e.g. 1 in 5) across all catchments  
  – Determine cost to bring all catchments/Council’s up to that standard  
  – Funding allocation to be transparent and scaled/weighted based on catchment and population needs  
  – Appoint a Director of Stormwater Strategy across the State  
  – Provide stronger technical input into planning (e.g. from Department of Planning, Transport and Infrastructure)  
  – Increase collaboration with Department for Environment and Water and SA Water  
  – Managed Community Expectations  
  – Create a school-based education program to lead |
- There is no need to reinvent the wheel. We can learn from best practice systems and processes around the world such as the United States of America user pays system
- Review the *Water Industries Act 2012* (SA)
- Develop a prioritised and integrated co-funding strategy that is supported by integrated land use, stormwater and transport plans
- Learn from the funding model that is in place for transport infrastructure. This represents a good example of a functioning infrastructure funding model and is a “grown-up” system with a mature relationship across levels of Government
- Better integrate stormwater management into the 30 Year Plan for Greater Adelaide

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<th>n.d.</th>
<th>Stormwater management legislation overview</th>
<th>LGA SA</th>
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|      | Stocktake of relevant responsibilities outlined in various legislation
  - Development Act 1993 (SA)
  - Environment Protection Act 1993 (SA)
  - Environment Protection (Water Quality) Policy 2015
  - Linear Parks Act 2006 (SA)
  - Local Government Act 1999 (SA)
  - Metropolitan Drainage Act 1935 (SA)
  - Natural Resources Management Act 2004 (SA)
  - South Eastern Water Conservation and Drainage Act 1992 (SA)
  - South-Western Suburbs Drainage Act 1959 (SA) | No recommendations |
## Appendix B - Drainage charge basis and amount in other jurisdictions

**Table 4: Drainage charge basis and amount in other jurisdictions**

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Drainage charge basis</th>
<th>Example Amounts (2017/18)</th>
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</table>
| **Melbourne Water**          | Flat rate for properties with different amount for residential or rural, based on the “net annual value” of property for non-residential, with a minimum fee. Charges apply to all properties within its waterway management district. Charges are collected by retail water authorities on behalf of Melbourne Water. Special drainage charges apply for specific schemes – prices are set by the Essential Services Commission for special drainage charges. | Residential - $98.88/year  
Rural - $54.32/year  
Non-residential – rate in the dollar of $0.6633, with a minimum total fee of $126.48/year |
| **Sydney Water**             | Regional drainage charges for properties within a defined drainage area are set by the Independent Pricing and Regulatory Tribunal (IPART) for each water industry entity that provides a drainage service. This includes water industry entities that also provide water and sewerage services such as Sydney Water and Hunter Water. Charges are a flat rate that differs according to the type and size of the property, with a separate price for a “low impact” properties. Residents can apply for a discount (low impact rate) if they stop most of the stormwater leaving the property by storing and reusing it around the home (e.g. a rainwater tank that collects water that is re-plumbed to the house or an infiltration system or rain garden that stops stormwater leaving the property). | Residential multi-premises - $23.34*  
Residential low impact - $23.34*  
Residential standalone - $74.77*  
Non-residential small (0m²-200m²) – $23.34*  
Non-residential medium (201m² - 1,000m²) - $74.77*  
Non-residential low impact - $74.77*  
Non-residential large (1,001m² - 10,000m²) - $435.71*  
Non-residential very large (10,001m² - 45,000m²) - $1,936.52* |
| **Water Corporation of WA**  | The Water Corporation of WA levies a drainage charge for people who live within a drainage area (published on the Corporations website and created under regulation 45 of the Water Services (Water Corporations Charges) Regulations 2014). The State Government reviews and sets the prices each year as part of the State Budget. | For residential properties the drainage charge is based on the capital value of the property such that the amount is: $0.00558 per dollar of the property’s rateable value. e.g. $400,000 x 0.00558 = $2,232/year  
For non-residential properties based on either Gross Rental Value (GRV) or rateable value.  
Drainage service charge is $13.61 per parking bay/ storage unit.  
Drainage service charge is $36.52 per metro strata-titled caravan bay.  
The drainage tariff is 0.318 cents for each dollar of the rateable value.  
The minimum drainage charge for metropolitan non-residential properties is $120.77 |
## Document History

### Revision:

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<th>3.0 Final Draft for consultation</th>
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<tbody>
<tr>
<td>Author/s</td>
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<td>Checked</td>
<td>Nick Clarke</td>
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<td>Approved</td>
<td>Nick Clarke</td>
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<tr>
<td>Description</td>
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