South Australia’s Planning Framework for Water Sensitive Urban Design

Linda Choi and Barnaby McIlrath
South Australia’s planning framework for water sensitive urban design
Statutory Planning for Water Sensitive Urban Design (Project B5.1)
B5.1-3-2016

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<tr>
<td>ACWQIP</td>
<td>Adelaide Coastal Water Quality Improvement Plan</td>
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<tr>
<td>BCA</td>
<td>Building Code of Australia (part of the National Construction Code 2015)</td>
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<td>CRCWSC</td>
<td>Cooperative Research Centre for Water Sensitive Cities</td>
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<td>DAC</td>
<td>Development Assessment Commission</td>
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<td>DEWNR</td>
<td>Department of Environment, Water and Natural Resources</td>
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<td>DPLG</td>
<td>Department of Planning and Local Government (now DPTI)</td>
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<td>DPTI</td>
<td>Department of Planning, Transport and Infrastructure</td>
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<td>DoW</td>
<td>Department of Water</td>
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<td>Development Act</td>
<td>Development Act 2009</td>
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<td>DP</td>
<td>Development Plan</td>
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<td>Development Regulations</td>
<td>Development Regulations 2008</td>
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<td>EP Act</td>
<td>Environment Protection Act 1993</td>
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<td>EPA</td>
<td>Environment Protection Authority South Australia</td>
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<td>EPWQP</td>
<td>Environment Protection (Water Quality) Plan 2003</td>
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<td>IWCM</td>
<td>Integrated/total Water Cycle Management</td>
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<td>MOSS</td>
<td>Metropolitan Open Space System</td>
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<td>NRM</td>
<td>Natural resource management</td>
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<td>NRM Act</td>
<td>Natural Resources Management Act 2004</td>
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<td>NWQMS</td>
<td>National Water Quality Management Strategy</td>
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<td>PBR Consent</td>
<td>Provisional Building Rules Consent</td>
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<td>PDP Consent</td>
<td>Provisional Development Plan Consent</td>
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<td>P&amp;D Fund</td>
<td>Planning &amp; Development Fund</td>
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<td>POS</td>
<td>Public Open Space</td>
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<td>PSP</td>
<td>Precinct Structure Planning</td>
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<td>SA</td>
<td>South Australia</td>
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<td>SAPP Library</td>
<td>South Australian Planning Policy Library</td>
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<td>SMA</td>
<td>Stormwater Management Authority</td>
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<td>SM Agreement</td>
<td>State-Local Government Stormwater Management Agreement</td>
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<td>SMF</td>
<td>Stormwater Management Fund</td>
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<td>SMP</td>
<td>Stormwater Management Plan</td>
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<tr>
<td>SPP Code of Practice</td>
<td>Stormwater Pollution Prevention – Code of Practice for Local, State and Federal Government</td>
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<td>30-Year Plan</td>
<td>The 30-Year Plan for Greater Adelaide</td>
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<tr>
<td>Water for Good</td>
<td>Water for Good – A Plan to Ensure Our Water Future to 2050</td>
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<tr>
<td>SA WSUD Policy</td>
<td>Water Sensitive Urban Design – Creating more liveable and water sensitive cities in South Australia</td>
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<td>WSUD</td>
<td>Water Sensitive Urban Design</td>
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Executive summary

Water Sensitive Urban Design (WSUD) is a well understood concept in South Australia (SA) and endorsed under the following three key documents:

- **The 30-Year Plan for Greater Adelaide – A Volume of the South Australian Planning Strategy** (30-Year Plan) (Department of Planning and Local Government [DPLG] 2010). This is a regional plan for Greater Adelaide and requires WSUD techniques to be incorporated in structure plans, precinct planning for State Significant Areas and new developments to achieve water quality and efficiency;

- **Water Sensitive Urban Design – Creating more liveable and water sensitive cities in South Australia** (SA WSUD Policy) (Department of Environment, Water and Natural Resources [DEWNR] 2013) is a high level policy document which sets out the SA Government’s position on WSUD in a local context and details the role that Government intends to play in maximising the use of WSUD across the State. SA WSUD Policy provides WSUD performance principles and a State-wide stormwater pollutant reduction targets as ‘a step towards establishing WSUD as a standard approach’ in SA (Minister for Sustainability, Environment and Conservation 2013, Foreword); and

- **South Australian Planning Policy Library** (SAPP Library) which contains standard planning provisions upon which councils are encouraged to base their planning schemes (called ‘development plans’ [DPs]). It includes development control requirements for WSUD and stormwater management under the **Natural Resources Policy**. This policy is aimed at minimising harm from developments to the receiving environment by limiting discharge to pre-development conditions and maximising stormwater harvesting opportunities.

Although not alone in this regard, SA councils are given a wide discretion to adopt and apply the abovementioned policies. The 30-Year Plan is a key component of the ‘Planning Strategy’ which is made under the **Development Act 1993** (Development Act). The Planning Strategy consists of ‘documents, plans, policy statements, proposals and other material designed to facilitate strategic planning and co-ordinated action on a State-wide, regional or local level’ (s 22(3)). The Development Act requires SA councils to ensure that all DPs ‘seek to promote the provisions of the Planning Strategy’ (s 23(3)) but there is no legal requirement to do so. Similarly, adoption of the SAPP Library which is a non-statutory guide that sits outside the Planning Strategy, is discretionary while the legal status of the SA WSUD policy is unclear.

At the time of this report, the SA Government was undertaking a planning reform with the **Planning, Development and Infrastructure Bill 2016** (PD&I Bill), which will repeal and replace the Development Act. The PD&I Bill, which passed the Legislative Council on 24 March 2016, is a significant departure from its predecessor as it establishes a range of statutory planning instruments including the ‘Planning and Design Code’ which will incorporate a scheme that includes zones, overlays, policies and rules governing the use and development. Whilst the PD&I Bill does not introduce any new policies or measures on WSUD or urban stormwater management, it prescribes ‘principles of good planning’ which include ‘sustainability principles’ that suggest ‘policies and practices should promote sustainable resource use, reuse and renewal and minimise impact of human activities on natural systems that support life and biodiversity’ (s 14(e)).

In respect to the State’s urban stormwater quality and environmental values, the **Environment Protection (Water Quality) Policy 2015** (EPWQP) has a similar role to Victoria’s **State Environment Protection Policy (Waters of Victoria)**. The EPWQP is an environmental protection policy made under the **Environment Protection Act 1993** (EP Act). However, unlike the Victorian counterpart, the EPWQP does not impose binding obligations on planning authorities in the administration of planning schemes. It also does not apply to the discharge of ‘uncontaminated stormwater’ into any waters or onto land (EPWQP cl 8(2)). The EPWQP refers to the **Stormwater Pollution Prevention – Code of Practice for Local, State and Federal Government** (SPP Code of Practice) (Environment
Protection Authority [EPA] 1998), which applies to public authorities constructing roads and undertaking stormwater management (Schedule 4). For public stormwater systems, it also refers to Chapter 3 of the Australian and New Zealand for Fresh and Marine Water Quality 2000 (ANZECC and ARM CanZ) for environmental value of aquatic ecosystems (cl 7).

Despite the lack of legislative and policy basis for the implementation of WSUD at the State level, many SA councils in metropolitan areas incorporate WSUD policy. Some have adopted the WSUD provisions under the Natural Resource Policy of the SAPP Library into most DPs while others have incorporated WSUD under various other policies. However, the ‘WSUD targets’ contained in the SA WSUD policy are yet to be adopted into the SAPP Library or by any councils. Nine Councils in the Murray-Darling Basic region have however prepared a regional Integrated Water Management Plan Amendment that includes the “WSUD target”, which has been to community consultation and will soon be submitted to the Minister for Planning.

Natural resource management

In SA, the adoption of WSUD policy at a local level is in part driven by the State’s natural resource management (NRM) policies, in particular, the Stormwater Management and Water Policy. They provide support for WSUD and help to underpin the WSUD and Integrated Water Cycle Management (IWCM) policies of the 30-Year Plan and the SA WSUD policy.

The key policy documents which play this role are:

- the Water for Good – A Plan to Ensure Our Water Future to 2050 (Water for Good) (DEWNR 2010). This is SA Government’s water security plan, and proposes a range of actions that apply across the State (p. 14). The actions include diversifying the State’s water sources, improving water conservation and efficiency and modernising the water industry towards a ‘Water-sensitive State’ (p. 18). Water for Good is referenced in the 30-Year Plan as a key policy which supports its measures relating to water;

- the Stormwater Strategy – The Future of Stormwater Management (Stormwater Strategy) (Department of Water [DoW] 2011). This strategy is provided as a ‘road map’ for achieving stormwater related targets in Water for Good. One of its proposed actions includes introducing interim targets for WSUD, ‘ahead of developing and implementing the best regulatory approach to mandate WSUD’ (p. 14). The Stormwater Strategy is referenced in the SA WSUD policy; and

- the Adelaide Coastal Water Quality Improvement Plan (ACWQIP) (Environment Protection Authority [EPA] 2013). As a long-term strategy for water quality improvement for Adelaide’s coastal waters, it promotes the ‘catchment to coast philosophy’ and advocates that WSUD be applied to greenfield sites, infill development sites and the replacement urban infrastructure to reduce stormwater flows and sediment inputs to the coast. The ACWQIP is referenced in the 30-Year Plan and the Adelaide and Mount Lofty Ranges NRM Plan (Adelaide and Mount Lofty Ranges NRM Board 2013).

While the above policies do not impose any binding obligations on planning authorities, the Development Act allows the Minister to amend the DP where a regional NRM board has requested a council to prepare an amendment on the basis of an approved regional NRM plan (s 24(fc)). To this extent, they could provide a broad policy basis for the implementation of WSUD.

In SA, one of the statutory functions of a regional NRM Board is to undertake ‘an active role’ to ensure that any DPs in its region promotes the objects of the Natural Resources Management Act 2004 (NRM Act) and where practicable the DPs and the regional NRM plan form a ‘coherent set of policies’ (NRM Act s 29(1)(ea)).

Implementation guidelines

SA has a limited range of implementation guidelines for WSUD. The South Australian Water Sensitive Urban Design Technical Manual, Greater Adelaide Region, was produced in 2009 by the then Department of Planning and Local Government and is due for a review and update.
The Goyder Institute for Water Research has produced a number of detailed reports on the status of WSUD in SA. These are summarised in section 7.4. A report by the Goyder Institute for Water Research (2014) examining WSUD impediments in SA identifies a number of ‘common themes’ when considering mainstream adoption of WSUD in SA. The report suggests that there is a need to improve a council’s capacity to implement WSUD at a catchment level and understanding of how small-scale implementation of WSUD in urban consolidation context can address catchment level objectives.

**Funding WSUD infrastructure in public realm**

Under the Development Act, SA councils ability to levy development contributions is limited to open space contribution, access roads, hydraulic connections and car parking where onsite provision is not available.\(^1\) The Development Act establishes the Planning & Development Fund (P&D Fund), Council Car Parking Funds and the Urban Trees Fund. The P&D Fund is the most relevant as it is used for certain purposes including acquisition, management and development of land for open space, grants to councils for the provision and development of public land for conservation and recreation and to undertake public works which promote a policy or strategy of the Planning Strategy (Development Act s 81 and Development Regulations 2008 [Development Regulations] Reg 104A). Another relevant fund for WSUD infrastructure is the Stormwater Management Fund (SMF) which has been established under the *State-Local Government Stormwater Management Agreement* (SM Agreement) (Government of SA and the Local Government Association of SA 2013) and Schedule 1A of the *Local Government Act 1999* (LG Act). The SM Agreement commits the State to providing $4 million a year, indexed for 30 years, to the SMF, and the State and councils to considering measures which encourage the implementation of WSUD to avoid overloading any existing drainage systems. The SMF can be used for a range of purposes including for projects or measures relating to water quality or pollution abatement (Development Act Schedule 1A, cl 18(d)).

To apply for funding under the SMF, a council is required to prepare a Stormwater Management Plan (SMP), that is consistent with the objectives of the SM Agreement, and have it approved by the Stormwater Management Authority (SMA) pursuant to schedule 1A of LG Act. However, as this is discretionary, many councils are yet to implement a SMP or integrate it into planning and development controls. Appendix 3 of the report provides a short inventory of councils which have implemented a SMP.

**Thoughts on future WSUD policy development**

Providing a clear legislative and policy basis for the application of WSUD is worthy of further consideration. At present:

- the State's WSUD targets and policy under the 30-Year Plan and Water Sensitive Cities SA is not supported by a clear decision-making framework and legislative requirement for SA councils to apply the policy;

- councils have some discretion to formulate the DPs and wide discretion to interpret DPs and local policies which makes it more likely for WSUD policy to be applied in different ways. The Planning Strategy and the SAPP Library could be given a clearer role and statutory weight to assist in a transition to a more effective and consistent policy framework for WSUD;

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\(^1\) The PD&I Bill expands the scope to levy development contributions by allowing the Minister to establish ‘Infrastructure Delivery Schemes’ for the provision of ‘essential infrastructure’ (s 164). These schemes are to be partly funded by contributions from council or councils whose land falls within the contribution area where the contribution amount is determined by the Minister and the value of rateable land to which the scheme applies (s 177). In turn councils are authorised to ‘reimburse itself for the amounts contributed (or to be contributed)’ by imposing a charge on rateable land in the contribution area (s 180).
• although SA WSUD Policy contains stormwater runoff targets, these are non-binding and SA councils are largely unguided on best planning practice to achieve these targets. Addressing this gap by providing a clearly legislated policy on these matters may help to promote a more consistent application of WSUD policy across the State;

• South Australia’s WSUD Policy requires a strong implementation focus to support SA development industry, councils and other WSUD practitioners applying the policy’s principles and targets;

• the State’s water and stormwater management policies, along with the SMF, could be better integrated into the planning policy framework;

• SA council’s power to levy funds for WSUD through developer contributions is limited and therefore may benefit from a review; and

• the implementation guidelines for WSUD could be further developed and better integrated into the planning policy framework.

The PD&I Bill, will help to address some of the aforementioned issues by providing a clearer legislative basis for the application State planning policy and expanding the scope to levy development contributions. However, the extent to which WSUD targets and policy will be mandated under the reform process remain unclear. Opportunities exist with the proposed Planning and Design Code to integrate WSUD policy and principles

These issues are the subject of further analysis in the final report of the CRC for Water Sensitive Cities (CRCWSC) research project Statutory Planning for Water Sensitive Urban Design (Project B5.1).
Section 1 Introduction

This is a report published by the Cooperative Research Centre for Water Sensitive Cities (CRCWSC) which is a major interdisciplinary and multi-institutional collaborative research initiative aimed at revolutionising urban water management within Australia and overseas. The CRCWSC’s vision for water sensitive cities is that future cities and towns, and their regions, will be sustainable, resilient, productive and liveable.

Water sensitive cities interact with the urban hydrological cycle in ways that: provide the water security essential for economic propriety through efficient use of the diversity of water resources available, enhance and protect the health of watercourses and wetlands, mitigate flood risk and damage and create public spaces that harvest, clean and recycle water. Its strategies and systems for water management contribute to biodiversity, carbon sequestration and reduction of urban heat island effects. (CRCWSC 2015).

This report forms an output of Statutory Planning for Water Sensitive Urban Design (Project B5.1). This project is part of the Water Sensitive Urbanism Program (Program B) in the CRCWSC which focuses on the influence of urban design, planning and land use and development on resource flows across a range of scales. Project B5.1 aims to assess the role that statutory planning legislation, regulation and processes play in facilitating or constraining the adoption of WSUD, and to identify best practice planning policies and planning legislation to facilitate water resilience in cities.

The project is carrying out review of statutory planning framework affecting WSUD across the five Australian cities – Brisbane, Sydney, Melbourne, Adelaide and Perth – which are presented as five separate reports. This report contains the results of the literature review of SA’s statutory planning framework and specifically examines the extent to which WSUD policy is a feature of that planning system. It will inform the final report for Project B5.1, to be published in 2016. The final report will provide a comparative analysis of policy regimes across the five cities and identify best practice policy approaches to WSUD. It will also identify potential opportunities for harmonising WSUD policy across Australian States, given the widely varying approaches which are evident from the review.

While a comprehensive survey of the local policies and DPs in SA is beyond the scope of this review, the report identifies examples of local planning policies and DPs which incorporate WSUD.

This report is focused on the urban development sector and town planning systems. It does not assess risk and governance arrangements relevant to the re-use of stormwater or recycled water. Governance arrangements relating to the public use and consumption of water are addressed in other CRCWSC projects including Better Regulatory Frameworks for Water Sensitive Cities (Project A3.2).
Section 2 Overview

Current legislative framework for planning in SA

Figure 1. Illustration of the main planning instruments which make up the legislative framework for land use planning in SA

The principal Act governing planning and development in SA is the Development Act,\(^2\) which is supported by the Development Regulations.

Notable features established under the Development Act are:

- the Planning Strategy which provides the policy framework for land use planning in SA (s 22);

\(^2\) At the time of this report the SA Government was undertaking planning reform with the PD&I Bill, which passed the Legislative Council on 24 March 2016 and will repeal and replace the Development Act. This is discussed further below.
- DPs, which are SA’s local planning schemes (s 23);
- the Development Policy Advisory Committee whose functions include advising the Minister on any matter relating to planning or development, the design or construction of buildings (s 9);
- Development Assessment Commission (DAC) whose functions include assessing development proposals where appropriate and providing advice and reports to the Minister in relation to any matters or issues that arise (s 11);
- development assessment procedures and matters against which development must be assessed (Part 4);
- the Open Space Contribution Scheme, P&D Fund and the Urban Trees Fund (Part 4, Subdivision 3); and
- the ability to use private certifiers in place of the relevant authority for making assessments and decisions with respect to certain developments (s 89).

**Planning Schemes**

There are no State or regional schemes in SA.

SA councils are provided with the SAPP Library which contains standard planning provisions for DPs but there is no mandatory requirement to adopt them. SA councils, therefore, have a wide discretion to formulate the DP to suit their own individual needs.

**Development assessment**

Part 4 of the Development Act deals with development assessment. Section 32 provides that, subject to the terms of the Act, no development may be undertaken unless the development is an approved development. Section 33 describes two types of consent that may be needed for development approval. These are a ‘Provisional Development Plan Consent’ (PDP Consent) or a ‘Provisional Building Rules Consent’ (PBR Consent). The former relates to assessment against the provisions of the relevant DP, whereas the latter is against the technical requirements of the Building Rules as set out in the Development Regulations, Building Code of Australia (BCA) and the South Australian Housing Code.

Development applications must be assessed against the matters listed under section 33 of the Development Act, but this does not include the Planning Strategy. Although DPs ‘should seek to promote the Planning Strategy’ (s 23(3)), the Planning Strategy is not to be taken into account for the purposes of any application, assessment or decision under Part 4 (s 22(9)).

The Development Regulations set out three broad categories of development – ‘complying’, ‘merit’ and ‘non-complying’. As with other States, a subdivision of land is generally taken to be ‘development’ under the Development Act. Application for a subdivision is lodged with the DAC but usually assessed by the council by applying the relevant planning controls under the DP.

Generally, a local council is the relevant authority for assessing proposed developments in its municipality. Where the proposed development is of a ‘prescribed kind’ within an area where a regional development assessment panel has been established, the regional development assessment panel is the relevant authority.

DAC is the relevant authority for the classes of development listed under section 33(1)(b).
In SA, subject to Part 12 of the Development Act, a private certifier may exercise the powers of a relevant authority – meaning, make any assessment, require information, give consent or approval or make decision in relation to a proposed development (s 89).

Planning Strategy

Created under section 22 of the Development Act and reviewed every 5 years, the Planning Strategy contains the State Government’s broad vision for land use and development in SA.

The Planning Strategy is non-binding and is to be taken as ‘an expression of policy formed after consultation within government and within the community, and does not affect rights or liabilities (whether of a substantive, procedural or other nature)’ (Development Act s 22(8)). The Planning Strategy is also not to be taken into account for the purposes of any development assessment or decisions under Part 4, other than Division 2 of that Part (Development Act s 22(9)). Nonetheless, the State Government expects all DPs to align with its policy direction (Department of Planning, Transport & Infrastructure [DPTI] 2015).

The Planning Strategy comprises of a number of volumes covering different geographic regions of the State and objects of the Acts listed under the Development Act. DPTI suggests that these are designed to cover a full range of social, economic and environmental issues and ‘informs and guides policies both across Government and local area DPs.

The 30-Year Plan, which pertains to the Greater Adelaide region, is the key document in the Planning Strategy and most relevant for WSUD. The 30-Year Plan is supported by the SAPP Library which is a non-statutory document that is not part of the Planning Strategy.

WSUD policy framework in SA

WSUD is endorsed under the following non-statutory State policies. Figure 2 provides an illustration of SA’s policy framework for WSUD:

- the 30-Year Plan, which purports to require WSUD to be incorporated in structure plans, precinct planning for State Significant Areas and new developments;
- SA WSUD Policy – a high level policy document which sets out the SA Government’s position on WSUD in a local context and detail the role that Government will play in collaboration with other stakeholders to maximise the use of WSUD approaches. This document contains WSUD performance principles and a State-wide stormwater pollutant load reduction targets; and
- the SAPP Library, which contains development control requirements for WSUD and stormwater management under the Natural Resources policy. This policy is aimed at minimising harm from developments to the receiving environment by limiting discharge to pre-development conditions and maximising stormwater harvesting opportunities.

The above policies are partly underpinned by the State’s water security plan, Water for Good, the Stormwater Strategy and the ACWQIP which sit outside the planning framework. All three documents expressly endorse WSUD and are referenced in the 30-Year Plan and Water-Sensitive Cities in SA. Details of these policies are discussed further in section 5.2.
In respect of the State’s urban stormwater quality and environmental values, the EPWQP has a similar role to Victoria’s State Environment Protection Policy (Waters of Victoria). However, unlike the Victorian counterpart, the EPWQP does not impose binding obligations on planning authorities in the administration of planning schemes. For authorities constructing roads and ‘an authority undertaking stormwater management’, the EPWQP requires them to comply with the SPP Code of Practice (cl 39) which provides general performance targets and technical guidance.

Despite the lack of clear legislative and policy basis for the implementation of WSUD, many SA councils in metropolitan areas have adopted WSUD policy into their DPs. Examples of such DPs and local policies are discussed in section 5.4 and listed in Appendix 2.

Compared to other States, SA has a limited range of implementation guidelines for WSUD. The Goyder Institute for Water Research has produced a number of detailed reports on the status of WSUD in SA.

**Funding WSUD infrastructure in the public realm**

Under the Development Act, development contributions are limited to open space, access roads and hydraulic connections and car parking where onsite provision is not available. The Development Act establishes a range of funds with the P&D Fund being most relevant for WSUD. The P&D Fund is used for certain purposes including acquisition, management and development of land for open space, grants to councils for the provision and
development of public land for conservation and recreation and to undertake public works which promote a policy or strategy of the Planning Strategy (Development Act s 81 and Development Regulations reg 104A).

Under the Open Space Contribution Scheme, if land is being subdivided into more than 20 allotments and 1 or more of the allotments is less than 1 hectare, 12.5% of the area may be required to be vested in the council to be held as open space and make financial contribution to the P&D Fund (s 50).

Pursuant to the Development Regulations (Reg 56) any contribution in lieu of the POS contribution is required to be as follows:

- for each new allotment or strata lot within Metropolitan Adelaide or Outer-Metropolitan Adelaide that does not exceed 1 hectare, $6,488; and
- for each new allotment or strata lot that does not exceed 1 hectare within Regional South Australia, contribution required, $2,849.

Of potential significance to WSUD infrastructure funding is the establishment of the SMF under the SM Agreement and Schedule 1A of the LG Act. The SM Agreement commits the State to providing $4 million a year, indexed for 30 years, to the SMF, and requires the State and councils to consider measures which encourage the implementation of WSUD to avoid overloading any existing drainage systems. Schedule 1A of the LG Act establishes the SMA who may require a council to prepare a SMP which is consistent with the objectives of the SM Agreement. Once approved, the SMP may provide a basis for seeking funding from the SMF, which can be used for a range of purposes including for projects or measures relating to water quality or pollution abatement (Development Act Schedule 1A, cl 18(d)).

Proposed planning reform

At the time of this report, the SA Government was undertaking a planning reform with the PD&I Bill which passed the Legislative Council on 24 March 2016. The PD&I Bill establishes a range of statutory planning instruments and expands the scope to levy developer contributions. This is discussed further in Section 3 below.
Section 3 Legislative framework for planning in SA

3.1 Development Act 1993

The Development Act is the principal Act governing planning and development in SA.

Purpose

The objects of the Development Act (s 3), which include ecologically sustainable development, are as follows:

The object of this Act is to provide for proper, orderly and efficient planning and development in the State and, for that purpose —

(a) to establish objectives and principles of planning and development; and
(b) to establish a system of strategic planning governing development; and
(c) to provide for the creation of Development Plans—

(i) to enhance the proper conservation, use development and management of land and buildings; and
(ii) to facilitate sustainable development and the protection of the environment; and

(iia) to encourage the management of the natural and constructed environment in an ecologically sustainable manner; and

(iii) to advance the social and economic interests and goals of the community; and
(d) to establish and enforce cost-effective technical requirements, compatible with the public interest, to which building development must conform; and
(e) to provide for appropriate public participation in the planning process and the assessment of development proposals; and

(1) to promote or support initiatives to improve housing choice and access to affordable housing within the community; and
(f) to enhance the amenity of buildings and provide for the safety and health of people who use buildings; and
(g) to facilitate the adoption and efficient application of national uniform building standards; and national uniform accreditation of buildings products, construction methods, building designs, building components and building systems.

Planning instruments

The Development Act establishes two planning instruments – the Planning Strategy and the DPs with the latter being SA’s local planning schemes.

3 The PD&I Bill, which will repeal and replace the Development Act, passed the Legislative Council on 24 March 2016
The Planning Strategy outlines the State Government’s broad vision for land use and development of SA and ‘may incorporate documents, plans, policy statements, proposals and other material to facilitate strategic planning and coordinated action on a state-wide, regional or local level’ (s 22(3)).

Under the Development Act, the Planning Strategy is not a legal document but an expression of policy formed after consultation within government and within the community and does not affect rights or liabilities (whether of a substantive, procedural or other nature) (s 22(8)).

The Planning Strategy will not prevail over any inconsistencies in local or regional DPs (s 22(10)). Consequently, in SA’s planning system, DPs are the only statutory instruments which create binding obligations on decision-makers and proponents for planning and development in the State.

Responsible Authorities and Planning Authorities

The Development Act establishes two statutory bodies – the DAC (s 10) and the Development Policy Advisory Committee (s 8).

The DAC’s functions include assessing specific development proposals where appropriate and providing advice and reports to the Minister in relation to any matters or issues that arise through it (s 11). The DAC’s jurisdiction includes (DAC 2015):

- Certain developments of significant regional impact eg. new landfill facilities, railway infrastructure, commercial forestry.
- Certain types of development in key areas of the State, including the Hills Face Zone, the River Murray Flood Zone, the Adelaide Park Lands, various Conservation Zones and the Adelaide Hills water catchments, land within irrigation areas, Port Adelaide Centre Zone, Osborne Maritime Policy Area, Bowden Urban Village, the MFP (The Levels) Zone.
- Most Housing SA applications.
- Certain types of development by councils themselves or involving council land, and applications where the council requests (and the Minister for Planning agrees) that the DAC be the assessing authority.
- Development in the City of Adelaide greater than $10million. In addition, the Commission acts as if it was a council for planning and building approvals in areas of the state outside a council area (such as the Far North of the state, and many off-shore islands).
- In its decision-making role, the Commission:
  - operates under the same law, and must apply the same Development Plan policy as would a council development assessment panel
  - is subject to the same appeal provisions, and has the same enforcement powers as a council development assessment panel
  - normally handles planning issues itself, but delegates building assessment to the relevant council, and
  - can establish delegated committees for certain matters or development within particular areas.
The DAC is also involved in assessing ‘Major Development’ proposals declared under the Development Act (s 46).

As in other States, the Minister or the council may amend the DP (s 24) and a council is generally the relevant authority for planning and development in its local area (s 34).

Development assessment

Developments are assessed and approved under Part 4, Subdivision 1 of the Development Act. Subject to the terms of the Act, no development may be undertaken unless the development is an approved development (s 32). Section 33 describes the types of consent that may be needed for development approval. Generally, these fall into a PDP Consent or a PBR Consent. The former relates to assessment against the provisions of the relevant DP whereas the latter is against the technical requirements of the Building Rules as set out in the Development Regulations, BCA and the South Australian Housing Code.

Section 4 of the Development Act and Schedule 2 of the Development Regulations define what constitutes ‘development’ which includes subdivision of land.

The relevant authority must assess a development application against the matters listed under section 33 of the Development Act (see Figure 3 below), which include the provision of the appropriate DP and the ‘Building Rules’ but excludes the Planning Strategy.

<table>
<thead>
<tr>
<th>Matters against which development must be assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) A development is an approved development if, and only if, a relevant authority has assessed the development against, and granted a consent in respect of, each of the following matters (insofar as they are relevant to the particular development):</td>
</tr>
<tr>
<td>(a) the provisions of the appropriate Development Plan (development plan consent);</td>
</tr>
<tr>
<td>(b) the provisions of the Building Rules (building rules consent);</td>
</tr>
<tr>
<td>(c) in relation to a proposed division of land (otherwise than under the Community Titles Act 1996 or the Strata Titles Act 1988)—the requirement that the following conditions be satisfied (or will be satisfied by the imposition of conditions under this Act):</td>
</tr>
<tr>
<td>(i) the allotments resulting from the division may be lawfully used for the purposes proposed by the applicant;</td>
</tr>
<tr>
<td>(ii) open space will be provided, or a payment will be made in accordance with the requirements imposed under this Act;</td>
</tr>
<tr>
<td>(iii) adequate provision is made for the creation of appropriate easements and reserves for the purposes of drainage, electricity supply, water supply and sewerage services;</td>
</tr>
<tr>
<td>(iv) the requirements of a water industry entity under the Water Industry Act 2012 identified under the regulations relating to the provision of water supply and sewerage services are satisfied;</td>
</tr>
<tr>
<td>(iva) where land is to be vested in a council or other authority—the council or authority consents to the vesting;</td>
</tr>
<tr>
<td>(v) requirements set out in regulations made for the purposes of this provision are satisfied;</td>
</tr>
</tbody>
</table>

Figure 3. Development Act, section 33

The Development Act establishes three broad categories of development (s 35):

- ‘Complying development’ – if a proposed development is of ‘a kind described as a complying development’ under the Development Regulations or the relevant DP. Complying development must be granted a DP consent (s 35(1)).
• ‘Non-complying development’ – a development that, ‘despite various aspects of the development meeting any criteria for the development to be complying development, from an overall perspective, the development falls within the category of non-complying development’ (s 35(1e)).

• ‘Merit development’ – a proposed development that does not fall into the above two categories. This is assessed on its merit taking account the provisions of the relevant DP (s 35(5)).

These categories are further prescribed by the Development Regulations under:

• Schedule 1A which sets out development that does not require DP consent;
• Schedule 2 which sets out additional acts and activities constituting development;
• Schedule 3 which sets out acts and activities which are not development; and
• Part 1 and 2 of Schedule 4 which sets out the forms of development and building works deemed to be complying. Councils can also choose to expand the list of complying development within the DP. When a development application falls under the list in the complying development category under the Development Regulations or the relevant DP; the relevant authority must grant a PDP or a PBR consent if it is building work listed in Part 2 of Schedule 4. PBR is further discussed below under Residential Code (R Code) development;

Complying Development – Residential Code Development

A subset of complying development also exists as R Code development which requires compliance with design standards set out in the Development Regulations rather than the relevant DP. The R Code development is contained within Schedule 4 and Clause 2A and 2B of the Development Regulations and includes:

• Common residential works and structures such as sheds, carports, verandas and rainwater tanks;
• Single-storey additions and alterations to existing dwellings; and
• New single-storey and two-storey detached and semi-detached dwellings.

R Code development means any development that is complying development under clause 1(2) or (3), 2A or 2B of Schedule 4 of the Development Regulations.

The R Code was introduced by the State Government in 2009 (with various updates since) with the aim of establishing a simpler planning and building approvals process for home construction and renovation. It sets out ‘tick-box’ assessment criteria known as ‘Performance Controls’ for complying development. These include issues such as location, height, setback and site coverage. If a development proposal meets all the criteria, it will be approved within 10 days.

In SA, private certifiers may undertake planning assessments of the R Code developments (Development Act Part 12). The criteria prescribed in Schedule 4 1(2), 1(3), 2A or 2B of the Development Regulations allows a council or a private certifier to assess applications that comply with the Code. This applies only to applications for DP consent and does not apply in certain restricted areas of the state such as:

• heritage locations, local heritage places, State heritage places, State heritage areas and historic conservation zones;
• the Hills Face Zone of the Adelaide Hills;
• flood-prone areas (unless the applicant can demonstrate that the development meets the flood protection standards of the relevant development plan); and

• where Schedule 8 referrals to a prescribed agency are required.

**Development contributions**

See Section 6 ‘Public infrastructure funding and deliver’ of the report.

**Strategic Directions Reports**

SA councils are, ‘from time to time’, required to prepare a report under Subdivision 3, section 30 of the Development Act.

The report must address the strategic planning issues within the council area with particular reference to the Planning Strategy and any other policy or document prescribed by the Development Regulations. It must also set the council’s priorities for a range issues listed under section 30(c) which include infrastructure planning (both physical and social infrastructure).

**3.2 Proposed planning reform**

The SA Government is proposing to repeal and replace the Development Act with the PD&I Bill which passed the Legislative Council on 24 March 2016. The PD&I Bill provides a significant overhaul of the planning laws in SA and establishes a number of matters including:

• ‘good planning principles’ which includes ‘sustainability principles’ that suggest policies and ‘planning practices should promote sustainable resource use, reuse and renewal and minimise the impact of human activities on natural systems that life and biodiversity’ (section 14);

• State Planning Commission which is to act as the ‘State’s principal planning advisory and development assessment body’ (section 22);

• a range of statutory planning instruments including State planning policies, Regional plans, Planning and Design Code which will the Minister will prepare and maintain and Design standards (Part 5);

• ‘planning consent’ which includes three categories of development – ‘accepted development’. ‘code assessed development’ and ‘impact assessed development’; and

• expanded scope to levy developer contributions by allowing the Minister to establish Infrastructure Delivery Schemes for the provision of ‘essential infrastructure’ (s 164). These schemes are to be partly funded by contributions from council or councils whose land falls within the contribution area where the contribution amount is determined by the Minister and the value of ratable land to which the scheme applies (s 177). In turn councils are authorised to reimburse itself for the amounts contributed (or to be contributed) by imposing a charge on rateable land in the contribution area (s 180).

The PD&I Bill does not contain any express references to WSUD or urban stormwater management.

**3.3 Other relevant Acts**

In addition to the Development Act, the following Acts (listed in alphabetical order) are relevant to planning and development in SA.
**Environment Protection Act 1993**

The EP Act establishes the EPA and the EPWQP. Refer section 0 for further discussion on the EPWQP.

**Local Government Act 1999**

The LG Act establishes the role and functions of a council. Relevantly, this includes undertaking work for the purpose of stormwater management or flood mitigation (Schedule 1A, Division 6, cl 21). The LG Act also establishes the SMA which may require councils to prepare a SMP that could have some bearing on development assessments and WSUD infrastructure funding (see section 0 below).

To amend a DP under the Development Act, a council must prepare a ‘Development Plan Amendment’ that must include an assessment of the extent to which the proposed amendment accords with relevant infrastructure planning identified by the council through strategic planning or other processes undertaken by the council under the LG Act (s 25).

**Metropolitan Drainage Act 1935**

This Act authorises the construction of drainage works to land periodically flooded by the River Torrens, the River Sturt, and the Keswick and Brownhill Creeks, and for other purposes.

**Public Environmental Health Act 1987**

This Act sets the requirement for establishing a rainwater harvesting and reuse system with regards to health issues.

**River Murray Act 2003**

Under section 22 of the Development Act, the Planning Strategy will be taken to include the objects of this Act.

**Urban Renewal Act 1995**

This Act provides for the planning and development of specified areas within the State and establishes the Urban Renewal Authority. Under it, the Minister for Housing and Urban Development may establish precincts for the purpose of urban renewal or redevelopment at the request of a council or other person or body.

**Water Resources Act 1997**

This Act allows the Minister for the Environment and Natural Resources to declare a levy for a water license to take water from a prescribed ‘watercourse’, lake or well or to take surface water (s 122). This levy is not charged on any stock and domestic water allocations (DEWNR 2015).

The Minister may also declare a special levy to raise money for a particular purpose related to the management of a prescribed water resource (s 123).

**Waterworks Act 1932**

This Act authorises the responsible Minister and SA Water to supply water to urban and regional communities and to provide safe drainage of wastewater, rating and pricing arrangements, and the construction of necessary infrastructure.
3.4 Subordinate legislation and instruments

Planning regulations

The Development Act is supported by the Development Regulations which outlines the procedural requirements for DP amendments, development approval, special provisions relating to land division and building works.

As discussed in section 3.1 above, Development Regulations also prescribe the development assessment categories.

Planning scheme structure

State

There is no State planning scheme in SA but as outlined above, councils are encouraged to prepare the DPs based on the SAPP Library.

Regional

There are no regional planning schemes in SA.

Local

DPs may be amended by the council or the Minister under the Development Act (s 23). Unlike other States, SA does not require councils to incorporate standard planning provisions into the local planning schemes but ‘encourages’ best policy application and consistency of the DPs across the State by providing councils with the SAPP Library (Government of SA 2015).

Section 23(3) of the Development Act states that a DP ‘should seek to promote the provisions of the Planning Strategy’ and may set out or include:

(a) planning or development objectives or principles relating to—

(i) the natural or constructed environment and ecologically sustainable development;

(ii) social or socio-economic issues;

(iii) urban or regional planning;

(iv) the management or conservation of land, buildings, heritage places and heritage areas;

(v) management, conservation and use of natural and other resources;

(vi) economic issues;

(vii) the provision of affordable housing within the community;

(b) provisions enabling the transfer of development rights between sites;

(c) material prescribed by the regulations;

(d) such other material relating to planning or development as may be appropriate.
A DP may adopt any plan, policy, standard, document or code made under the Development Act or other Act or by a body prescribed by the Development Regulations (s 23(5)).

Despite the wide discretion given to councils to formulate their DPs, a review of the metropolitan DPs suggests that many are generally based on the SAPP Library and a standard format that is divided into two sections – ‘Advisory’ and ‘Assessment’. The former includes information on the strategic setting which outlines the relevant Planning Strategy (as it relates to the local area) and council’s own local strategic policies. The latter relates to a range of social, environmental, and economic development issues to establish the development standards to be applied for assessment.

Under the Development Act, an amendment to a DP may also be prepared by the council or the Minister acting at the request of the council where a regional NRM board has requested a council to proceed with an amendment on the basis of a regional NRM plan approved under the NRM Act (s 24(1)(fc)).

3.5 Precinct structure planning

Precinct structure planning (PSP) requirements are discussed in section 5.3.

3.6 Subdivision of land

General requirements

Under the Development Act, provisions regulating proposed subdivision applications require (s 33(1)(c)):

- open space or payments to be made in accordance with the requirements under the Development Act (s 33(1)(c)(ii));
- adequate provision of easement and reserves for the purposes of drainage, electricity supply, water supply and sewerage services (s 33(1)(c)(iii)); and
- the developer to meet the requirements of a water corporation under the Water Industry Act 2012 in relation to water supply and sewerage services (s 33(1)(c)(iv)).

Assessment of subdivision of land which creates more than 4 allotments is lodged with the DAC. The DAC then seeks comments from various State agencies which are responsible for providing utilities and services and forwards the application and agency comments to the relevant authority (always the council unless the land is not situated in a council area). The council assesses the application against the relevant provisions of the DP.

If a council or regional development assessment panel is the relevant authority for a subdivision application, a decision on the application must not be made until a report from the DAC in relation to the matter has been received (Development Regulations Reg 29).

Division 2 of the Development Regulations further prescribes the requirements for subdivision of land. These relate to construction of roads, bridges, drains and services.

The formal process of registering a plan of subdivision is prescribed under Part 19AB, Division 2 of the Real Property Act 1886.
Public open space planning

Requirement for public open space (POS) is prescribed under section 50 of the Development Act and the Development Regulations. Where an application under Part 4 of the Development Act involves a subdivision of land into more than 20 allotments, and one or more allotments is less than one hectare in area, the council may require that up to 12.5% of relevant area to be POS. Alternatively or in addition to the POS contribution, the applicant may be required to make a contribution prescribed by the Development Regulations.

See section 4.3 for detailed discussion on POS requirements.

All land shown on a plan of subdivision as a street, road, thoroughfare, reserve or other open space vests in the relevant council upon deposit of the plan for registration (Real Property Act 1886 s 223LF).

Drainage easements

A subdivision must adequately provide for the creation or appropriate easements for the purpose of drainage, electricity supply, water supply and sewerage services (Development Act s 33(1)(c)).

Any land that is delineated as an easement on the plan of subdivision in favour of a water industry for sewerage or water supply purpose or council of the Crown for drainage purpose, vests in the favouring entity (Real Property Act 1886 s 223LG). This entitles the entity to carry out a range of works and to enter the land for those purposes (Real Property Act 1886 s 223LG).

Construction and maintenance of works

Division 2 of the Development Regulations prescribes the requirements for subdivision of land relating to construction of roads, bridges, drains and services. Construction is to be in accordance with ‘recognised engineering practice’ (Reg 54) but does not prescribe a maintenance period.

Under a Land Development Agreement, which is a contract between SA Water and a developer to construct an extension of the main (drinking water, recycled water and waste water infrastructure) by an accredited civil contractor, infrastructure works are subject to a 12 months defects liability period (SA Water Fact Sheet, Extension of Mains (drinking water, recycled water and wastewater mains) by Land Developer Agreement).

3.7 Drainage and stormwater regulation

Ownership of drains

Stormwater drains can be owned by individual property owners, councils or water authorities. Ownership of municipal drains is established under a number of Acts. Under the LG Act, this is created by the virtue of vesting all public roads of the municipality in the council and that public infrastructure in, on, across, under or over a public road remain the property of the provider or authorising council of that infrastructure (s 209). Public infrastructure means infrastructure in connection with a range of services including drainage (s 209(4)).

Stormwater regulation

Section 50 of the Water Industry Act 2012 prohibits a person from unlawfully interfering with, connecting to or disconnecting from the water infrastructure which includes a common drain. It also prohibits unauthorised stormwater discharges to sewer to prevent flooding.

The Plumbers, Gas Fitters and Electricians Act 1995 regulates license and registration requirements for ‘draining work’ which includes works to stormwater drains (s 3).
The *South Western Suburbs Drainage Act 1959*, which governs the South West of the State, empowers the Minister to construct drains. Once a major drain or part of a major drain is completed, the relevant council is notified and becomes responsible for maintaining the drains (s12).

The NRM Act empowers a regional NRM board to construct, maintain or remove any infrastructure and undertake any other form of work including work for the purpose of stormwater management or flood mitigation, any testing, monitoring or evaluation (s 31).

**Discharge quality**

Responsibility for monitoring and managing stormwater discharge quality is dispersed across SA Water, local councils and regional NRM Boards.

The EPA administers the EP Act and the EPWQP and is provided to protect the aquatic environments and surface water in SA. The EP Act prohibits the discharge of contaminated stormwater to the environment but as is the case in some other States, the EPQWP does not apply to the discharge of stormwater from a public stormwater system (cl 4(2)).

### 3.8 Building regulation

SA’s building regulation is contained in the BCA and the *Minister’s Specifications* which relate to specific building issues that require attention in SA and referenced in the SA’s variations to the BCA.

The BCA and the Minister’s Specifications are adopted under the Development Regulations as part of the ‘Building Rules’ (Reg 4 and Part 12). Building Rules means any code or regulations under the Development Act (or adopted under it) that regulate the performance, standard or form of building works and includes any standard or document adopted by or under those codes or regulations, or referred to in those codes or regulations (Development Act s 4).

Currently, there are 12 Minister’s Specifications listed under the State Government’s website. These cover a range of issues including fire safety requirements, swimming pool safety, and construction requirements for the control of external sound and on site retention of stormwater.

WSUD related building and plumbing regulations including the Minister’s Specification for on site retention of stormwater are discussed under section 5.6 below.
Section 4 Land use policy framework in SA

4.1 Planning Strategy

The Planning Strategy is created by the Minister under the Development Act and outlines the State Government's broad vision for land use and development in SA. While the Planning Strategy lacks binding status (as discussed in section 3.1), the State Government expects all DPs to align with its policy direction.

The Planning Strategy comprises of a number of volumes covering different geographic regions of the State and a range of social, economic and environmental issues to 'inform and guide policies both across Government and local area DPs' (DPTI). At present the Planning Strategy consists of:

- the 30-Year Plan;
- Objects of the Acts listed under section 22(3a) of the Development Act;
- Eyre and Western Region Plan (DPLG 2012);
- Far North Region Plan (DPLG 2010);
- Kangaroo Island Plan (DPLG 2011);
- Limestone Coast (DPLG 2011);
- Mid North Region Plan (DPLG 2011);
- Murray Mallee Region Plan (DPLG 2011);
- Yorke Peninsula Regional Land Use Framework (DPLG 2007); and
- the Greater Mount Gambier Master Plan (DPLG 2008)

The 30-Year Plan, which is a key part of the Planning Strategy, suggests that it 'will have a statutory effect, that is, DPs will be required to be consistent with the land-use policies of the Plan.' (DPLG 2010, p. 25). At the time of this report this has not been implemented and the 30-Year Plan was being reviewed.

4.2 Natural Resource Management Framework

NRM and catchment planning in SA is primarily governed by the NRM Act. The NRM Act applies to the management of water, soils and pest animal and plant control across the State.

Its objects include achieving 'Ecologically Sustainable Development (ESD) in the State by establishing an integrated scheme to promote the use and management of natural resources' and includes (s 7).

...to assist in the achievement of ecologically sustainable development in the State by establishing an integrated scheme to promote the use and management of natural resources in a manner that –
...provides for the protection and management of catchments and the sustainable use of land and water resources and, insofar as is reasonably practicable, seeks to enhance and restore or rehabilitate land and water resources that have been degraded.

The NRM Act establishes a NRM Council and eight regional NRM boards whose responsibilities include ‘undertaking an active role with respect to the management of natural resources within its region’, preparing and implementing State and Regional NRM plans and water allocation plans (s 29).

On ground development and implementation of regional plans may be delegated to NRM groups established by the NRM boards (s 43). Both the groups and the boards have general powers to ‘provide for the care, control, management, conservation or preservation of any natural resource’ (s 30(2), s 54(2)). A Regional NRM Board may amend a NRM plan to achieve consistency with any other plan under the NRM Act or to give effect to the provisions of an SMP under Schedule 1A of the LG Act (s 89(1)). Another function of a regional NRM Board under the NRM Act is to undertake ‘an active role’ in ensuring that any DPs applying within its region promotes the objects of the NRM Act and ‘insofar as is reasonably practicable’, those DPs and the regional NRM plan forms a ‘coherent set of policies’ (s 29(1)(ea)). To this end, when a DP amendment is proposed under the Development Act, a regional NRM Board is to work with the council or the Minister if the amendments are proposed by him/her (s 29(1)(ea)).

Conversely the Development Act allows the Minister to amend a DP where a regional NRM board has requested a council to proceed with an amendment on the basis of an approved regional NRM plan under the NRM Act and the council has failed to act (Development Act s 24(1)(fc)). The council must also refer the proposed amendment to any government Department or agency that has a ‘direct interest in the matter’ (Development Act s 25(7)).

A NRM board is also given special powers to carry out works and require private land owners who fail their statutory duty of care for resource management\(^4\) to prepare and implement action plans.

A key NRM policy is *Our Place, Our Future, State Natural Resources Management Plan 2012–2017* (NRM Council 2012) which provides high level vision, goals and priorities for the State.

Of relevance to WSUD is the *Adelaide and Mount Lofty Ranges Natural Resources Management Plan* (Adelaide and Mount Lofty NRM Board 2013) which suggests that future urban development should include WSUD principles and promote the uses of native landscape to reduce impacts and improve conditions of natural landscape (p. 86). Details of the *Adelaide and Mount Lofty Ranges Natural Resources Management Plan* is discussed further in section 0 below. It also references *Water for Good* which seeks a number of key outcomes, including:

- stormwater recycling with harvesting targets for whole State and Adelaide;
- wastewater recycling and water saving targets; and
- planning outcome contained under Part 6, where mandatory WSUD for new residential and commercial urban developments ‘dovetails with the 30-Year Plan’ (p. 127). This is discussed in section 5.2 below).

### 4.3 Environment Protection (Water Quality) Policy 2015\(^5\)

The EPWQP is made pursuant to the EP Act and has a range of functions relating to the protection of the SA waters. The current version came into force in 2015 and supersedes the 2003 version of the EPWQP.

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\(^4\) section 9 requires a person to act reasonably in relation to the management of natural resources within the State

\(^5\) The EPWQP was gazetted in August 2015 and supersedes the Environment Protection (Water Quality) Policy 2003.
Subject to section 7 of the EP Act, the EPWQP applies to all surface waters and underground waters including water within a public stormwater disposal system or irrigation drainage channel, but excludes (cl 8):

- water within a water reticulation system;
- water within a sewage system of wastewater management system;
- the discharge of stormwater from a public stormwater disposal system into any waters by a government or public authority responsible for the system; and
- the discharge of ‘uncontaminated’ stormwater into any waters.

In relation to stormwater, the EPWQP includes:

- requirement for authorities constructing roads to comply with the code titled *Stormwater Pollution Prevention Code of Practice for Local, State and Federal Government* (EPA 1998) (Schedule 4);
- requirement for developers to comply with the *Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry 1999* (EPA) (Schedule 4);
- requirement for stormwater management authorities to apply the *Stormwater Pollution Prevention General Code of Practice for Local, State and Federal Government* (EPA 1998) (Schedule 4);
- compliance to the codes, standards, guidelines or other documents prescribed in Schedule 4 if they contemplate measures that are expressed as mandatory in relation to the activity’ (cl 9(e)) and compliance may be enforced by the issue of Environment Protection Order (Part 2);
- ‘aquatic ecosystem’ and ‘recreation and aesthetics’ as prescribed environmental values for public stormwater systems (Schedule 1) and refers to a trigger value for an indicator specified in Chapter 3 of the *Australian and New Zealand for Fresh and Marine Water Quality 2000* (ANZECC and ARMCANZ) for ‘aquatic ecosystems’ (cl 7); and
- Regulation 14 of the Development Regulations provides that environment protection policies under the EP Act are ‘prescribed plans’ for the purposes of section 29(1)(b) of the Development Act. This means that there is a discretionary power vested in the Planning Minister to ensure DPs are consistent with the EPWQP. However, the express terms of the EPWQP are not mandatory or expressly enforceable for decision making under the under the Development Act.

### 4.4 Environmental Offsets

SA does not have an environmental offset scheme which relates to water quality and applies across the State. However, there is evidence to suggest a Water Quality Levy has been applied locally by a council to allow an development offset which does not meet the council’s water quality objects. See section 5.4 for further discussion.

### 4.5 Non-statutory policies and guidance

The Planning Strategy is supported by the SAPP Library which provides a set of planning policies and zones for adoption into the DPs.

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6 Section 29(1)(b) empowers the Planning Minister to amend a DP in accordance with a plan, policy, standard or code which falls within a class prescribed by the regulations. This power is retained under section 73 of the PD&I Bill.
Other general guides related to planning in SA include:

- SAPP Library Terminology List (DPLG 2011)
- Local Government Planners’ Kit (Local Government Association 2014)
- Land Division – How best practice land division can contribute to household energy efficiency (DPLG 2010)
- Guide to Development Plans and Amendments (DPTI 2013)
- Desired Character Statements (DPLG 2010)
- Correcting Errors in Development Plans Using Section 29 of the Development Act 1993 (DPLG 2009)
- Aquaculture policy (DPLG 2010)
- Understanding Residential Densities Handbook (DPLG 2006)
- Design Guidelines For Reducing Noise and Air Impacts From Road Rail and Mixed Land Use (DPTI 2012)
- Guide to Development Assessment – An Integrated Planning and Development Assessment System for South Australia (Planning SA).
Section 5  WSUD policy framework

5.1 WSUD definitions in South Australia

WSUD is defined in SA as ‘an approach to urban planning and design that integrates the management of the total water cycle into the land use planning and development process’ under Water for Good, Water-Sensitive Cities in SA, the SAPP Library and the 30-Year Plan.

This definition is expanded under the 30-Year Plan as (p. 223):

*an approach to urban planning and design that integrates the management of the total water cycle into the urban development process. It includes:

- the integrated management of groundwater, surface run-off (including stormwater), drinking water and wastewater to protect water-related environmental, recreational and cultural values
- the storage, treatment and beneficial use of run-off
- the treatment and re-use of wastewater
- using vegetation for treatment purposes, water-efficient landscaping and enhancing biodiversity
- using water-saving measures inside and outside domestic, commercial, industrial and institutional premises to minimise requirements for drinking and non-drinking water supplies.

*WSUD incorporates all water resources, including surface water, groundwater, urban and roof run-off, and wastewater.*

5.2 Key WSUD policies in South Australia

Summary

The key planning policies which promote the principles of WSUD are:

- the 30-Year Plan, which is a volume of the Planning Strategy that purports to require incorporation of WSUD techniques in new developments;
- the Water-Sensitive Cities in SA’ which is a high level policy that sets out the SA Government’s position on WSUD in a local context’ and detail the role that Government will play in collaboration with other stakeholders to maximise the use of WSUD approaches. It also contains WSUD performance principles and targets including a State-wide pollutant load reduction target; and
- the SAPP Library which incorporates WSUD under its *Natural Resources Policy* objectives.

As discussed above, provisions under these documents have no binding effect unless they have been applied as part of the DP.

The above polices are partly underpinned by the following policies which sit outside the planning framework:
• Water for Good (Government of SA 2010);
• Stormwater Strategy (DEWNR 2011); and
• the ACWQIP (EPA 2013).

Water quality objectives and environmental values for waters are informed by the EPWQP. However, as discussed in section 4.3, the EPWQP does not impose binding obligations on planning authorities in the administration of planning schemes.

For ‘an authority undertaking the management of urban stormwater system,’ the EPWQP requires the application of the SPPG Code of Practice (s 41). The SPP Code of Practice provides detailed information on drainage design, soil erosion and sediment control. See section 4.3 for further discussion.

The 30-Year Plan for Greater Adelaide

The 30-Year Plan provides strategic directions and land-use policies for the Greater Adelaide region (see Figure 4 below for a summary map). The 30-Year Plan purports to require DPs to be consistent with the land-use policies of the 30-Year Plan (p. 25).

The ‘climate change initiatives’ (p. 66–7) under the 30-Year Plan includes:

• Consistent with Water for Good, water-sensitive urban design will be mandated in all new dwellings and residential developments.

• New greenfield developments will be required to resource outdoor water from non-potable water supplies.

• A new generation of greenways and open-space precincts will create a more liveable city, providing opportunities for walking, cycling and other recreation. This will also have a cooling effect on new communities, ameliorating the urban heat island effect, and will also help to reduce the impacts of climate change, such as more frequent, hotter temperatures.

Chapter D includes the following water policies and targets (pp. 142–3):

Policies

1. Incorporate water-sensitive urban design (WSUD) techniques in new developments to achieve water quality and water efficiency benefits.

2. Require WSUD techniques to be incorporated in Structure Plans and Precinct Requirements for State Significant Areas.

3. Mandate WSUD for new developments (including residential, retail, commercial, institutional, industrial and transport developments) by 2013 (consistent with Water for Good). The Climate Change, Housing Affordability and Sustainable Neighbourhoods Task Force will advise the State Government on the most effective way to implement this policy without compromising housing affordability.

4. Require new greenfield developments that are subject to Structure Plans from 2011 to source water from outdoor use from non-mains water supplies. This recognises the need to plan alternative water sources at the commencement of new large greenfield developments, rather than retrofit these sources for latter stages of the development.
5. Protect water supply catchments and the watershed by preventing high-risk development in catchments and watershed areas that are considered vulnerable, consistent with the water quality risk hierarchy (see Box 5) associated with the Mount Lofty Ranges Watershed priority areas, and ensure that new developments have a beneficial, or at least neutral, impact on water quality in the watershed.

6. Incorporate the protection of relevant coastal and riparian areas and Ramsar wetlands in Structure Plans and Development Plans.

7. Identify and protect locations for potential stormwater harvesting schemes, including those areas identified in Map D22.

8. Ensure appropriate policy links and consistency between Stormwater Management Plans and Development Plans to address stormwater and flood management matters.

Targets

A. Reduce demand on mains water supply from new development through the introduction of water-sensitive urban design.

B. Require all new dwellings to be connected to alternative water resources, which must supply at least 15 per cent of the internal water needs of these households.

C. Achieve independence from mains water supplies for new public open spaces in transit corridors through WSUD techniques.

D. Achieve alternatives to mains water for outdoor use through WSUD techniques in all new greenfield developments that are subject to Structure Plans and Precinct Requirements after 2011.

E. Protect and maintain the water supply catchment of the Mount Lofty Ranges, which comprises 159,000 hectares as identified in Map D23.

F. Protect and maintain the water reservoirs as identified in Map D23.

G. Protect from inappropriate development and maintain prescribed water resources, as identified in Map D24.

With respect to Target A above, the 30-Year Plan suggests that this target will be quantified once the ‘WSUD mandating scheme’ is determined (p. 143). This is yet to be implemented.
Figure 4. The 30-Year Plan, Map D1, Summary map for Greater Adelaide (DPLG 2010, p. 73)

The 30-Year Plan also provides information on WSUD techniques – see Figure 5 below.
Box 4 – Water-sensitive urban design (WSUD) techniques

There are a wide range of WSUD techniques that can be incorporated into development projects and individual homes. These include, but are not limited to:

- permeable paving of footpaths, common areas and parking spaces (can be used above open underground water storage facilities)
- water efficient fittings and appliances
- maintaining fixtures (for example, fixing leaks and drips from plumbing and taps)
- green roofs and living walls (for example, plantings on roofs and down walls)
- appropriate landscaping (for example, efficient irrigation, mulching, wind and sun protection, minimising lawn area, and selecting suitable plants)
- wetlands to capture and treat run-off water
- capture and storage of rainwater and stormwater for re-use for residential purposes, or to irrigate parks, sporting fields and other open space
- capture, treatment, and re-use of wastewater

WSUD can be incorporated across a range of development types and scales, including individual homes, streets, vehicle parking areas, subdivisions and multi-units, commercial and industrial areas, and public land. WSUD helps to improve water quality and quantity, reduces flood risk in urban areas, and enhances biodiversity.

Figure 5. The 30-Year Plan, WSUD techniques (DPLG 2010, p. 142)

The biodiversity theme of the 30-Year Plan includes the following target which supports the adoption of WSUD (p. 129):

Minimise the discharge of stormwater, pollution and nutrients to freshwater, coastal and marine environments through the adoption of appropriate water-sensitive urban design (WSUD) and Adelaide Coastal Water Quality Improvement Plan [ACWQIP] and targets into Development Plans.


South Australian Planning Policy Library Version 6 (DPLG 2011)

The Natural Resources Policy of the SAPP Library sets out a number of objectives and development controls for WSUD including the following ‘Water Sensitive Design’ section (p. 78):
Water Sensitive Design

5 Development should be designed to maximise conservation, minimise consumption and encourage reuse of water resources.

6 Development should not take place if it results in unsustainable use of surface or underground water resources.

7 Development should be sited and designed to:
   (a) capture and re-use stormwater, where practical
   (b) minimise surface water runoff
   (c) prevent soil erosion and water pollution
   (d) protect and enhance natural water flows
   (e) protect water quality by providing adequate separation distances from watercourses and other water bodies
   (f) not contribute to an increase in salinity levels
   (g) avoid the water logging of soil or the release of toxic elements
   (h) maintain natural hydrological systems and not adversely affect:
       (i) the quantity and quality of groundwater
       (ii) the depth and directional flow of groundwater
       (iii) the quality and function of natural springs.

8 Water discharged from a development site should:
   (a) be of a physical, chemical and biological condition equivalent to or better than its pre-developed state
   (b) not exceed the rate of discharge from the site as it existed in pre-development conditions.

9 Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood.

10 Development should have adequate provision to control any stormwater over-flow runoff from the site and should be sited and designed to improve the quality of stormwater and minimise pollutant transfer to receiving waters.

11 Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded.

12 Development should include stormwater management systems to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.
13 Stormwater management systems should preserve natural drainage systems, including the associated environmental flows.

14 Stormwater management systems should:

(a) maximise the potential for stormwater harvesting and re-use, either on-site or as close as practicable to the source

(b) utilise, but not be limited to, one or more of the following harvesting methods:
   
   (i) the collection of roof water in tanks

   (ii) the discharge to open space, landscaping or garden areas, including strips adjacent to car parks

   (iii) the incorporation of detention and retention facilities

   (iv) aquifer recharge.

15 Where it is not practicable to detain or dispose of stormwater on site, only clean stormwater runoff should enter the public stormwater drainage system.

16 Artificial wetland systems, including detention and retention basins, should be sited and designed to:

(a) ensure public health and safety is protected

(b) minimise potential public health risks arising from the breeding of mosquitoes.

Support for WSUD is also found under the Residential Development Policy. One of the development control principles under this Policy is that residential allotments and sites should accommodate water sensitive design systems that enable the storage, treatment and reuse of stormwater (p. 89).

As addressed in section 5.4, a number of metropolitan councils have adopted the relevant wording of Natural Resources Policy of the SAPP Library into their DPs.

**Water Sensitive Urban Design – Creating more liveable and water sensitive cities in South Australia** (DEWNR 2013)

The Water-Sensitive Cities in SA purports to compliment and support Water for Good, the Stormwater Strategy and the Planning Strategy, in particular the 30-Year Plan. It contains:

- an outline of the SA Government’s position on WSUD in a local context and the role that the State Government intends to play in collaboration with other stakeholders to maximise the use of WSUD approaches;

- four State-wide WSUD performance principles and targets associated with each principle. These principles and targets focus on residential, commercial, industrial and institutional development, and with exception to the water conservation principle, also targets road, streets and thoroughfares. Details of the principles and targets are provided in Table below;

- list of actions the SA Government is proposing to adopt to facilitate the uptake of WSUD in the Greater Adelaide Region. These include State infrastructure projects, WSUD capacity building, promoting WSUD through other State instruments, WSUD research and importantly, ‘embedding WSUD in the State’s planning and development system’ under Action 2 and 3. See Figure 6 below.
Action 2 and 3 are largely yet to be implemented.

**Figure 6. Water-Sensitive Cities in SA, Action 2 and 3 (DEWNR 2013, pp. 14-15)**

**Water for Good – A Plan to Ensure Our Water Future to 2050 (DEWNR 2012)**

This is the SA Government’s water security plan and acts as a key driver for the development of WSUD policies in the planning context. Water for Good is referenced in the 30-Year Plan and the SA WSUD Policy.

Water for Good proposes a range of actions to diversify SA’s water sources, improve water conservation and efficiency and modernise the State’s water industry towards creating a ‘Water-sensitive State’ (p. 18). These actions are to apply through the State (p. 14).

Part 6, *Fostering Innovation and Efficiency Through Planning, Pricing, Legislation and Research*, seeks to achieve mandatory WSUD for new residential and commercial developments (p. 127). It suggests that water will need to be managed in a more integrated way to ensure success of Water for Good and sees SA’s projected high growth in greenfield developments as ‘an ideal opportunity to incorporate WSUD into all aspects of land use planning and development’ (p. 129).

Under Water for Good, the key elements of WSUD (p. 129) include:

- integrating the management of groundwater, surface run-off (including stormwater), drinking water and wastewater to protect water-related environmental, recreational and cultural values
- increasing the storage, treatment and beneficial use of run-off – at building and street level, and including stormwater
- increasing the treatment and reuse of wastewater
- using vegetation for treatment purposes, water-efficient landscaping and enhancing biodiversity
• using water saving measures inside and outside domestic, commercial, industrial and institutional premises, to improve water efficiency.

Water for Good suggests that the ‘best regulatory approach’ to mandate WSUD in SA is to be developed and implemented by 2013 and WSUD targets introduced by 2010. However, a survey of metropolitan council DPs suggests that the stormwater pollutant reduction targets are yet to be adopted as part of their DP or local planning strategy. See section 5.4 for further discussion.
<table>
<thead>
<tr>
<th>Performance principles</th>
<th>Performance principle intent</th>
<th>State-wide performance target</th>
<th>Primary focus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water conservation</strong> water systems are efficient and, where safe and appropriate, sustainable local water resources are given preference over non-local water sources</td>
<td>Water systems are efficient and water resources are sustainably used</td>
<td>Demonstrate compliance with South Australian residential building requirements for water efficiency</td>
<td>Residential development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-residential: evidence demonstrating reasonable effort in promoting water efficient techniques in commercial, industrial and other non-residential urban settings</td>
<td>Commercial, industrial and institutional development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irrigated open spaces: evidence demonstrating reasonable best practice irrigation management in outdoor irrigated open spaces</td>
<td>Irrigated open space areas</td>
</tr>
<tr>
<td><strong>Runoff quality</strong> Positively manage the quality of urban runoff through implementing water-sensitive urban design</td>
<td>To help protect and where required, enhance, the quality of runoff entering receiving water environments, in order to support environmental and other water management objectives</td>
<td>Achieve the following minimum reduction in total pollutant load, compared with that in untreated stormwater runoff, from the developed part of the site: Total suspended solids by 80% Total phosphorus by 60% Total nitrogen by 45% Litter/gross pollutants by 90%</td>
<td>Residential, commercial, industrial and institutional development, and roads streets and thoroughfares</td>
</tr>
<tr>
<td><strong>Runoff quantity</strong> Post-development hydrology should, as far as practical and appropriate, minimise the hydrological impacts of urban built environments on watercourses and their ecosystems</td>
<td>Help protect water ways where relevant, promote their restoration by seeking to limit flow from development to pre-development levels Help to manage flood risk, by limiting the rate of runoff to downstream areas to appropriate levels</td>
<td>For waterway protection: Manage the rate of runoff discharged from the site so that it does not exceed the pre-urban development 1 year average recurrence interval (ARI) peak flow</td>
<td>Residential, commercial, industrial and institutional development, and roads streets and thoroughfares, where runoff from these land uses drains to an un-lined watercourse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For flood management: For development and other relevant infrastructure that will drain runoff to an existing publicly managed drainage system or to a drainage system or to a drainage system such as a creek or watercourse on privately-owned land: the capacity of the existing drainage system is not exceeded; and there is no increase in the 5 year ARI peak flow and no increase in flood risk for the 100 year ARI peak flow, compared to existing condition</td>
<td>Residential, commercial, industrial and institutional development, and roads streets and thoroughfares</td>
</tr>
<tr>
<td><strong>Integrated design</strong> That the planning, design, and management of WSUD measures seeks to support other relevant State, regional and local objectives</td>
<td>Implement WSUD in a way that promotes establishment of ‘green infrastructure’ and achievement of multiple outcomes, for example: public amenity, habitat protection and improvement, reduced energy use and greenhouse emissions, and other outcomes that contribute to the wellbeing of South Australians</td>
<td>Evidence that relevant stakeholders are engaged at appropriate stages of planning, designing, constructing, and managing WSUD measures so as to maximise the potential for WSUD to contribute to ‘green infrastructure’ and other relevant State, regional, and local objectives</td>
<td>Residential, commercial, industrial and institutional development, and roads streets and thoroughfares</td>
</tr>
</tbody>
</table>
Stormwater Strategy – The Future of Stormwater Management (DoW 2011)

This Stormwater Strategy is described as a precursor to a more detailed ‘blueprint for urban water’ that will provide a framework for planning and prioritising projects in Greater Adelaide (p. 11). To this end, it hopes to bring together stormwater and wastewater and examine matters such as the costs and benefits of various strategic water projects and products, a demand study to identify possible users of various water products and land-use planning considerations for strategic infrastructure investment (including investment related to mitigating flood risks).

Proposed actions under the Stormwater Strategy include introducing interim targets for WSUD, ahead of developing and implementing the best regulatory approach to mandate WSUD by end of 2011 (p. 25). This was to be led by the DoW.

Adelaide Coastal Water Quality Improvement Plan (EPA 2013)

Developed by the EPA in partnership with a range of stakeholders including the community, the ACWQIP provides a long-term strategy for water quality improvement for Adelaide’s coastal waters. Much of the focus of the ACWQIP is on improved stormwater management across the Adelaide region, with the aim of reducing the nutrient and sediment loads affecting Adelaide’s coastal waters.

The ACWQIP ‘embraces the notion of ecosystem services, advocates the application of water sensitive urban design (WSUD) and promotes the catchment to coast philosophy’ (p. 5). It advocates for WSUD to be applied to greenfield sites, infill development sites and the replacement urban infrastructure to reduce stormwater flows and sediment inputs to the coast (p. 11).

It contains eight strategies (see Figure 7) which includes a reduction in nitrogen loads to approximately 600 tonnes per year and reduction in sediment loads of 50% from 2003 levels.

The ACWQIP contains water quality objectives and nutrient reduction targets for various water zones in the Greater Adelaide region which have been developed to be consistent with the National Water Quality Management Strategy (NWQMS) (p. 11).

The stormwater focus of the ACWQIP is linked to key government policies, including the 30-Year Plan and Water for Good. It is also referenced in the Adelaide and Mount Lofty Ranges NRM Plan (Adelaide and Mount Lofty Ranges NRM Board 2013), which may be a relevant consideration in a DP amendment under the Development Act as discussed in section 4.2 above. Despite this, a brief survey of the metropolitan DPs in the Greater Adelaide region suggests that the ACWQIP is not widely referenced.
5.3 WSUD policy at different scales

Precinct structure planning

SA has no specific PSP policies or controls for WSUD that applies across the State.

PSPs are created under the Urban Renewal Act 1995 which allows the Minister for Housing and Urban Development to declare a precinct and appoint a precinct authority (either a council, subsidiary of a council, the Urban Renewal Authority or other statutory corporation) to develop plan for the precinct through community engagement. A precinct authority singularly manages all aspects of planning, design and infrastructure delivery of a major development project.

Once a precinct has been declared the precinct authority is required to prepare a precinct master plan and a precinct implementation plan. An approved precinct master plan can lead to an amendment of a DP. Approved precinct master plans must also be referred to the Environment Resources and Development Committee of Parliament for review.

Under the Urban Renewal Act 1995, a precinct master plan should seek to promote the provisions of the Planning Strategy and may address the items set out under Section 7I(2) including:

the provision of open space or the making of payments (insofar as it is relevant to development within the precinct) in connection with the requirements imposed under section 50 of the Development Act 1993.

The State Government's Fact Sheet 2, Precinct Planning and Urban Renewal Act – What Does Precinct Planning Mean for Councils? (DPTI 2014), states that precinct master plans are expected to be ‘strategically aligned with and seek to promote the provisions of the Planning Strategy for South Australia and have regard to other relevant state policy documents’. Accordingly the broad policy framework under the 30-Year Plan and SA WSUD Policy could be applied to incorporate WSUD requirements into a precinct master plan.

The precinct authority must also have regard to the relevant council’s Strategic Directions Report and DPs but is not bound by them.
Residential subdivisions

While the 30-Year Plan contains WSUD policies which are relevant to residential subdivisions, there are no binding requirements for WSUD that apply across the State.

Infill developments

Infill developments are required to be assessed under the Development Act and the relevant DP. There is no WSUD policy or control specific to infill developments that apply across the State.

WSUD at the lot scale

As discussed in section 3.1 above, generally single dwellings are considered as R Code developments, which require compliance with design standards set out in the Development Regulations rather than the relevant DP. Consequently, unless the development is in certain restricted areas of the State, single dwellings are not subject to planning controls.

In SA, residential buildings with roof catchment area of not less than 50 m² are subject to water efficiency requirements under the BCA. This is discussed in section 5.6 below.

5.4 Examples of local planning policies for WSUD and stormwater

In SA, stormwater quality targets are generally administered by councils as an engineering condition or as part of a local policy/strategy or a SMP. A number of metropolitan councils have adopted the wording of the WSUD objectives and the Principles of Development Control under the SAPP Library’s Natural Resources Policy (see 0). However, apart from City of Onkaparinga which is discussed below, the stormwater pollutant reduction targets as set out in the SA WSUD Policy and the ACWQIP have not been adopted into DPs or council strategies.

City of Onkaparinga

The ACWQIP (discussed in section 0 above) suggests that the City of Onkaparinga has ‘been active in implementing WSUD in council-owned streetscapes and parks and continues to encourage its incorporation into Greenfield development including through a standard development condition and a water quality levy’. It has adopted the stormwater pollutant reduction targets for development as provided under the SA WSUD Policy - see Figure 8 below.

The Status of Water Sensitive Urban Design Schemes South Australia Report (Goyder Institute for Water Research 2013), states that the City of Onkaparinga was charging a water quality levy of approximately $19,000 per hectare at the time of the report. The Water Quality Levy is charged in situations where WSUD is not practical or where targets cannot be achieved. As an alternative to meeting the council’s water quality outcome requirements, the developer may be charged a levy which is paid into a fund. The funds are used by the council to contribute to larger WSUD infrastructure downstream or elsewhere in the council area (Goyder Institute for Water Research 2013). However, the current status of the Water Quality Levy in City of Onkaparinga is unclear as the council’s current website and its DP do not make any references to the Levy.

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7 From those surveyed for this report, eight out of 13 councils listed in the 0 have adopted the Natural Resources Policy into their DP.
A key element of the SM Agreement as discussed earlier is the development of SMPs for catchments or specified areas. The EPA suggests that the purpose of these plans is to ensure that stormwater management is addressed on a total catchment basis. To this end, the relevant NRM board, various councils and State government agencies responsible for the catchment are to work together to develop, implement and fund a coordinated and multi-objective approach to management of stormwater for the area.

Schedule 1A of the LG Act establishes the SMA who is required to issue guidelines for the preparation of SMP by councils;

Clause 13 of Schedule 1A provides:

1. The Authority must issue guidelines for the preparation of stormwater management plans by councils.

2. The guidelines—
   
   (a) must set out objectives to be reflected in stormwater management plans; and

   (b) must set out appropriate public consultation processes to be followed by councils in the preparation of stormwater management plans; and

   (c) must be approved by the Natural Resources Management Council established under the Natural Resources Management Act 2004; and

   (d) once approved, must be published in the Gazette.
The objectives set out in the guidelines must—

(a) be consistent with the objectives of the Stormwater Management Agreement; and

(b) include—

(i) environmental objectives; and

(ii) objectives addressing issues of sustainability, that are consistent with the objects of the Environment Protection Act 1993, the Natural Resources Management Act 2004 and other relevant legislation aimed at protection or enhancement of the environment, the maintenance of biodiversity and the sustainable management of natural resources.

A stormwater management plan prepared by a council or group of councils must—

(a) comply with the guidelines issued by the Authority; and

(b) be prepared in consultation with the relevant regional NRM board or boards; and

(c) be prepared in accordance with any other procedures or requirements prescribed by the regulations.

A regional NRM board must consider any stormwater management plan prepared by a council or group of councils in respect of an area that falls within the region of the board and must, by notice in writing given as expeditiously as practicable, advise the Authority whether, in the opinion of the board, the stormwater management plan contains appropriate provisions.

Clause 14 of Schedule 1A empowers the SMA to compel a council or group of councils to prepare a SMP.

Consequently, some metropolitan councils have developed a SMP but the extent to which these are integrated into the DPs and development assessment requirements vary.
5.5 Planning and Environment Court cases relevant to WSUD

Administrative tribunal or Court cases relating to WSUD may assist in ascertaining the extent to which WSUD policy requirements have been reflected in policy, or have been the subject of disputes.

A brief search of the SA Planning and Environment Court cases involving the term ‘WSUD’ has found that there is one decision, dating back to 2009, which contain the term. This can be contrasted with more than 200 references in the Victorian planning jurisdiction.

5.6 Plumbing and Building requirements for individual buildings

In SA, new houses and house extensions greater than 50 m² are required to have an additional non potable water supply to supplement mains water by having it plumbed to a toilet, a water heater or to all cold water outlets in the laundry. This requirement generally applies to new Class 1 (residential) buildings under the SA Additions of the BCA (see Figure 9 below).

Figure 9. BCA, SA Additions, SA2 Water Efficiency

The SA policy is implemented through the existing development approval system in accordance with the Development Act and the Development Regulations, and contained in the SA’s variation to the BCA. The plumbing aspects of the policy are regulated by the SA Water Corporation in accordance with the Waterworks Act 1932 and Waterworks Regulations 1996.

For Class 1 and 2 buildings under the BCA, the Development Regulations require on-site retention of stormwater (Reg 78AA). If a relevant authority directs that 1 or more on-site stormwater retention devices are to be incorporated as part of the stormwater drainage system, any relevant requirements of Minister’s Specification SA
78AA On-Site Retention of Stormwater must be complied with (Reg 78AA(2)). However, the use of on-site retention devices is restricted to certain soil types as listed in the Minister's Specification SA 78AA.
Section 6  Public Infrastructure funding and delivery

6.1 The challenge for strategic planners

There are a broad range of approaches to funding public infrastructure by water authorities and councils. The planning system can fund some infrastructure, but there are a range of trade-offs and constraints on the ability to levy funds for particular purposes.

A strategic planner should be alive to the broad range of funding options and seek to leverage opportunities to capture funds from where they are most readily available, or to identify opportunities to collaborate with other stakeholders to achieve good outcomes.

Some of the relevant funding mechanisms for public infrastructure include:

- POS contributions;
- developer contributions;
- works in kind agreements with developers;
- special rate and charge schemes administered under the LG Act;
- rate revenue;
- levies collected by water authorities; and
- Government grants.

Some councils prefer to invest resources into WSUD in the public realm to enhance liveability outcomes and the amenity of POS waterways and streetscapes, rather than focus exclusively on private land. This generally requires a strategic approach to planning.

There are legitimate arguments for different approaches depending on the circumstances applicable in different municipalities. For example:

- some councils have a shortage of open space or have a need to increase the quality of the public realm;
- some councils have opportunities to divert stormwater to POS or to construct purpose built storages at scale whereas this is more difficult in other contexts where land is not readily available or is very expensive to acquire;
- some councils consider it to be more cost effective to deliver WSUD infrastructure at scale, rather than on a lot by lot basis, or by investing in street scale solutions
- some inner urban councils have a higher proportion of impermeable surfaces and smaller lot sizes;
- there may be opportunities to develop synergies in the planning of public spaces which can cost effectively realise WSUD outcomes with minimal impact on the budget of a council department.
Accordingly, it is relevant to consider how the provision of POS can be integrated with planning for WSUD and the extent to which securing POS is facilitated or inhibited by the planning framework in each State.

6.2 Reservation of land and compensation

The LG Act gives councils general power to acquire land (s 190) or compulsorily acquire land with the Minister’s approval (s 191). A council may also assume the care, control and management of land in its area that has been set aside for the use or enjoyment of the public if the owner or any person who has recognised interest in the land consents (s 192).

The following Acts also give the Minister responsible for the administration of the Act power to acquire land, either by agreement or compulsorily:

- the Development Act allows the Minister to acquire land by agreement or compulsorily for the purpose of development or redevelopment of that land or for any public purpose’ (s 77, s 78);
- the Water Industry Act 2012 allows a water industry to acquire land by compulsory process with approval by the Minister (s 46);
- the Crown and Land Management Act 2009 gives the Minister power to acquire land by agreement or compulsorily (s 13);
- the Metropolitan Drainage Act 1935 gives the Minister power to take and acquire compulsorily or by agreement, ‘all such lands and easements in or over any lands as he may require for the purpose of constructing, completing, maintaining, repairing, or extending any of the works’. (s 5);
- the NRM Act gives the Minister power to acquire land, after taking into account any recommendation of the relevant NRM board, where he/she considers the acquisition is ‘reasonably necessary to further the objects of this Act’ (s 21).

The Development Act also allows the Minister, a council or a greenway authority (meaning Minister administering the Recreational Greenway Act 2000) with ministerial approval, enter into an agreement relating to the development, management, preservation or conservation of land (s 57). A ‘greenway’ is land set aside as a trail for use by public for recreational walking, cycling, horse riding, skating or a similar purpose pursuant to the Recreational Greenway Act 2000.

The PD&I Bill retains the Minister’s power to compulsorily acquire land (s 243) and for the Minister, a council or a greenway authority to enter into land management agreements (s 192).

6.3 Public open space

The requirement for POS is prescribed under section 50 of the Development Act as follows:

- where an application under Part 4 of the Development Act involves a subdivision of land into more than 20 allotments, and one or more allotments is less than one hectare in area, the council may require that up to 12.5% of relevant area be vested in the council or be held by Crown as POS. Alternatively or in addition to the POS contribution, the applicant may be required to make the contribution prescribed by the Development Regulations;
• where an application provides for 20 allotments or less, and one or more allotments is less than one hectare in area, or the subdivision is under the Community Titles Act 1996 or the Strata Title Act 1988, the applicant may be required to pay the DAC the contribution prescribed by the Development Regulations (s 50(2)); and

• where a subdivision falls outside the above categories, the DAC may require that an area not exceeding 12% of the total area of the site of the development be kept as open space or in some other form that allows for active or passive recreation as determined by the DAC. Some or all of this area is to be vested in the Crown or the council or both. Alternatively or in addition to the POS contribution, the applicant may be required to make a contribution to the DAC as prescribed by the Development Regulations.

• For contribution in lieu of POS under section 50 of the Development Act, the Development Regulations currently requires:

  • $6,488 for each new allotment or strata lot shown on the relevant plan that does not exceed 1 hectare in area and is within Metropolitan Adelaide or Outer-Metropolitan Adelaide (Reg 56(2)(a)); and

  • $2,849 for each new allotment or strata lot that does not exceed 1 hectare within Regional SA (Reg 56(2)(c)).

Section 50(7) provides a formula for calculating the contribution that is required in addition to the POS contribution under s 50(1)(e) of the Development Act.

As an alternative or in addition to the POS requirement, the developer may be required to make a financial contribution to the P&D Fund (See section 0 for explanation on the P&D Fund)

The POS contribution scheme and the above requirements remain unchanged under the PD&I Bill (Part 15).

6.4 Funding WSUD

Summary

Where residential subdivision occurs, the subdivider will construct roads and local drainage necessary to service each lot. It is the ‘trunk’ infrastructure which services a broader area that needs to be funded and coordinated through strategic planning processes.

Where WSUD is planned through a strategic process such as PSP, there is greater reliance on the public realm to achieve WSUD objectives. A variety of funding sources addressed in this section are relevant to such consideration.

Funding for drainage and stormwater infrastructure in the SA’s urban planning context is limited to:

• voluntary planning agreements under the Development Act;

• grants and subsidies;

• Commonwealth funding for stormwater harvesting schemes; and

• general rates, special rates and charges under the LG Act.
Development contributions

Development contributions in SA are regulated by the Development Act, LG Act, *South Australian Water Works Act 1932* and the *Sewerage Act 1929*.

Unlike other States, SA councils’ ability to levy development contributions is limited to the Open Contribution Scheme as discussed above, P&D Fund, Council Car Parking Funds and the Urban Trees Fund (see Grants and subsidies section below).

Section 50A of the Development Act allows councils to require the developer to provide basic subdivision infrastructure (access roads, hydraulic connections) and the dedication of open space.

The PD&I Bill expands the scope to levy for developer contributions by allowing the Minister to establish Infrastructure Delivery Schemes for the provision of ‘essential infrastructure’ (s 164). These schemes are to be partly funded by contributions from council or councils whose land falls within the contribution area where the contribution amount is determined by the Minister and the value of rateable land to which the scheme applies (s 177). In turn councils are authorised to ‘reimburse itself for the amounts contributed (or to be contributed)’ by imposing a charge on rateable land in the contribution area (s 180).

Capital contributions for water and sewerage infrastructure are provided for in the regulations under the *Water Works Act 1932* and *Sewerage Act 1929*. Where reticulated water supply and/or wastewater services are required, the developers fund and construct the mains within the development.

Grants and subsidies

There are four types of funds established under the Development Act and the LG Act which are designed to provide financial assistance to SA councils. From these, the P&D Fund, the Urban Trees Fund and the SMF are relevant to WSUD infrastructure funding.

The Planning & Development Fund

The P&D Fund helps to provide the means for POS and public realm investment across the State.

Section 50 of the Development Act requires developers of new allotments to make an open space contribution. When land is subdivided via strata or community title, or when subdivisions create less than 20 additional allotments by normal land division, the developer may be required to make a financial contribution to the P&D Fund as an alternative or in addition to the POS contribution.

Pursuant to section 81 of the Development Act and Regulation 104A of the Development Regulations, the P&D Fund is used for certain purposes including acquisition, management and development of land for open space, the provision of grants to councils for the provision and development of public land for conservation and recreation and to undertake public works which promote a policy or strategy of the Planning Strategy.

The DPTI further outlines the purposes as follows (DPTI 2013):

- to assist councils with purchase, development and planning of regional open space throughout the State and the Metropolitan Open Space System (MOSS). MOSS includes the Adelaide City Park Land, the Hills Face Zone, the coastal foreshore, various urban buffers and the major watercourses crossing the metropolitan area.

- to assisting councils with development and implementation of ‘place-based’ urban improvement strategies and projects. Places for People grants provide financial assistance to local government for strategic urban
design planning, detailed design documentation and development of prominent public places of community significance.

Grant applications are assessed against the grant funding criteria which gives priority to projects that support the Planning Strategy objectives and other relevant open space and public realm strategies, including the implementation of waterway linear parks.

The grant programs are administered by the Urban Design and Public Space Team of the DPTI.

The P&D Fund is retained under Part 15 of the PD&I Bill.

Urban Trees Fund

Under section 50B of the Development Act, a council may, with the approval of the Minister, establish an urban trees fund.

The money may be applied by the council to:

- maintain or plant trees in the designated area which are or will (when fully grown) constitute significant trees under the Development Act or
- to purchase land within the designated area in order to maintain or plant trees which (when fully grown) constitute significant trees under the Development Act.

The Urban Trees Fund is retained under Part 15 of the PD&I Bill.

Stormwater Management Fund

Under the SM Agreement, the State has committed to providing $4 million a year, indexed for 30 years, to the SMF. The SM Agreement incorporates aspects of the Stormwater Strategy (as discussed in section 0 above) that seek to:

- ensure that South Australia builds a more robust and integrated water management regime incorporating robust stormwater systems that provides for flood protection, improve the ecological status of our urban watercourses and coastal environment, and provide opportunities for economic reuse of stormwater. (p. 4)

The SM Agreement is not legally binding (cl 2.1) but has given rise to Schedule 1A of the LG Act which establishes the SMA and the SMF, and preparation and approval processes for SMPs by councils.

Under the SM Agreement, amongst a range of responsibilities, the State will (cl 8.1(d)):

- where feasible, ensure that Principles of Development Control in the Development Plan Rules, the Building Code, and other codes of practice:
  - reflect the provision of flood mitigation infrastructure on private and public lands and control development in flood prone areas so as to mitigate potential flood damage to development sites and other property; and
  - reflect Water Sensitive Urban Design (“WSUD”) principles and techniques.

Equally, councils will (cl 8.2(d)):

- Encourage water sensitive urban design being incorporated into new “greenfield” and “brownfield” developments, as a means of helping to manage the quantity and quality of stormwater where it is feasible and appropriate, and
will also consider opportunities to incorporate water sensitive urban design into relevant asset upgrade or renewal programs involving council-owned infrastructure such as roads, footpaths and buildings.

The fund may be used for a range of purposes (LG Act Schedule 1A, cl 18), including:

(a) the preparation of stormwater management plans;

(b) the carrying out works or the actuation of land (including by a council or some other entity) in accordance with an approved stormwater management plan or otherwise for the purpose of stormwater management;

(c) community education and awareness programmes related to stormwater management;

(d) projects or measures relating to water quality or pollution abatement;

(e) investigations, research, pilot programmes or other projects relating to stormwater management;

(f) payment of the operational costs or expenses of the Authority;

(g) the making of any payment required or authorised by or under this Schedule or any other Act or law.

A number of SA councils have implemented or is currently in the process of preparing a SMP which, in some instances, are required to be applied in development application assessments. However, under the current legislative framework, the preparation and implementation of SMPs remain discretionary. A short inventory of SMPs within SA’s metropolitan councils is provided in Appendix 3 of this report.

**Commonwealth funding for stormwater harvesting schemes**

The Commonwealth Government has recently funded a number of stormwater harvesting projects through the National Urban Water and Desalination Plan (Australian Government, Department of Environment 2015) (see Figure 10 below). The number of stormwater harvesting projects funded in SA is comparable to NSW and Victoria.
**South Australia**

<table>
<thead>
<tr>
<th>Location</th>
<th>Project Name</th>
<th>Theme</th>
<th>Aust Govt Funds (excl. GST)</th>
<th>Status</th>
</tr>
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<tr>
<td>SA</td>
<td>Adelaide Botanic Gardens First Creek Wetland Aquifer Storage and Recovery Project</td>
<td>Stormwater</td>
<td>$2,935,000</td>
<td>Active</td>
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<td>SA</td>
<td>City of Unley Stormwater Harvesting and Reuse Project</td>
<td>Stormwater</td>
<td>$2,569,000</td>
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</tr>
<tr>
<td>SA</td>
<td>Oaklands Park Stormwater Scheme</td>
<td>Stormwater</td>
<td>$3,732,500</td>
<td>Active</td>
</tr>
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<td>SA</td>
<td>Adelaide Airport Stormwater Scheme</td>
<td>Stormwater</td>
<td>$4,964,000</td>
<td>Active</td>
</tr>
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<td>SA</td>
<td>Adelaide Desalination Plant</td>
<td>Desalination</td>
<td>$328,000,000</td>
<td>Complete</td>
</tr>
<tr>
<td>SA</td>
<td>Glenoily to Adelaide Park Lands Recycled Water Project</td>
<td>Water Recycling</td>
<td>$30,150,000</td>
<td>Complete</td>
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<td>Stormwater</td>
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<td>Active</td>
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<td>Playford Stormwater Harvesting and Reuse Scheme</td>
<td>Stormwater</td>
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<td>Active</td>
</tr>
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<td>SA</td>
<td>Waterproofing Eastern Adelaide (Feasibility Study)</td>
<td>Stormwater</td>
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<td>Complete</td>
</tr>
<tr>
<td>SA</td>
<td>Waterproofing Eastern Adelaide Project</td>
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<td>Active</td>
</tr>
<tr>
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<td>Complete</td>
</tr>
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<td>Murray Bridge Stormwater Management and Reuse Scheme</td>
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</tr>
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<td>SA</td>
<td>Cobbler Creek- An Integrated Flood Mitigation, Harvesting and Reuse Scheme</td>
<td>Stormwater</td>
<td>$2,210,000</td>
<td>Active</td>
</tr>
<tr>
<td>SA</td>
<td>Gawler Reuse Project</td>
<td>Stormwater</td>
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<td>Active</td>
</tr>
</tbody>
</table>

Figure 10. *National Urban Water and Desalination Plan*: SA’s projects funded under the National Urban Water and Desalination Plan (Australian Government, Department of the Environment 2015)

**Rates and charges under the Local Government Act 1999**

Under Chapter 10, Part 1 of the LG Act, a council may impose rates and charges of the following kinds on its municipal land:

- General rates (s 152);
- Separate rates for the purpose of planning, carrying out, making available, supporting, maintaining or improving an activity that benefits the land or its occupier (s 154); and
- Service rates and services (s 155).

Service rates and charges are for the prescribed services under section 155 and includes

- the treatment or provision of water;
- the collection, treatment or disposal (including by recycling) of waste; and
- any other service prescribed by the regulations for the purposes of the definition.
Section 188 of the LG Act also gives council power to levy fees and charges for a wide range of purposes including in respect of 'any authorisation, licence or permit granted by council’ (s 188(1)(f)). As discussed in section 5.4 above, this power appears to have been used by the City of Onkaparinga to implement the Water Quality Levy.
Section 7 Implementation guidance – Publications

7.1 Summary

There are two implementation guidelines available in SA and these are generally not cross-referenced in the planning documents:

- Water Sensitive Urban Design Technical Manual Greater Adelaide Region (DPLG 2009); and


Water Sensitive South Australia is currently establishing a capacity building program for various sectors of the industry in the State.

The Goyder Institute for Water Research, which is a partnership between the SA Government through the DoW, CSIRO, Flinders University, the University of Adelaide and the University of SA, has produced a number of reports on the status of WSUD in SA.

7.2 Design, construction and maintenance

Water Sensitive Urban Design Technical Manual Greater Adelaide Region (DPLG 2009)

The WSUD Technical Manual is reference in the 30-Year Plan and aims to (p. 1–5):

- Demonstrate how WSUD can be successfully incorporated into a range of projects, illustrating examples of measures;

- Provide a consistent approach to the planning and design of WSUD measures for urban developments across the Greater Adelaide Region;

- Inform and guide urban management decision making processes;

- Help increase awareness and appreciation of WSUD; and

- Encourage the consideration of factors including landscaping, biodiversity and greenhouse gas emissions early in the design process.

This 800 plus page volume, which is presented in 15 chapters, includes legislative requirements, design processes and tools, construction, maintenance and operation requirements, some indicative costs, case studies and a list of references.

The chapters are summarised as follows:

- Chapter 1 outlines the guiding principles of WSUD and a summary of WSUD measures.

- Chapter 2 contains WSUD measures for the following types and scales of development:
  - single residential development
- residential subdivision development
- residential multi-unit development
- streetscape development
- vehicle parking areas
- commercial and industrial development
- upgrade of drainage systems or pavements; and
- publicly owned land.

• Chapter 3 outlines the 12-step design process required to successfully incorporate WSUD measures into a development or redevelopment. It also refers to the following documents:
  - *Water Sensitive Urban Design Guidelines* (Gold Coast City Council 2007)

• Chapter 4 to 14 outline the following WSUD tools in detail:
  - Demand Reduction which includes applicable legislation to water restrictions.
  - Rainwater Tanks
  - Rain Gardens, Green Roofs and Infiltration Systems
  - Pervious Pavements
  - Urban Water Harvesting and Reuse
  - Gross Pollutant Traps
  - Bioretention Systems for Streetscape
  - Swales and Buffer Strip
  - Sedimentation Basins
  - Constructed Wetlands
  - Wastewater Management
  - Modelling Process and tools
  - Siphonic Roofwater Systems
Chapter 15 provides an overview of the modelling process and tools that are available and applicable to the Greater Adelaide Region.

**Stormwater Pollution Prevention – Code of Practice for Local, State and Federal Government (EPA 1998)**

As discussed in section 4.3 above, Part 5 of the EPWQP requires authorities constructing roads and authorities undertaking stormwater management to comply with the SPP Code of Practice (cl 39). Generally, the SPP Code of Practice also acts as a technical guide to enable councils or agencies to comply with the general environmental duty under the EPWQP. It does not contain any urban stormwater quality and nutrient reduction targets.

The relevant aspect of the SPP Code of Practice relevant to WSUD is section 3.7 *Drainage Design* which suggests that agency or council stormwater drainage design policies should include best management practices that consider water quality objectives (p.23). Stormwater drainage design should be in accordance with an integrated and total catchment management policy and consider following measures:

- Retain natural creek and waterway systems wherever possible to promote the natural filtering and pollutant removal processes and help prevent scouring and erosion.
- Rehabilitate degraded creek and waterway systems to achieve the same objective.
- Implement scour and erosion protection strategies and devices along the waterway system. Pay particular attention to the protection works necessary at the outlet of all high velocity drainage systems.
- Incorporate water quality improvement works, such as sedimentation basins, inlet pit baskets, trash racks, pollution removal devices and wetland systems as an integrated part of the complete drainage system.
- Protect ecologically sensitive areas from the erosion and pollution potential of stormwater runoff.

### 7.3 Institutional support and training

*Water Sensitive South Australia* ([http://www.watersensitivesa.com/](http://www.watersensitivesa.com/)) is currently establishing a capacity building program for various sectors of the industry and a new website which will include blogs, interactive WSUD project map and WSUD related topic forums (*Water Sensitive South Australia 2015*).

### 7.4 Reports relating to WSUD


This document was provided in response to the need to develop targets to implement WSUD as recognised by the SA Government’s water security plan, the Water for Good (*SA Office for Water Security 2010*). It outlines:

- the WSUD objectives and principles (see Figure 12 and Figure 13);
- mains water conservation targets;
- stormwater runoff quality improvement targets (see Figure 11); and
- stormwater runoff quantity management targets.
The recommended pollutant load reduction targets in the report as shown below in Figure 11 have been adopted under the SA WSUD Policy.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Recommended target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total suspended solids</td>
<td>80% reduction in annual load*</td>
</tr>
<tr>
<td>Total phosphorus</td>
<td>60% reduction in annual load*</td>
</tr>
<tr>
<td>Total nitrogen</td>
<td>45% reduction in annual load*</td>
</tr>
<tr>
<td>Litter/gross pollutants</td>
<td>90% reduction in annual load*</td>
</tr>
</tbody>
</table>

*Load reduction may be demonstrated based on modelling procedures which compare proposed catchment design with an equivalent, untreated catchment. TSS, TP, TN and gross pollutant targets are based on, and may be assessed by, modelling in the eWater software MUSIC Version 4.10. Equivalent targets for MUSIC Version 5, released during the period of this research, is provided in Appendix D.

Figure 11. Interim Water Sensitive Urban Design Targets for Greater Adelaide – Goyder Institute for Water Research Technical Report Series No. 11/7, Summary of recommended stormwater quality improvement targets (Goyder Institute for Water Research 2011, p. viii)

Box 1.1 – WSUD Objectives

The overarching objective (or vision) of WSUD in the Greater Adelaide Region is to stabilise and improve the health of the Greater Adelaide Region’s coastal waters, inland watercourses and groundwater systems, while maintaining and enhancing human health and reducing the ecological footprint of the Greater Adelaide Region.

Other key objectives of implementing WSUD are to:

- Move towards a natural flow regime (for example, lower flows to reduce erosion of creeks and improve or maintain ecological values);
- Manage risk in relation to drought, flood, climate change and public health;
- Protect, enhance, value and conserve water resources;
- Encourage leading practice in the use and management of water resources so as to increase water efficiency, reduce reliance on imported water and apply at-source reduction of impacts on water quality, flooding, erosion and sedimentation;
- Raise awareness and catalyse change in the design, construction and management of urban development and urban infrastructure; and
- Recognise and foster the significant environmental, social and economic benefits that result from sustainable and efficient use of water resources.

Figure 12. Interim Water Sensitive Urban Design Targets for Greater Adelaide – Goyder Institute for Water Research Technical Report Series No. 11/7, WSUD Objectives (Goyder Institute for Water Research 2011, p. 1)

This report summarises the status of WSUD in SA from stakeholder interviews and a literature review. It also includes an inventory of WSUD sites in SA. The report suggests that the implementation of WSUD at development level largely falls under the jurisdiction of councils who have wide discretion to formulate their DPs and policies according to their needs (p. 10).

The inventory shows that in SA, WSUD uptake has largely been focused on stormwater management features implemented by councils with flow management being the primary driver for WSUD uptake to control flooding and reduce peak flows. As at January 2013, there were 176 documented sites with a range of WSUD features in SA which include wetland sites, bioretention system sites, ponds, green roofs, permeable pavements, wastewater reuse and harvesting reuse schemes (p.17).


Building on the findings of The Status of Water Sensitive Urban Design Schemes in South Australia as discussed above, this report contains the following:

- summary of the institutional and legislative arrangements for WSUD in SA;
- detailed assessment of SA legislation for WSUD and a comparative analysis with other Australian States;
- interviews and mapping of key WSUD stakeholders in SA; and


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- detailed assessment of SA legislation for WSUD and a comparative analysis with other Australian States;
- interviews and mapping of key WSUD stakeholders in SA; and
post-implementation assessment undertaken on seven WSUD scale studies in Greater Adelaide which evaluate the outcomes of WSUD implementation and the impediments that the projects faced.

The report suggests that a number of common themes emerge ‘when considering strategies to address impediments for the greater mainstream adoption of WSUD in SA’ which were the need to (pp. x–xi):

- apply WSUD in consistent and coordinated manner in planning frameworks and development approvals processes. The planning of WSUD needs to consider how the design can best achieve these objectives, and make clear where there is a trade-off between objectives. There is a need to develop transparent and efficient processes for incorporating WSUD objectives in development planning approvals;
- improve a council’s capacity to develop WSUD guidelines and implement WSUD, particularly at a broader catchment-level;
- set clear State level WSUD targets and policy which is lacking in SA;
- develop SA’s knowledge base for WSUD which is largely based on interstate guidelines and monitoring data; and
- improve understanding of how small-scale, distributed implementation of WSUD, particularly in urban consolidation context can address catchment level objectives.

**Business Case for Water Sensitive Urban Design Capacity-Building program for South Australia**

(Alluvium 2012)

This report was commissioned by the Adelaide and Mount Lofty Ranges NRM Board to assess the business case for the implementation of a capacity-building program for WSUD for SA. The report suggests that there is a firm business case for the implementation of a capacity building program (CBP). This view is based on a detailed assessment of the need for a WSUD CBP, proposed structure for the program and an implementation plan. It also outlines the costs of not implementing a CBP as follows (p. 58):

- the lack of industry support to deliver on any forthcoming WSUD policy at a State level;
- compromising the ability to attract professionals to SA and to secure federal government and other funds; and
- potential liability posed by poor design, construction and maintenance of WSUD to the ‘financial sustainability’ of councils.

Similar to the Goyder Institute reports, this report contains a useful stakeholder mapping according to their degree of influence or support and stakeholders’ views on the barriers to WSUD in SA (see Figure 14 below).
Figure 14. Business Case for Water Sensitive Urban Design Capacity-Building program for South Australia ‘Barriers to WSUD, breakdown by discipline (where 10 is the highest rating of a barrier)’ (Alluvium 2012, p. 25)
Section 8  WSUD governance

8.1 Introduction

Generally, the roles and responsibilities of a council, government agencies and various stakeholders with respect to WSUD are defined by the legislative framework which supports the policies. The key State agencies/bodies which play a role with respect to WSUD within the planning context are listed in Table 2 below.

As with other States, SA council, although encouraged to do so by SMPs, is under no statutory obligation to coordinate or fund WSUD measures – particularly at a regional or catchment level which may involve cross boundary issues and outcomes.

Table 2. Summary table of role of actors for WSUD governance in SA

<table>
<thead>
<tr>
<th>Actors</th>
<th>Planning Strategy</th>
<th>Regional Planning</th>
<th>Planning assessment</th>
<th>POS</th>
<th>Infrastructure Planning</th>
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</thead>
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</table>
8.2 Role of actors

State Government

Minster for Planning

As with other States, the Minister for Planning is responsible for SA’s planning and development and is given wide powers and functions under the Development Act, including:

- ensuring that Planning Strategy for development within the State is prepared and amended;
- preparing a report on the implementation of the Planning Strategy, any alteration to it, community consultation on the content, implementation, revision or alteration of the Planning Strategy;
- amending a DP where requested by a council or for circumstances prescribed under the Development Act;
- granting an exemption to a council from a requirement to prepare a Strategic Directions Report under the Development Act;
- directing the DAC to act as the relevant authority for the proposed development in substitution for the council or the regional development assessment panel;
- declaring a development or project to be of major environmental, social or economic importance under section 46 to be assessed by the Minister; and
- entering into an agreement relating to the development, management, preservation or conservation of land with the owner of the land.

Department of Planning, Transport and Infrastructure (formerly DPLG)

This is SA Government’s advisory agency on land use planning, development policy and strategy, the building code, and urban design and open space policy.

The DPTI is responsible for undertaking strategic land use planning for the State Government and provides directions for land use and development across the State.

Development Assessment Commission

The DAC is an independent statutory body established under the Development Act with following responsibilities:

- assess and determine development applications, pursuant to Schedule 10 of the Development Regulations;
- act as the concurring authority for non-complying applications approved by a council or regional assessment panel;
- assess and report on crown development and public infrastructure applications to the Minister for Planning;
- assist in the initial stages of proposals being assessed under the major development provisions of the Development Act;
- act as the lodgement authority for all subdivision applications; and
• provide advice to the Minister.

**Stormwater Management Authority**

The SMA was established in 2007 under the *Local Government (Stormwater Management) Amendment Act 1999* and is responsible for ensuring the proper operation of the SMA in accordance with administrative and funding arrangements and powers conferred on it under Schedule 1A of the LG Act.

The SMA's main responsibility is for administering the SMF to which the State Government has committed providing $4 million a year, indexed for 30 years as discussed in section 6.4 above.

Although the Development Act requires the SMA to issue guidelines for the preparation of SMPs by councils and approve SMPs, it has no power to compel a council to prepare and implement an SMP.

**Department of Environment, Water and Natural Resources**

DEWNR has an important role in the implementation of WSUD in SA as it is responsible for providing advice on and administering a range of State Acts which deal with the:

• administration of Crown lands generally;
• creation and management of conservation and pastoral areas;
• protection of vegetation and wildlife or the welfare of animals generally;
• conservation, protection or management of cultural assets generally;
• conservation or management of specific public or cultural areas of the state;
• conservation, protection and management of natural resources, including water;
• challenge of addressing climate change;
• regulation of the water industry; and
• management of water, sewage and stormwater services, facilities and schemes.

In particular, the DEWNR is responsible for the following areas of water management in SA:

• flood hazard management;
• urban water policy for stormwater, integrated water management and WSUD;
• asset management;
• major projects – eight stormwater harvesting and reuse projects in the Greater Adelaide Region; and
• regulatory role for water licensing and compliance.

DEWNR is also responsible for SA’s NRM Plan and Water for Good as discussed in section 4.2 above.
Environment Protection Authority South Australia

As the State’s environmental regulator, the EPA is responsible for the protection of air and water quality, and the control of pollution, waste, noise and radiation. Similar to other States, it monitors compliance with the environmental objectives set out in the EP Act, the EPWQP and associated guides.

The EPA is also responsible for:

- strategic and technical input into the stormwater planning, projects and research activities of other agencies in relation to water quality and Managed Aquifer Recharge;
- licensing some aspects of stormwater projects; and
- develop guidelines, policies and codes of practices.

Urban Renewal Authority

Established under the *Urban Renewal Act 1995*, the URA’s functions include initiating, undertaking, supporting and promoting residential, commercial and industrial development in the public interest, particularly for urban renewal purposes (s 7C(1)).

Water agencies

SA Water

Established under the *South Australian Water Corporation Act 1995*, SA Water provides water and sewerage services in the State and is regulated by the Essential Services Commission of SA. Its license and pricing is established under the *Water Industry Act 2012* and carries out work to ensure that flood prone areas are properly drained under the *Water Metropolitan Drainage Act 1935*.

It also manages water infrastructure assets including asset maintenance activities associated with the following metropolitan drainage assets (DoW 2011):

- Sturt Creek Catchment;
- Brown Hill/Keswick Creek System;
- River Torrens; and
- Barker Inlet and Adelaide Airport.

Councils

The functions and powers of councils for land use planning are governed by the Development Act and the LG Act.

Under the Development Act, a council may amend the DP applicable to its municipal area, and generally act as the relevant authority for development applications within it. SA councils are given a wide discretion to formulate the DPs and incorporate council policies to suit their individual needs and strategies. However, pursuant to Subdivision 3 of the Development Act, SA councils are required to prepare a Strategic Directions Report that addresses the strategic planning issues within the area of the council with particular reference to –

- the Planning Strategy; and
• any other policy or document prescribed by the Development Regulations.

As discussed in section 3.3 above, under the LG Act, a council’s roles and functions include undertaking work for the purpose of stormwater management or flood mitigation (Schedule 1A, Division 6, cl 21). A council may also be asked to prepare an SMP which complies with the guidelines issued by the SMA (LG Act Schedule 1A).
# Appendix 1 Inventory of policies and guidelines

<table>
<thead>
<tr>
<th>Author</th>
<th>Date</th>
<th>Name of Policy/document</th>
<th>Link</th>
</tr>
</thead>
</table>
# Appendix 2 SA local planning policies for WSUD

<table>
<thead>
<tr>
<th>Council</th>
<th>WSUD policy document</th>
<th>Link</th>
</tr>
</thead>
</table>
| The City of Adelaide | Adelaide (City) Development Plan 2015, Stormwater Management (p. 53), Riverbank Zone (p. 254)  
The City of Adelaide Strategic Plan 2012–2016  
Development Information Guide 6 – Urban Corridor Zone  
| City of Charles Sturt | Stormwater Infrastructure Asset Management Plan  
| Town of Gawler       | Stormwater (Watercourse) Management  
<table>
<thead>
<tr>
<th>Council</th>
<th>WSUD policy document</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Mt Gambier</td>
<td>City of Mount Gambier Development Plan 2015, Natural Resources Policy (pp. 48-9)</td>
<td></td>
</tr>
<tr>
<td>City of Norwood, Payneham and St Peters</td>
<td>City of Norwood, Payneham and St Peters Development Plan 2015, Stormwater Management (pp. 33-7), Residential Zone (p. 90), Residential Character Zone (p. 103)</td>
<td><a href="http://www.sa.gov.au/__data/assets/pdf_file/0018/30069/Norwood_Payneham_and_St_Peters_Council_Development_Plan.pdf">http://www.sa.gov.au/__data/assets/pdf_file/0018/30069/Norwood_Payneham_and_St_Peters_Council_Development_Plan.pdf</a></td>
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## Appendix 3  Stormwater Management Plans

<table>
<thead>
<tr>
<th>Council</th>
<th>SMP</th>
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<tbody>
<tr>
<td>The City of Campbelltown</td>
<td>This Council has an “Environmental Management Plan 2020” and one of the tasks listed is to monitor the implementation of the Urban Stormwater Management Plan. There is no reference to stormwater management in the City of Campbelltown Development Plan.</td>
</tr>
<tr>
<td>City of Marion</td>
<td>City of Marion has a stormwater management plan with City of Holdfast Bay. It also has a draft Hallett Cove Creeks Stormwater Management Plan. The final draft is dated 18 January 2013. The draft plan can be accessed through the following website - <a href="http://www.marion.sa.gov.au/page.aspx?u=50&amp;c=14888">http://www.marion.sa.gov.au/page.aspx?u=50&amp;c=14888</a></td>
</tr>
<tr>
<td>City of Playford</td>
<td>The Council has an Appendix A – Stormwater requirements report that outlines what developers must do in order to get Development Approval. They are required to submit an overall stormwater management plan to the Council. The report encourages the use of WSUD treatment methods which should be analysed and incorporated into the design. <a href="http://www.playford.sa.gov.au/webdata/resources/files/201506_APPENDIXA_STORMWATER_FINAL.pdf">http://www.playford.sa.gov.au/webdata/resources/files/201506_APPENDIXA_STORMWATER_FINAL.pdf</a></td>
</tr>
<tr>
<td>City of Port Adelaide Enfield</td>
<td>City of Port Adelaide Enfield will be developing their Lefevre Peninsula Stormwater Management Plan during the second half of 2015. Their information sessions are being held in July and they have released a brochure to engage and inform the community as to what they hope to accomplish. <a href="https://www.portenf.sa.gov.au/webdata/resources/files/Info_LefevrePeninsulaSMPInformationBrochure.pdf">https://www.portenf.sa.gov.au/webdata/resources/files/Info_LefevrePeninsulaSMPInformationBrochure.pdf</a></td>
</tr>
</tbody>
</table>
References

Alluvium and Kate Black Consulting (2012), Business Case for Water Sensitive Urban Design Capacity-Building program for South Australia, Adelaide, South Australia.


City of Onkaparinga (2015), City of Onkaparinga Development Assessment Panel Minutes 12 March 2015, South Australia.


Department of Planning and Local Government (2010), Far North Region Plan, Government of South Australia.

Department of Planning and Local Government (2010), Land Division – How best practice land division can contribute to household energy efficiency, Adelaide, Government of South Australia.

Department of Planning and Local Government (2010), Aquaculture policy, Adelaide, Government of South Australia.

Department of Planning and Local Government (2010), Desired Character Statements, Adelaide, Government of South Australia.


Department of Planning and Local Government (2011), Kangaroo Island Plan, Government of South Australia.

Department of Planning and Local Government (2011), Limestone Coast, Government of South Australia.

Department of Planning and Local Government (2011), Mid North Region Plan, Government of South Australia.

Department of Planning Transport and Infrastructure (2012), *Eyre and Western Region Plan*, Adelaide, Government of South Australia.


Legislation

Arkaroola Protection Act 2012

Building Code of Australia

Community Titles Act 1996

Crown and Land Management Act 2009

Development Act 1993

Development Regulations 2008

Environment Protection Act 1993

Local Government Act 1999

Local Government (Stormwater Management) Amendment Act 1999

Marine Parks Act 2007

Metropolitan Drainage Act 1935

Native Vegetation Act 1991

Natural Resource Management Act 2004


Public Environmental Health Act 1987

Real Property Act 1886

Recreational Greenway Act 2000

River Murray Act 2003

Sewerage Act 1929

South Australian Water Works Act 1932

South Australian Water Corporation Act 1995

South Western Suburbs Drainage Act 1959

Strata Title Act 1988

Urban Renewal Act 1995

Water Industry Act 2012

Water Resources Act 1997

Waterworks Act 1932