

A Framework for Assessing the Organisational Capacity of Councils for WSUD

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Abstract. This paper presents a framework to assess an organisation's implementation of WSUD. The framework builds on the published literature as well as research and projects undertaken by the author. The key outcome of this paper is a practical method for the strategic assessment of an organisation's capacity for WSUD and identification of implementation gaps. Once identified these gaps can be pro-actively addressed by an organisation through targeted programs and initiatives.

The framework presents an "ideal" or "best practice" organisation, whereby WSUD is integrated into all of the organisation's practices and processes. The ideal organisation acts as a benchmark to strategically assess WSUD gaps faced by an organisation. Importantly the framework is presented pictorially highlighting interlinkages between elements of best practice, such as a receiving water health, council policies and development within a catchment. Presenting it in such a way allows the framework to be used as a pro-active resource for councils where they are able to identify their own WSUD implementation and importantly what key issues they may have in WSUD implementation.

The framework has been applied to the forty-six councils in and around Sydney to determine the level of WSUD adoption in the region, with the results outlined in the paper. Building on the benchmarking key capacity projects and needs of councils are identified.

1 Introduction

Over the past few years local government has increasingly become armed with a range of knowledge and tools to facilitate the uptake of WSUD. This evolution has been supported by research into organisational capabilities (Brown et al 2006, van de Meene and Brown 2007), the role of individual champions (Taylor 2008), and greater understanding of the design and effectiveness WSUD technologies (Monash University, FAWB, and eWater CRC). Complementing this research, most councils have stormwater levies, planning provisions to support WSUD and several councils are offering incentives to householders who retrofit WSUD into existing dwellings. Knowledge and skills of officers implementing WSUD are harnessed by a growing maturity of the industry, coupled with comprehensive conceptual and detailed design guidelines (eg Water by Design SE Queensland and Melbourne Water).

Despite this evolution in practice, WSUD is being applied to varying degrees by local government in the Sydney Region. Within a vacuum of state leadership, councils are evolving stormwater practice based on their own needs, priorities and strengths. Examples of this include programs such as Marrickville's "Urban Stormwater Integrated Management" Program, Fairfield Council's Five Creeks Program, City of Ryde WSUD guidelines and tools project, and Landcom's WSUD Targets and Strategy documentation.

With the unfulfilled assurances of the NSW Department of Environment and Climate Change in delivering the Managing Urban Stormwater documents, councils are developing their own WSUD guidelines (Blacktown, Fairfield and Ryde) or utilising guidelines from other regions.

With councils implementing WSUD across Sydney at varying levels with a clear lack of coordinated direction, a key issue for councils is “where to next?”, or “what else can we do?”. These questions stem from a desire to identify implementation gaps and develop programs to address those gaps, as well as overcome obstacles within the organisation.

The framework developed in this paper seeks to assist councils in answering these questions by identifying gaps in WSUD implementation that they may be facing and hence act as a guide to sustaining WSUD practice. The framework has been developed by the author through research and through three key projects which have included assessments of 46 councils in the Sydney Region. The three projects included work for the Botany Bay Coastal Catchment Initiative (BCCI 2008), WSUD in Sydney Program (Equatica 2008) and the Sydney Catchment Authority (Elton Consulting 2009).

2 Frameworks to Assess an Organisations Capacity for WSUD

Frameworks to assess the performance of an organisation in implementing and sustaining WSUD have been identified in several studies including Brown et al (2006), van de Meene and Brown (2007) and McManus (2004 and 2006). The seminal work by Brown et al (2006) identified 26 WSUD capacity needs of councils across the attributes of knowledge building, professional development, organisational strengthening, directive reforms, and facilitative reforms. The frameworks reviewed all propose a series of attributes against which to define or measure an organisations capacity. For example van de Meene and Brown (2007) developed a framework for assessing an organisation according to organisational capacity attributes shown in Table 1.

Table 1: Capacity attributes for WSUD (after van de Meene and Brown 2007)

External Rules & Incentives	<ul style="list-style-type: none"> - Government commitment and political leadership to WSUD - Established and effective community participation mechanisms - WSUD legislation - Clear roles and responsibilities are defined for all organisations - Regulations and policy tools encourage WSUD
Inter-organisational	<ul style="list-style-type: none"> - Mechanisms for coordination and cooperation between organisations - Mechanisms for clear and effective communication exist - Urban water related information is shared and communicated - Research partnerships with local universities are developed
Intra-organisational	<ul style="list-style-type: none"> - Organisation employs staff to undertake technical activities - Organisation has processes to attract, develop and retain staff - Organisation has adequate scientific and technical knowledge - Assessment of WSUD projects by people with WSUD skills - Organisation encourages innovation
Organisational	<ul style="list-style-type: none"> - There exists strong policy framework for WSUD - There is clear senior executive support for WSUD - Funding stream for WSUD exists - O&M is well acknowledged and addressed in all projects
Human Resources	<ul style="list-style-type: none"> - Staff have skills and knowledge to undertake tasks - Staff have appropriate qualifications to undertake tasks - Staff can think laterally and exhibit innovation - Staff are aware of available opportunities

These frameworks, along with research and projects undertaken by the author, have been used as the basis for identifying an “ideal” organisational structure for councils in Sydney whereby WSUD is integrated into all of councils practices and processes (Figure 1). This framework being based on work with councils is more specific and comprehensive than those developed to date and can be used as a checklist for identifying the gaps that councils have in implementing WSUD and therefore to identify projects to address capacity deficits.

Figure 1 identifies a council’s organisational structure on the top right hand side of the figure. Effective uptake of WSUD includes the horizontal and vertical support and integration of WSUD concepts through the organisation. Often leading WSUD uptake is a “champion” who works in a relevant department and is able to move through and push a sustainable water agenda (see work by Taylor 2008). The organisation is supported by a series of external rules and incentives and inter-organisational relationships through Regional Organisations of Councils (ROCs), state government policy, and initiatives / projects of other councils.

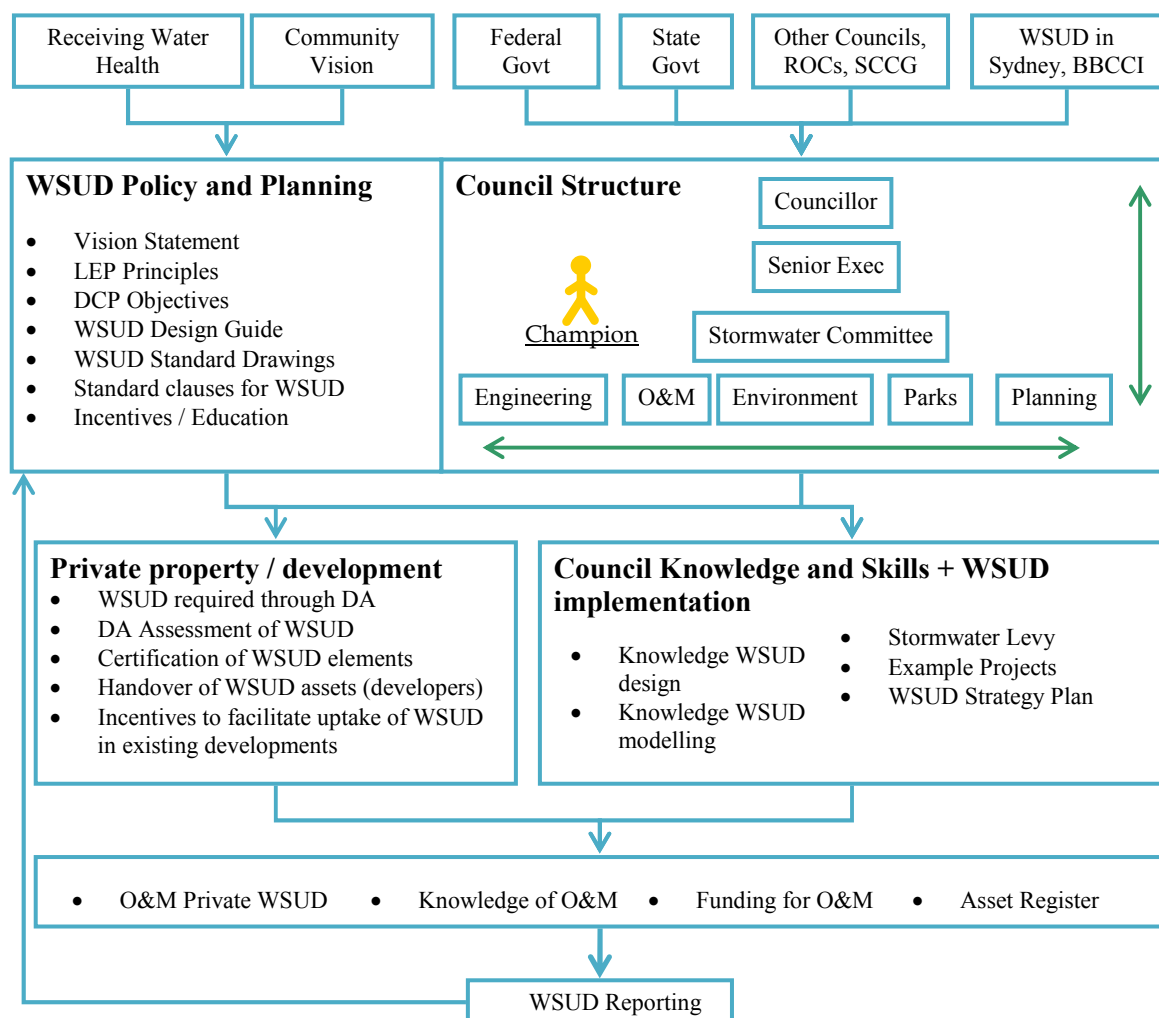


Figure 1: An “ideal” council showing how WSUD is integrated through the organisation and into development within the LGA.

To facilitate WSUD through development in the organisation, the “ideal” organisation has developed a suite of WSUD planning policies including WSUD principles in the LEP, objectives and targets as provisions within council’s DCP, a WSUD design guide and standard drawings for developers to ensure the consistent application of WSUD in all developments that require WSUD. Importantly the WSUD policies are guided by the needs of receiving waters and objectives relating to improving these receiving waters, along with community values.

Development on private land that is undertaken within the LGA relates to and is supported by the policy documents. All relevant council projects such as carpark, road and footpath upgrades, parks and open space upgrades, town centre redevelopments, building redevelopments and retrofits incorporate WSUD.

Further uptake of WSUD into the private domain and retrofits is addressed through incentives and education, such as incentives for rainwater tanks and other measures, and education on WSUD initiatives. To strategically plan for WSUD projects, council has a realistic strategy to respond to the needs of receiving environments and reflects the DCP objectives. A stormwater levy is spent on implementing and supporting WSUD actions, and builds on demonstration projects that have already been undertaken by council.

Importantly there is a good understanding of the DA assessment of WSUD private development that comes through council and operation and maintenance is understood and integrated. Operation and maintenance and the handover of WSUD infrastructure constructed on private lots as a requirement of the DA process are fundamental issues that councils are dealing with. The last section of the framework is a reporting mechanism whereby all of the information that the organisation generates on WSUD is back into council’s policies and practices.

3 Current Status of WSUD in Sydney

NSW Government leadership on stormwater management and broader WSUD has significantly eroded since the end of the Stormwater Trust. The fragmented approach to water management has seen stormwater quality pursued as a poor cousin to the broader potable water needs and the “Dams + Recycling + Desalination + Water Efficiency” focus of the Metropolitan Water Strategy.

While local government has the ability to raise funds through a stormwater levy, and WSUD is required for developments in the Growth Centres, there is no State driven common goal or direction for WSUD. This is different to both Queensland and Victoria where both States have legislated the requirement for WSUD in all new developments which either change an existing landuse, or develop two or more allotments, respectively.

The current status of WSUD for 46 councils in the Sydney Region, utilising the framework presented in Figure 1, has been determined by the author through the three projects identified in the introduction.

At a regional level both the WSUD in Sydney Program and the Botany Bay CCI project are seen as important drivers and supporters of WSUD, whereas the Sydney Metro CMA and DECC have a limited role in supporting WSUD. Other regional drivers are the Sydney Coastal Councils Group, who is consistently recognised as a pro-active regional group that has leverage with senior management, and able to address outstanding questions through research linkages. The

Cooks River Sustainability Initiative (CRSI) is a local program working with the councils in the Cooks River Catchment and delivering WSUD projects. Other regional groups such as ROCs facilitate interactions between councils; however WSUD is not a key driver, and research organisations in Sydney are limited in their engagement with WSUD.

With the absence of State leadership, councils in the Sydney region have adopted WSUD in varying ways. As shown in Figure 2, assessment of council policies and plans shows that 40% of councils have adopted WSUD provisions within their DCPs, and 7% have WSUD LEP principles. A key issue relating to the councils with these provisions is the inconsistent nature of the provisions as well as the fact that there is limited recognition of receiving water health and community involvement in developing the provisions. For the councils with DCP provisions often the provisions are not supported by appropriate technical guidelines or standard drawings are to guide developers, nor is there strong skills within councils to assess WSUD DAs. Two crucial elements, asset handover and long-term operation and maintenance, if not adequately addressed by council, negate the effectiveness of WSUD in new developments.

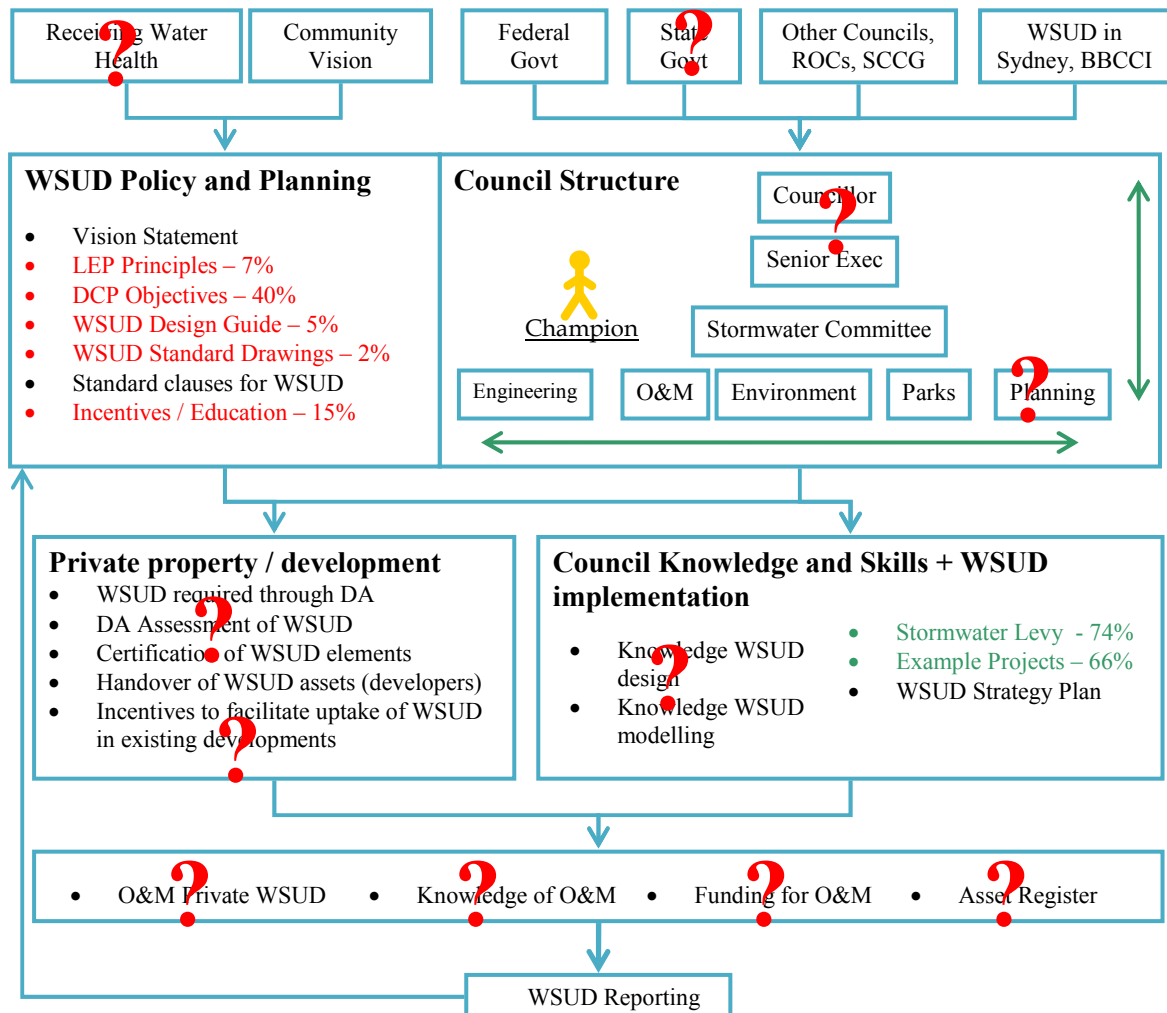


Figure 2: Uptake of WSUD elements by the 46 councils in and around Sydney.

Retrofitting WSUD into existing developments is being applied by 15% of councils which offer incentives and education such as Marrickville Council's sustainable water ambassadors and "WSUD on Your Property" programs, as well as several councils offering rainwater tank rebates.

Within their own works councils are implementing WSUD, however it is yet to become mainstream for the majority of councils, and there exists inconsistent support through the organisation, both horizontally and vertically. As a result WSUD is not always translated into council's activities such as road and footpath upgrades, and park and town centre planning. Most councils now have a stormwater / environment levy (74%), and 66% of councils have WSUD demonstration projects. Interrogation of stormwater levy expenditure shows that for some councils, this revenue is spent solely on flooding and drainage works, and hence not on furthering WSUD within the LGA.

Operation and maintenance and costing of WSUD elements remain some of the largest gaps in both knowledge and practice. With the requirement for developers to install WSUD elements, often there are limited records through an asset register on the location of these elements, and with no handover, these elements are not maintained and do not meet the original intent of the requirements.

4 Needs of councils to further WSUD in Sydney

The gaps in WSUD implementation and practice outlined in the discussion above, have been identified as question marks in Figure 2. The acknowledgement of these gaps in practice as well as interviews of stakeholders has led to the development of a series of actions to further WSUD in the Sydney Region. These issues have been translated into a series of key needs for councils, namely:

- Need for receiving water health and community engagement processes to direct policy and objectives for development and projects within an LGA.
- Greater planning involvement in WSUD, as most WSUD interventions have been based on engineers and environment staff. Planning staff are important to ensure new developments, masterplans and town centre upgrades include WSUD, as well as ensuring the rigor of planning provisions and their assessment.
- The identification and use of technical and other supporting documentation to direct developers seeking to implement WSUD within an LGA.
- Greater understanding and knowledge of WSUD incentives that can be used by councils to facilitate WSUD implementation in existing developments. These incentives such as rebates on rainwater tanks, and workshops on WSUD in properties are slowly being developed by councils but often in isolation.
- WSUD reporting and an adaptive management process whereby lessons learnt are incorporated into future WSUD actions and activities of councils.
- Knowledge of what other councils are doing – a knowledge base of typical projects that councils are undertaking so that officers can contact councils with similar issues and problems with technologies and gain advice on how to overcome these specific barriers to WSUD implementation.
- Knowledge of O&M including how to incorporate O&M into WSUD projects, DA assessment of WSUD, handover of WSUD assets from private developers, O&M fact sheet, whole of life cycle costing; and maintenance training, and how to assess whether a WSUD element is working properly.

5 Conclusions

The vacuum of State policy and leadership has led to all councils in Sydney developing their own approach to WSUD based on the organisation's strengths, weaknesses and priorities. While there has been a significant evolution in organisational capacity to implement WSUD, there still does remain a body of strategic WSUD knowledge which is somewhat of a black-box to most practitioners.

Through a desire to assess the current WSUD practices of councils and the need to develop actions to support councils, a framework for an ideal councils has been developed. Based on both existing literature and a range of practical projects with councils the framework identifies a series of strategic elements which together can address short-comings in WSUD policy and practice within an LGA.

Interlinkages within the framework are important as, for example, WSUD planning provisions developed in the absence of knowledge of the receiving environment, adequate design advice, or council's ability to accept the maintenance requirements can render such requirements wasted.

It is recommended that councils apply this framework as a starting point for the review of that own WSUD initiatives. The identification of gaps can lead to the development of projects which in conjunction with on the ground activities can sustain the long-term efficacy of WSUD.

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