

Water Sensitive Urban Design (WSUD) Asset Management – Defining the Problem

Thursday 4 June 2015

Purpose

This document captures key challenges and discussion points from participants at the workshop, *WSUD Asset Management – Defining the Problem*, delivered on 4 June 2015 in partnership with Clearwater and Stormwater Victoria.

The 2.5 hour workshop introduced participants to the concept of problem definition and a toolkit teaser that could be used to work through a real life problem on WSUD Asset Management. One of the key aims of this workshop was to highlight the importance of spending time defining the problem – exploring and unpacking – to understand the root cause before jumping into solution mode.

This document outlines the themes, broad problem statements, discussion points and toolkit examples (refer to Appendix A) from the day.



60 water practitioners attended the workshop which was located by the scenic Yarra River

Workshop design

Participants were asked to select from four pre-defined themes relating to WSUD Asset Management and move into these groups for the activity session. A variety of data sets were used to develop the overarching themes and problem statements (i.e. directly from participants, Clearwater past training data and needs assessment and Melbourne Water Living Rivers needs analysis).

Four overarching themes included:

1. Planning
2. Design
3. Construction and Installation
4. Operations and Maintenance

Themes, problem statements and discussion points

Theme 1: Planning

Broad problem statements:

- How do we value a WSUD Asset
- How can we effectively communicate the benefits of WSUD
- How can we secure funding for WSUD
- How might we gain senior support for WSUD
- How can we improve communication and coordination between departments (roles and responsibilities)

Key discussion points:

- How can we communicate the benefits of WSUD?
This was seen as a key challenge for participants within this group. When budgets are restricted all aspects of funding are highly contested, so we need to be able to better estimate the value and communicate the benefits of WSUD, especially the environmental and social benefits. This will at least put WSUD in the same playing field as other services competing for funding.
- How can we ensure natural assets are maintained?
In the past, drainage was linked to an engineering asset budget and used an asset management system with defined levels of service and maintenance needs. Sometimes it is difficult to place natural assets and WSUD in this framework. The management framework needs to be adjusted to accommodate multi-disciplinary skills relating to both drainage and landscape maintenance and to value natural infrastructure as an asset.
- How can we ensure assets are delivering the intended service?
We tend to jump straight to things we can build, but often service provision involves a broader approach. The types of service needed may also change over time, meaning that the purpose and expectations of the performance of an asset changes. We need to have a clear set of objectives to judge our asset performance against to ensure we are always delivering the best service
- How can we better communicate between stakeholders?
Integrated water management involves cross working between organisations who have historically been set up with specific responsibilities. A lot of the barriers we find in delivering integrated water management can often be linked to historical structures and mechanisms which were designed for managing a single part of the water cycle. We need to re-think both organisational processes and enhance communications between partners to smooth the way forward.

Theme 2: Design

Broad problem statements:

- How can we ensure good design outcomes
- How can we design for effective maintenance

Key discussion points:

- Designs should be informed by the level of service that can be adequately provided by the asset owner.
- To avoid asset redundancy, assets should be designed to ensure they have some resilience to variable levels of service. Expecting an optimal level of service from the asset owner may not be realistic.
- Maintenance of assets needs to be considered at forefront of the design phase not as an afterthought. Operations and maintenance staff (those actually undertaking operations) must be involved and consulted through various design stages. Maintenance schedules associated with an asset should be developed in collaboration with relevant staff - open communication is the key.
- Are simpler easier to maintain assets (or arrangements of assets) preferable to implementing higher performing but more operationally complex assets? There are some good examples of designs that meet these criteria.
- Deviation from standard designs can result in need for specialist maintenance requirements.
- Better understanding of total lifecycle costs can and should be used to help inform designs.

Theme 3: Construction and Establishment

Broad problem statements:

- How do we ensure assets are constructed as per design
- How do we ensure contractors building systems understand how it works
- How can we ensure assets are handed over and in good working order
- How can we ensure assets are recorded in the handover and with appropriate maintenance schedules

Key discussion points:

- Ensure the industry is sufficiently resourced to enable adequate supervision throughout the construction phase to ensure projects are constructed as designed and that any variations are to the asset owner's satisfaction. For councils this may require employing extra development supervisors and ensuring their in-house handover systems are adequate and efficient, meaning the asset managers receive the right data in a timely manner.
- Organising a pre-construction meeting linked to above ensures that council supervision starts before construction begins.
- Back to front solution development ensures that maintenance staff are included in the planning and design phase of a project. For developer projects this might necessitate the development of standard design drawings or a set of simple guidance document outlining what council will and won't be happy accepting as an asset. This will also help to overcome handover issues post-construction.
- There is a need for training and skills development for the wider industry including construction workers, excavation operators, and council inspectors. The development of a certified skills based training course and adding a requirement of only tendering to companies with certified employees could be a way to ensure the skills are developed within the industry.

Theme 4: Operations and Maintenance

Broad problem statements:

- How can we secure funding for WSUD maintenance
- How do we ensure all assets are maintained adequately and operate effectively
- How do we prioritise which assets and when

Key discussion points:

- How do we ensure adequate resources including funding are allocated to looking after WSUD assets? Often WSUD assets are inherited (from developers) assets with little or no consideration to the resources required to maintain them. Maintenance teams are often then given these assets to maintain with no additional resources to manage them. Cost benefit analysis of proposed WSUD assets would help determine future maintenance needs and highlight the need for resources to be provided. There is also a greater need for recognition of the value that WSUD infrastructure provides as well as the legislated obligations councils have to maintain them.
- How can we develop the skills to maintain WSUD assets within maintenance teams? Many council maintenance staff feel they lack the needed skills and information to maintain or renew WSUD systems. There is often no communication with them during the design and construction process and no information on the purpose, function and maintenance needs of assets provided. There is potential

for these issues to be addressed through provision of training and processes to ensure that documentation of maintenance needs is required and provided to the relevant people at the planning and handover stages. More recent approaches to WSUD that consider maintenance during earlier planning and design stages (and involve maintenance staff) may help to address some of these challenges.

- What are the costs and benefits of WSUD assets?
The expected benefits and services to be provided by WSUD assets are often unclear. Does green mean good? The purpose and function of assets needs to be clearly defined. There is an overall lack of valuation of the benefits of WSUD, in terms of monetary, quantitative and intangible benefits of green infrastructure and recognition of these assets within other (e.g. grey) council assets.

The lack of clear valuation also makes it difficult to establish clear service levels for assets. Assets may have a stormwater function but also be expected to meet aesthetic requirements to satisfy the community. More guidance on how to establish service levels is needed.

Many WSUD assets are small, with limited benefits and have relatively high maintenance costs. Would it be more cost effective to focus efforts on a smaller number of larger assets or are there are other benefits of distributing these that are currently not quantified and justify higher maintenance costs?

Next steps

Next steps for participants to consider:

- Share your problem statement and toolkit with your wider team – what did you learn, what ideas were discussed, what action steps were identified that you could initiative
- Re-connect with workshop participants to further explore your discussion points and/or ideas
- Share this workshop summary with your wider team to open communication lines around the challenges being faced on WSUD asset management – how are the problems being approached and defined to enable a better understanding of the root cause

Clearwater and Stormwater Victoria will be using the data captured on the day and participant feedback to inform future capacity building opportunities to water practitioners. Enquiries can be made via the contact details below.

Contacts

Clearwater: info@clearwater.asn.au
T 03 9679 7835
clearwater.asn.au

president@stormwatervictoria.com.au
T 0488 659 446
www.stormwatervictoria.com.au

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