

Status of WSUD in South Australia

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Bioretention basin, Valiant Road, Port Willunga, City of Onkaparinga

Background

- Research was by CSIRO and UniSA, funded by the Goyder Institute for Water Research
- Goal: *To determine the what WSUD exists in SA, what drove it, and what impediments exist to further implementation*



Bioretention basin, City of West Torrens

Methodology

- Developed a catalogue of WSUD systems
 - Interviewed a range of practitioners
 - What exists
 - Opinions and experience of WSUD
 - Impediments to WSUD



Bioretention basin, Mile End, City of West Torrens

The Catalogue

- Essentially a list of sites and features
- Locations are detailed and split into 'features' at each location e.g.

- 1 site - Unity Park
- 13 features: 11 x biofiltration, one wetland, and ASR infrastructure



What wasn't included

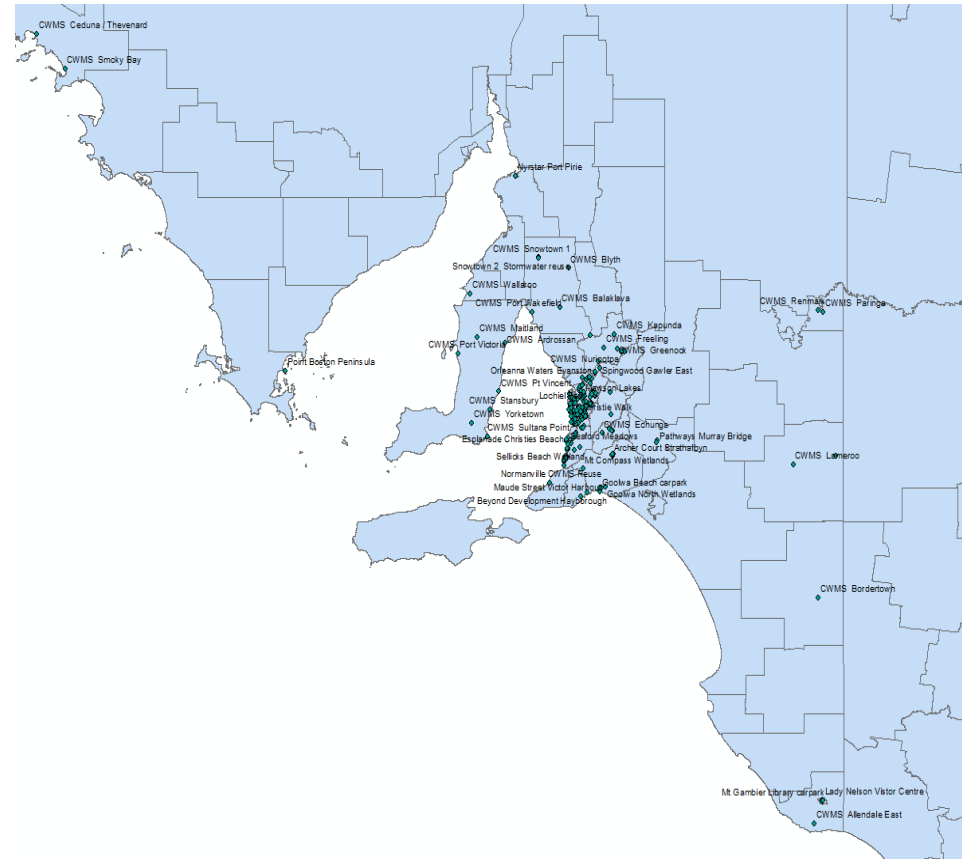
- Non structural WSUD measures
- Gross pollutant traps
- Detention basins
- Lake structures



WSUD Sites

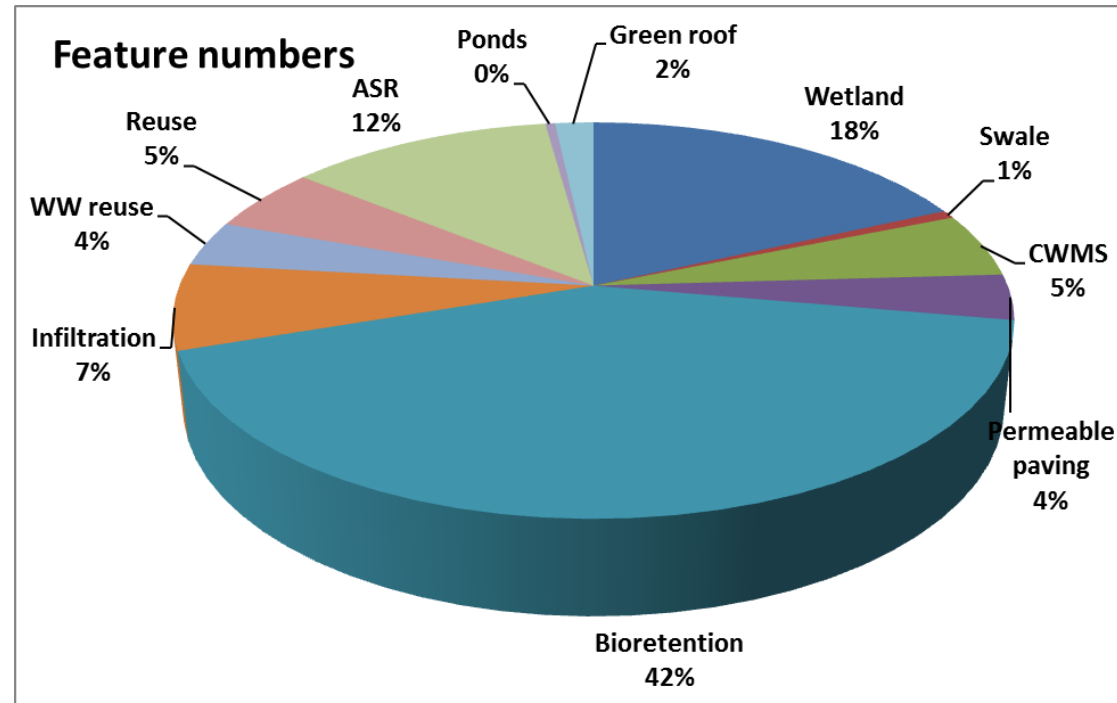
- There were 224 sites with WSUD

- Mainly Adelaide metro
- Regional: CWMS reuse



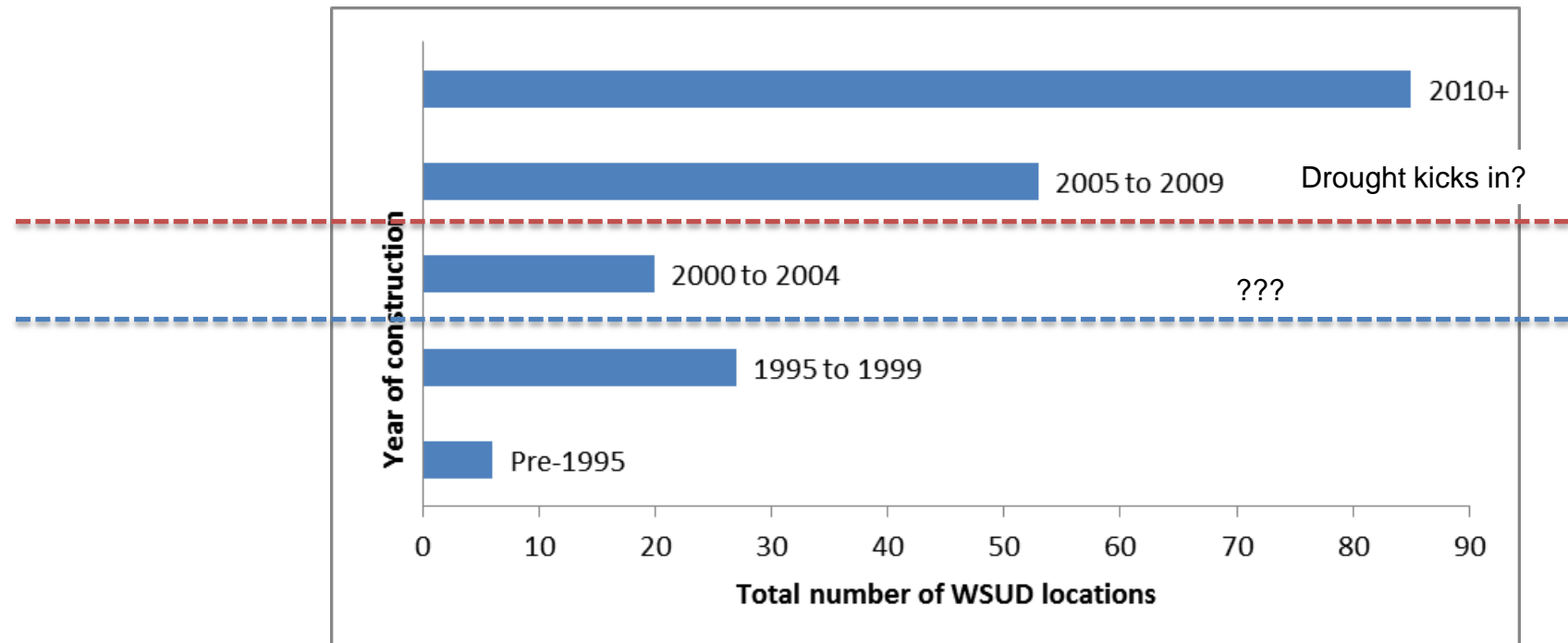
Overall Findings

- 460 'features' at these sites
- Bioretention was dominant



Growing Trend?

- Data on time of completion indicates implementation is increasing



Gross Pollutant Traps

- Excluded from catalogue BUT discussed
- Ongoing concerns with maintenance cost and access to privately owned systems



Image courtesy of Adelaide Pipeline Maintenance Services
http://apms-sa.com.au/ground_penetrating_radar/services/gross-pollutant-trap-cleaning-2/

Wetlands

- 84 wetland sites
- Much variation in definition and how they should be done



Curtis-Stebonheath wetland, City of Playford



Parafield airport wetland (covered), City of Salisbury

Bioretention/Rain gardens

- 194 plots of bioretention
- Popular in established urban areas – a way to provide green space as infill progresses
- Issues with construction



Unity Park, City of Salisbury



Lochiel Park, City of Campbelltown

Managed Aquifer Recharge

- 55 sites with ASR
- Not all operational
- Economy of scale tends to be required
- Administrative burden to be addressed



Bennett Road drain MAR system

Wastewater Reuse

- 17 sites using recycled wastewater from all metropolitan WWTPs
- Irrigation and other outdoor reuse



Image courtesy of Leed constructions:

<http://www.leed.net.au/our-projects/glenelg-to-adelaide-parklands-gap-recycled-water-project>



Image courtesy of Adelaide City Council:

<http://www.adelaidecitycouncil.com/assets/documents/FACTSHEET-GAP-water-quality.pdf>

CWMS

- 172 community wastewater management systems according to LGA – 24 sites noted with reuse
- Work conducted by LGA to encourage uptake and provide a management model



Kapunda CWMS (image courtesy of Alano Water)

Permeable Paving

- 19 sites
- Typically parking areas
- Good for hard to drain locations (e.g. lanes)
- Clogging and maintenance?



Laneway, Henley Beach, City of Charles Sturt



Clogging, Old Treasury Lane, Adelaide

'Green' Roofs and Walls

- 5 sites
- Very popular features with architects and popular media



Green Roof, ANZ Building, Adelaide
Image courtesy of Mostafa Razzaghmanesh

WSUD Discussion Points

- Uncertainty regarding cost
- Uncertainty regarding maintenance
- Lack of formal maintenance programmes
- Adoption not always strictly related to 'cost'



Bioretention in Wattle Street, Unley

WSUD Discussion Points

- Concerns over infill development
- WSUD targets or WSUD levy?
- Development industry was supportive of WSUD – especially large developers
- Exceptional goodwill!



Dry Creek, Mawson Lakes

What Next?

- Proposed Goyder Project
 - Phase 2
 - More specific research into the effect of WSUD on urban infill
 - Standardisation of WSUD as a part of Stormwater Management Planning



Minor system overflow, Para Hills

Personal reflections

- There are a lot of solutions. Implementation will take time and will involve trial and error
- Widespread plots of WSUD – how to manage?
- We have an opportunity to observe interstate policies objectively



A duck sharing it's opinions on WSUD,
Springbank Waters

Acknowledgements

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- Local/State Government
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- Goyder Institute for Water Research



Springbank Waters, downstream of Kaurua Park

Project Team

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