



The case for water sensitive urban design

Mellissa Bradley, Program Manager



*“Water is an essential element
of placemaking”*

Tony Wong (2011)



Oaklands Wetland

Source: Michael Mullan



Source: planning.wa.gov.au

Water sensitive communities



Liveable

Green & blue natural landscapes enhancing human health & wellbeing

1°C

↑ in daytime temp. ↑ can increase cooling demand in Adelaide's CBD by 1.5 million kWh per year = 1000 tonnes in CO₂ emissions

10%

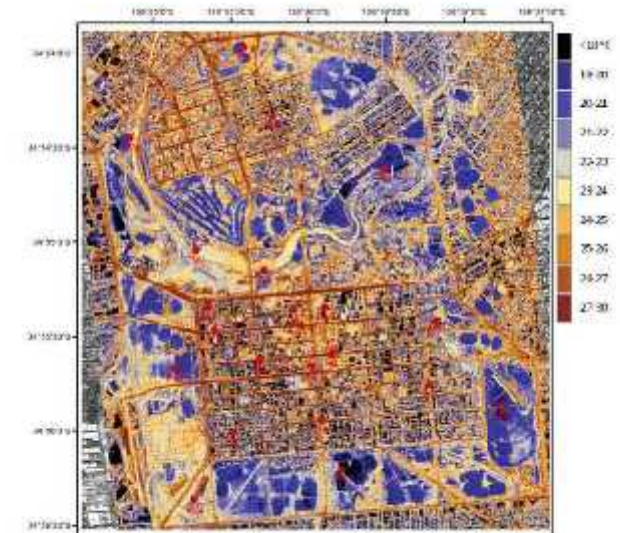
↑ in tree cover gives a reduction in land surface temp of between 0.5 – 1.0°C

43°C

threshold temperature for Adelaide above which mortality rates increase by 2- 10%

40%

community less likely to be overweight living in greener neighbourhoods (European study)



Surface brightness temperature of the CBD & North Adelaide, early hours of 7 March 2011
Source: Flinders University

Liveable



Lightsview infill development
Source map: www.lightsview.com.au



Water sensitive communities



Resilient

- integrated infrastructure provides protection against flooding
- diversity of water sources = security
- freedom from water restrictions
- treated sewage effluent - a non-climate dependent resource



No easing yet for SA watering bans

Updated 10 Nov 2009, 8:11am

30 Year Plan for Greater Adelaide



- 70% of new housing stock from infill development and
- remaining 30% from greenfield sites
- 258,000 net additional dwellings in Greater Adelaide (including Murray Bridge) by 2040
- population increase of 560,000
- downward trend in median allotment sizes
 - 375 m² in 2011-13 compared with
 - 520m² in 2002-03 (UDIA, 2013)



Dana McCauley, Stonnington Leader
May 04, 2015 12:00AM

Water sensitive communities



Sustainable

More healthy natural ecosystems in urban environments



Bowden Urban Village

77%

Stormwater contribution to total annual load of sediments to marine waters = 6,180 tonnes

150t

Stormwater contribution of nitrogen to the marine environment p.a.

56

No. of ASR schemes operating in the Greater Adelaide area as at 2012, recharging groundwater.

10%

Impervious cover at which stream health is impacted



Source: *clear.uconn.edu*. Centre for Land use education and research, Connecticut

Water sensitive communities



Productive

Enhance productivity and economic prosperity

- food production, and irrigated crops
- deferring/eliminating infrastructure augmentation
- avoiding operating costs for potable supply schemes
- enhancing tourism and commercial centres
- strategic and opportunistic investment in infrastructure renewals
- market advantages for residential developers



Adelaide Zoo entrance
Source: Water Sensitive SA

Pillars of a water sensitive city/ community



- Cities as Catchments
- Cities Providing Ecosystem Services
- Cities Comprising Water Sensitive Communities



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LIVEABLE WATER SENSITIVE COMMUNITIES.

Water sensitive community/city - are we there yet?

