

CRC for  
**Water Sensitive Cities**

# **City of Unley Heat Island Modelling & Opportunities**



Australian Government  
Department of Industry,  
Innovation and Science

**Business**  
Cooperative Research  
Centres Programme

# What is the WSC Toolkit?

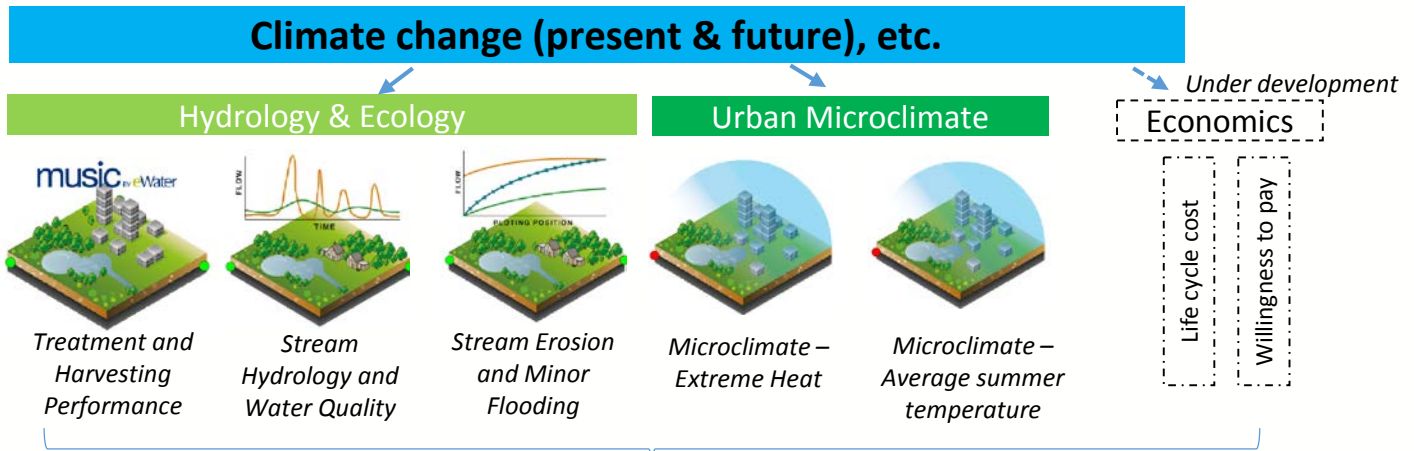
A numerical tool that support the strategic planning and conceptual design of stormwater management by:

- ◆ Quantifying the multiple benefits, including
  - ◆ *Stormwater treatment & harvesting*
  - ◆ *Urban stream health*
  - ◆ *Local microclimate*
- ◆ Understanding future rainfall variability and its applications for urban water management
- ◆ Evaluating the overall performance of potential green infrastructure scenarios



# Overall concept

Drivers



Responses  
(modules in  
WSC Toolkit)

Consolidation



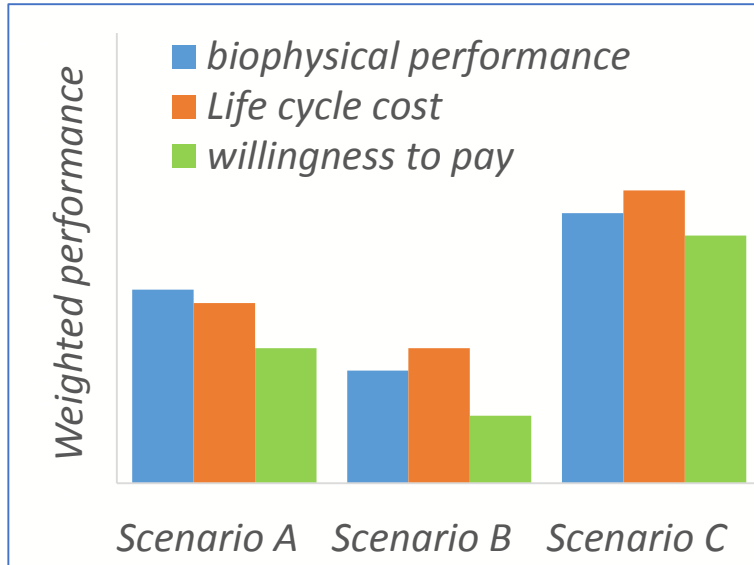
Aspects of a  
Water Sensitive City



**Communication outcomes...**

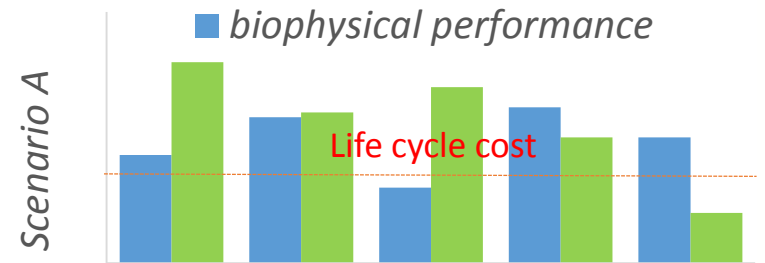
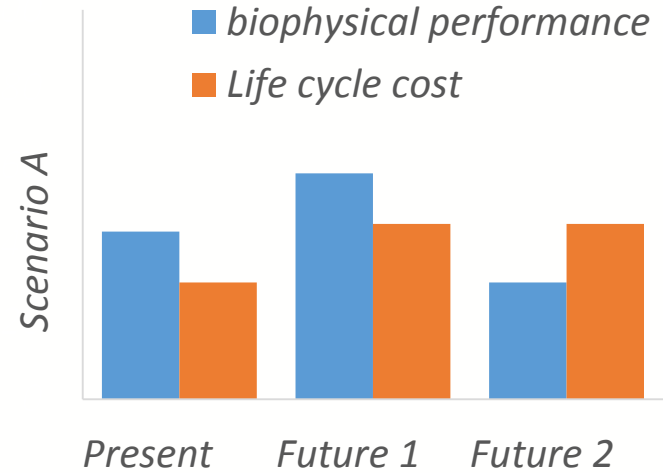
# Overall concept

## Communication outcomes...

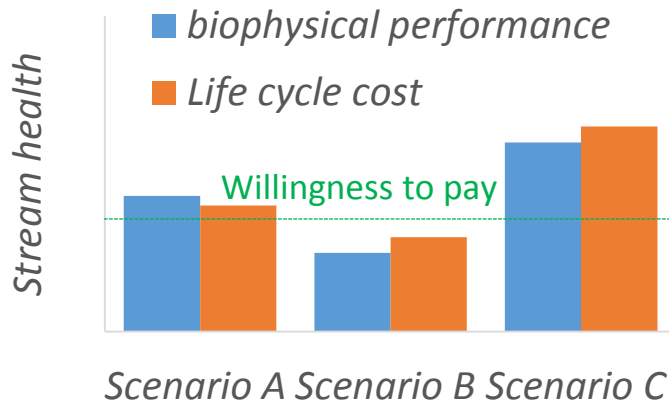


Future climate

Five aspects of each scenario



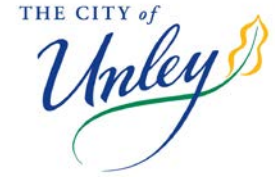
Specific aspect of different scenarios



“...allows well-informed collaborative decision-making by providing assessment of various aspects of different options...”



# Case Study: City of Unley



*Quantifying the urban microclimate benefits associated with green infrastructure interventions*



- Area ~14 km<sup>2</sup>
- Predominantly residential

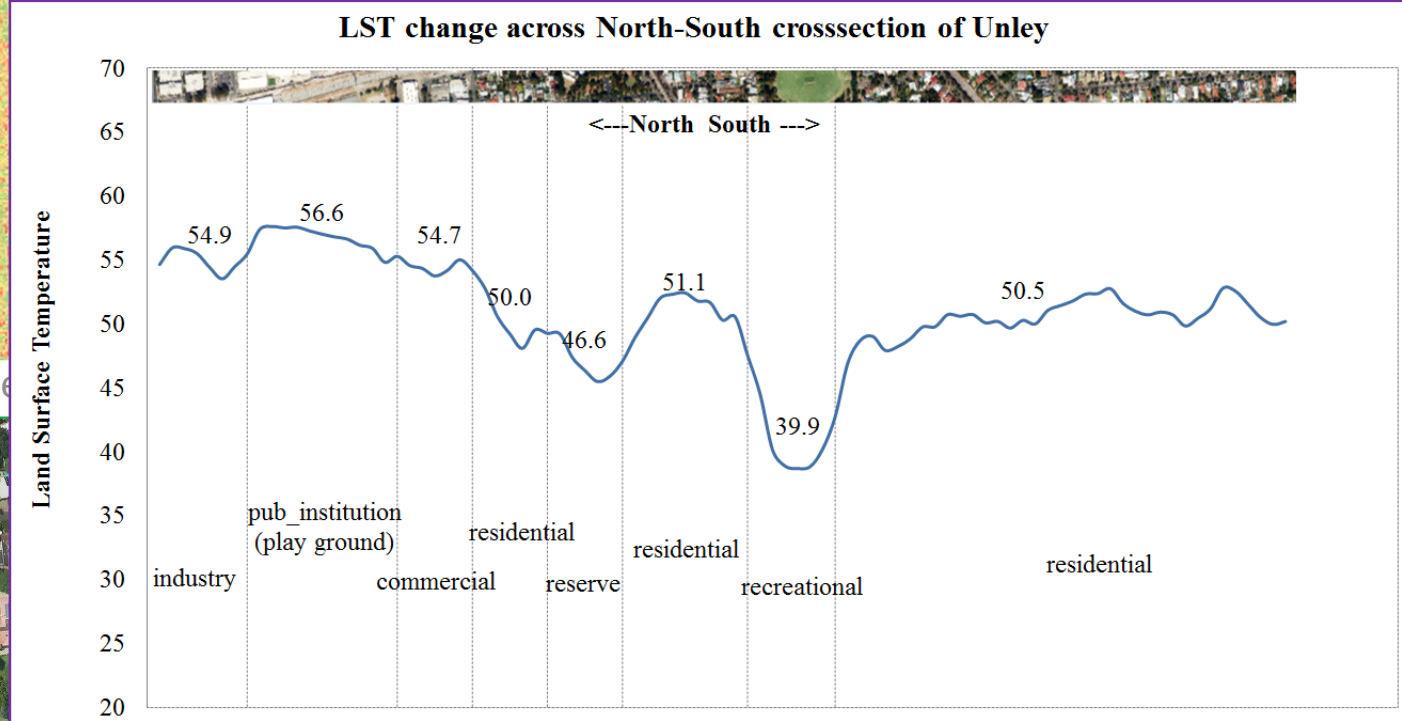


1. showgrounds

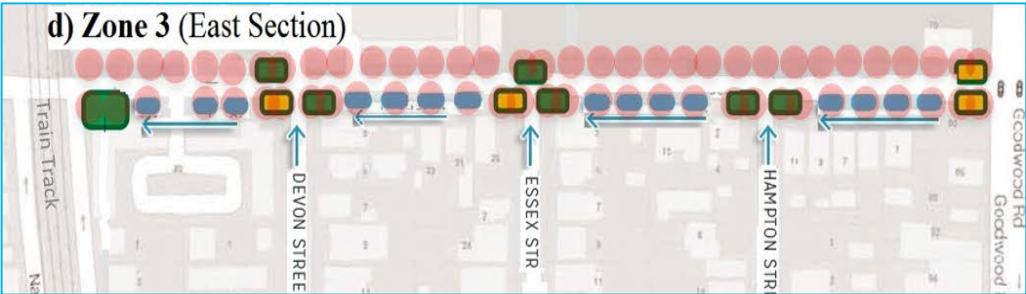
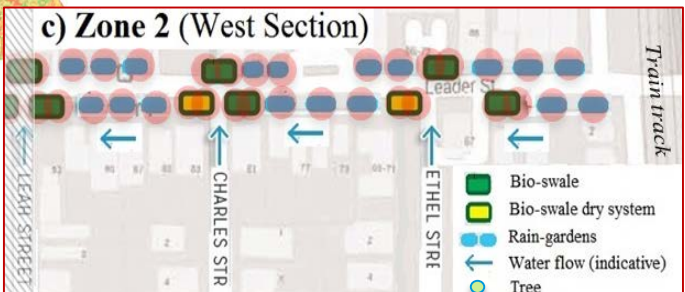
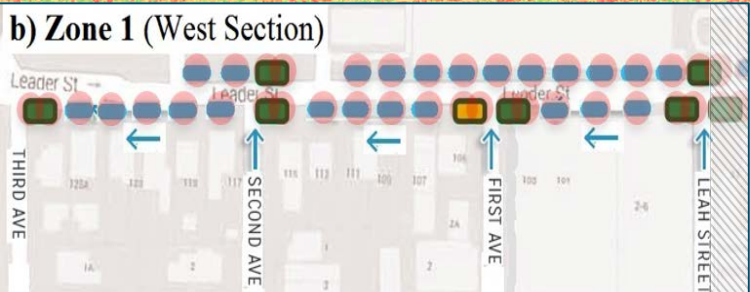
4. Commercial

2. Residential

3. Re



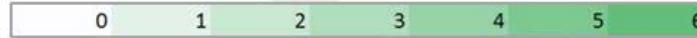
# Leader Street WSUD upgrade to an active living street



How do these WSUD interventions improve the microclimate ?

## Land surface temperature (LST) reductions

Land Surface Temperature Reduction (°C) Scale

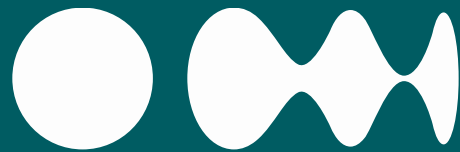


- Up to 6 °C LST reduction (mainly in the inter-sections) can provide considerable cooling benefit to people utilising this street.



# Opportunities to extend this work

- Refinement of Current Case Study:
  - New microclimate module – comparative case study
  - Comparison with City of Unley’s independent assessment
  - Detailed CRC Report and Publication on collaboration
- Exploration of other case studies:
  - Green Hills Project
  - Adelaide Airport



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**2012 - 2021**

