

Shaping Water Sensitive Cities

Outline

- CRC for Water Sensitive Cities
- Urban Water Management Phases
- CRC program - Transitioning to Water Sensitive Cities
 - Benchmarking
 - City Shaping
 - Delivery

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Chris Chesterfield – CRC for Water Sensitive Cities

CRC for Water Sensitive Cities

Australian Research Centre with 79 partners including researchers, government departments, water utilities, local governments and private companies with international linkages

Vision

Urban water management shapes cities and towns of the future to be sustainable, productive, resilient and liveable

Opportunity

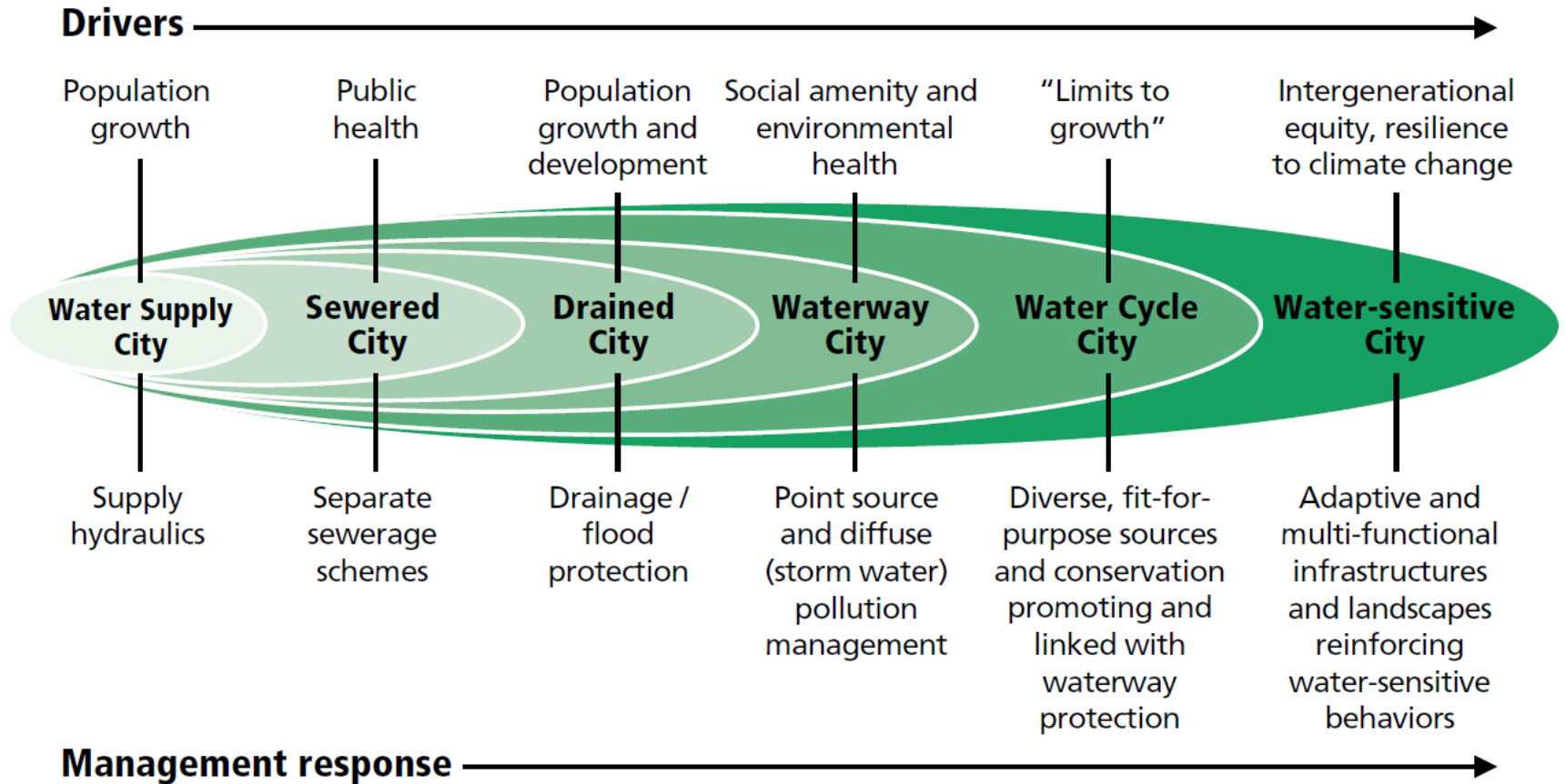
Populations and cities expanding rapidly in 21stC
- a window to do things differently

The **CRC aims** to help change the way we build our cities - maximising the contribution water makes in a city to

- economic growth and development
- social wellbeing
- sustainable urban environments

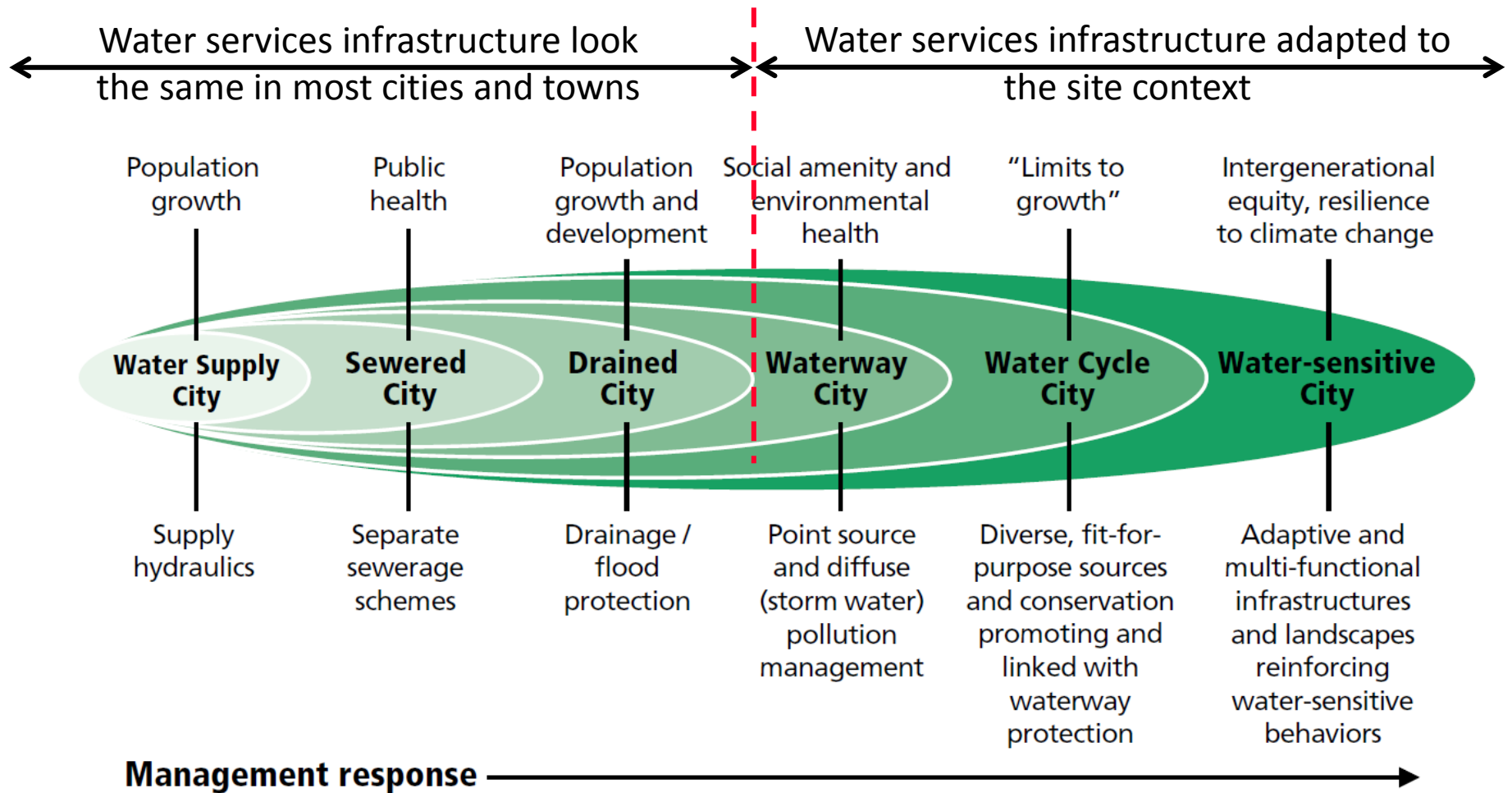
Urban Water Management Phases

Urban water transition phases



Source: Based on T. Wong and R. R. Brown. 2009. *The Water Sensitive City: Principles for Practice*. *Water Science and Technology* 60(3):673–682.

Urban water transition phases



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Melbourne

catchment of 13 000 sq km

38 local govts

4.5 million people

Two waves of growth

1850s – Gold Rush

1950s – post WW2

Melbourne Water

1890 – water supply and sewerage

1924 – drainage and floodplain mgt

1950s to 1980s – urban planning, open space

1999 – wq targets for Bay

2002 – custodian of river health

Third Phase of Growth

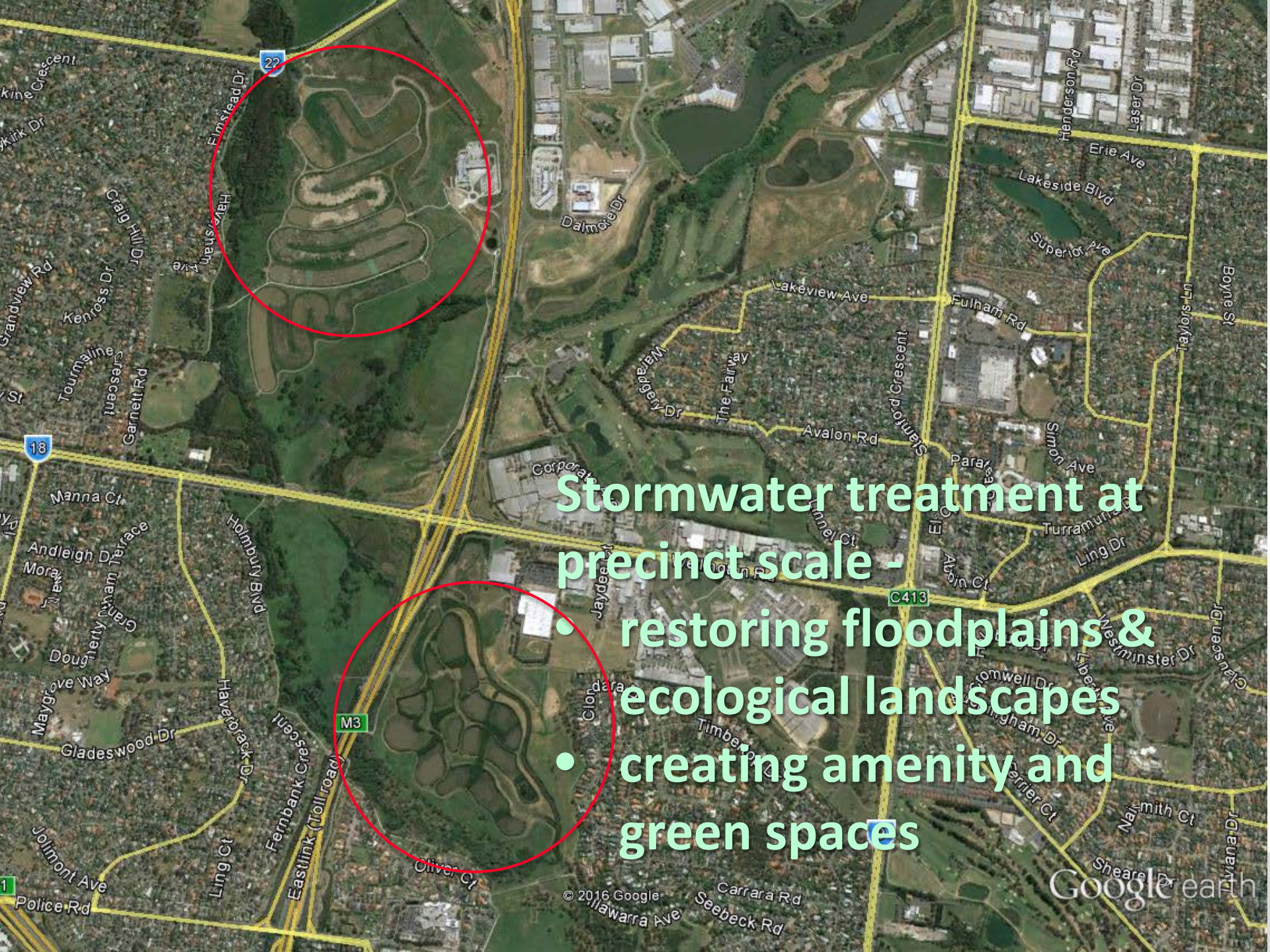
Predicted to be 8 million people by
2050

MW aiming for Water Sensitive City

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat

Image © 2016 TerraMetrics

Google earth



Stormwater treatment at precinct scale

- restoring floodplains & ecological landscapes
- creating amenity and green spaces



Stormwater treatment and harvesting in urban landscapes

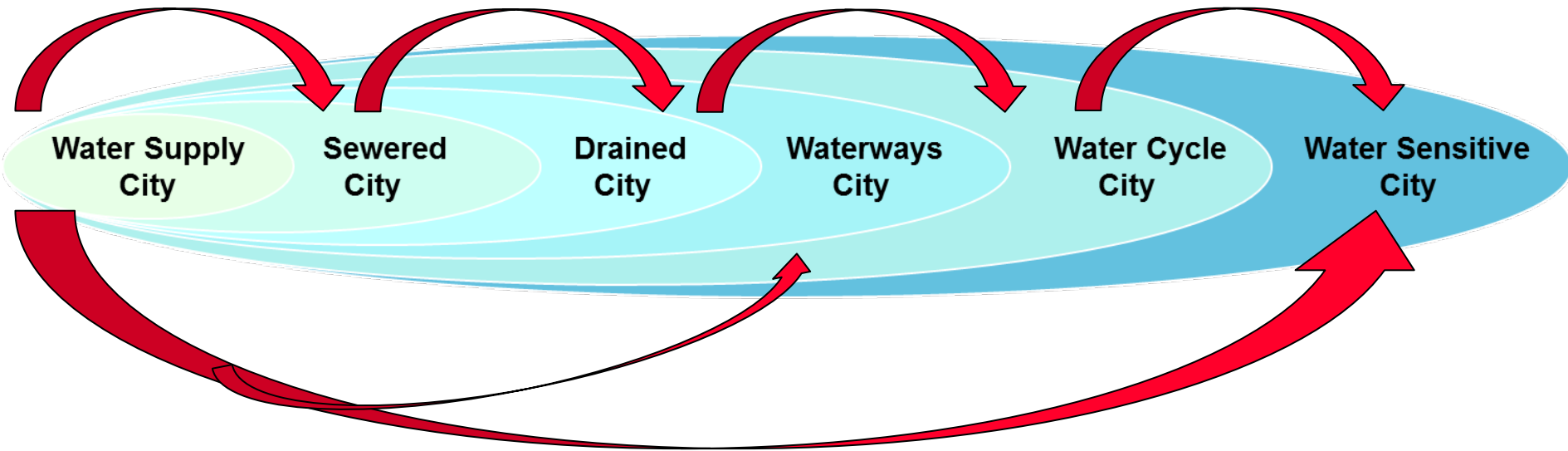




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Transitioning to Water Sensitive Cities

Potential for Leapfrogging



What information and investments would enhance leapfrogging potential?

WSC Transitions Platform

WSC Transition Strategy

Transition Framework and platform

Implementation Plan

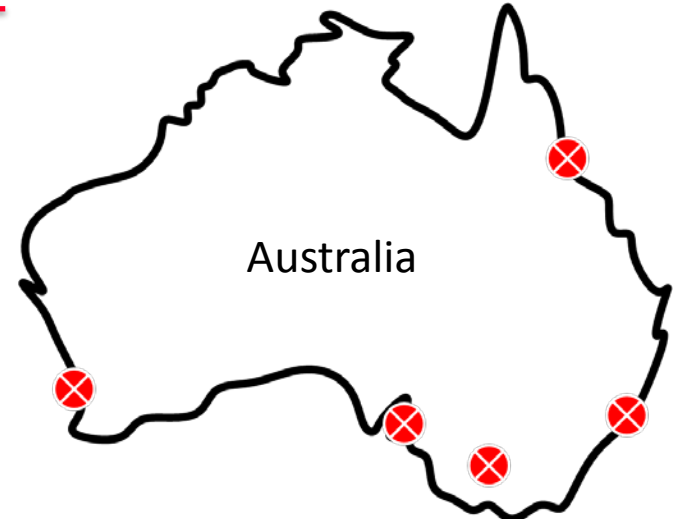
City Shaping Framework and Platform

Delivery

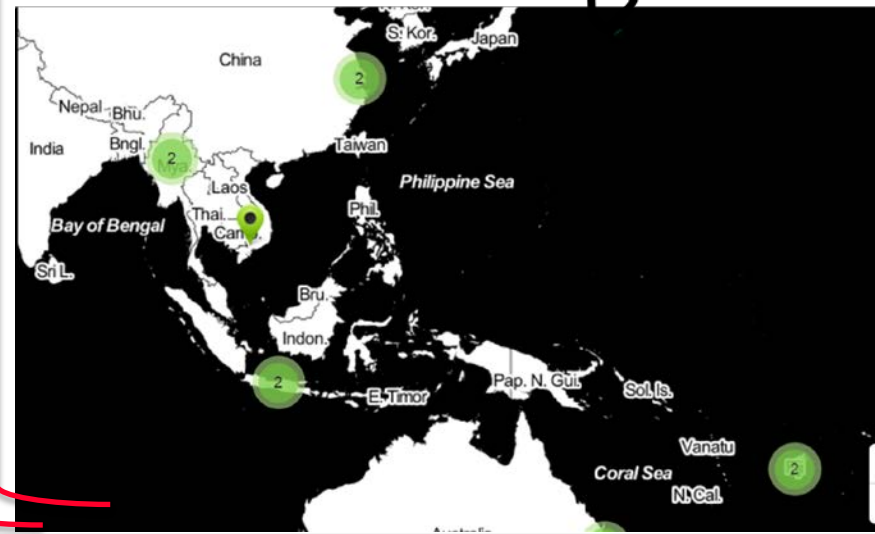
Design Platform

Delivery

Technologies



Asia-Pacific

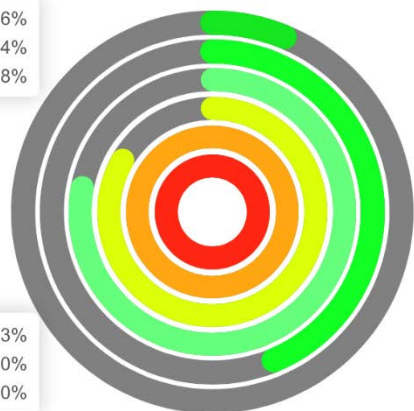


WSC Transition Strategy

Transition Platform

1 Benchmarking

Water Sensitive City: 6%
 Water Cycle City: 44%
 Waterway City: 78%

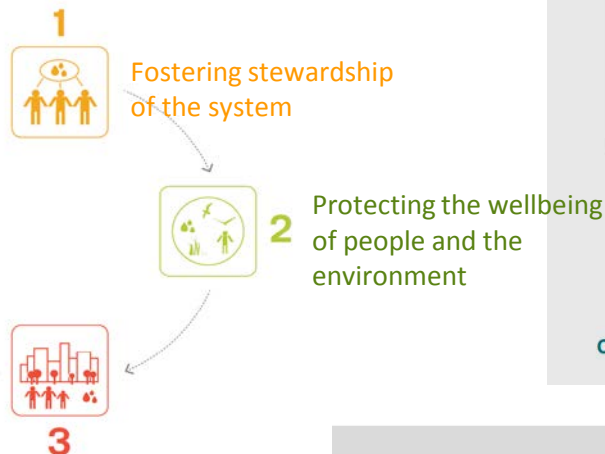


Drained City: 83%
 Sewered City: 100%
 Water Supply City: 100%

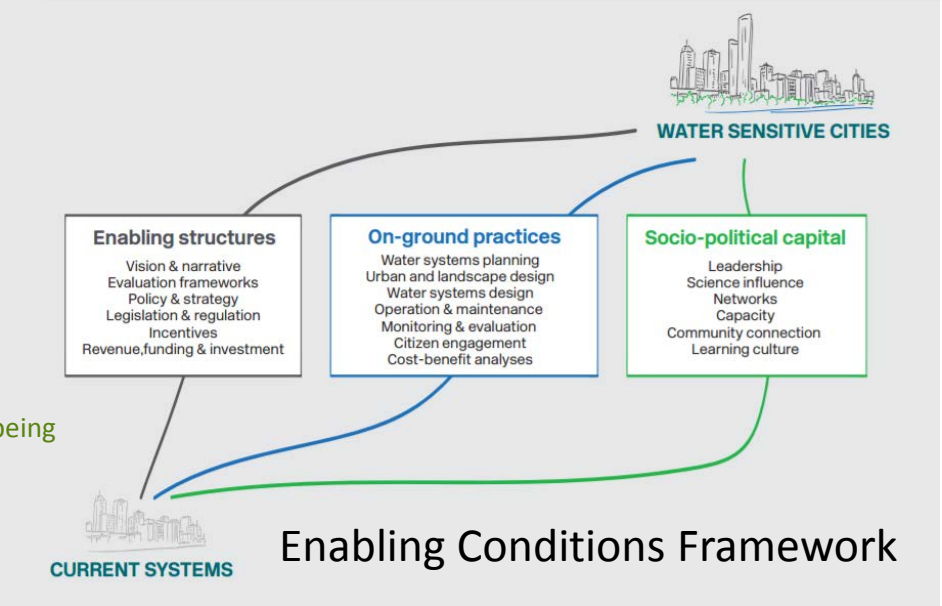
2 Visioning

Sustaining the long term use of Perth's resources

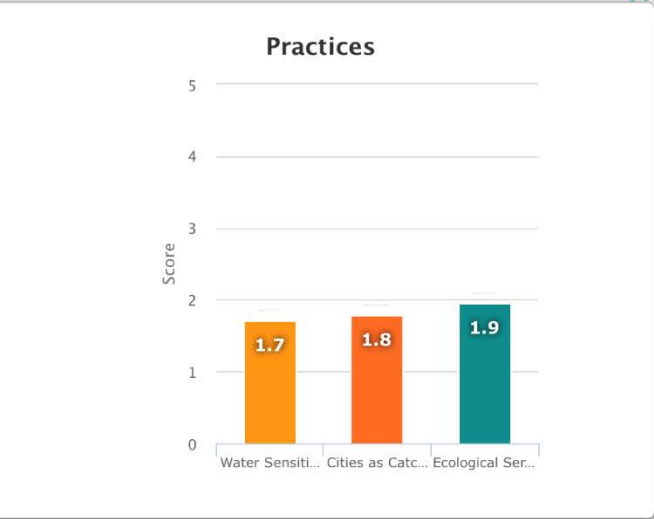
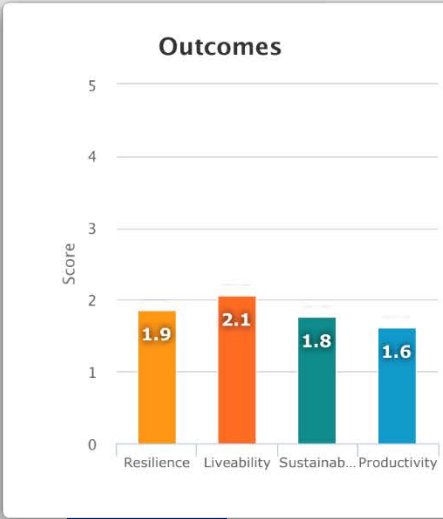
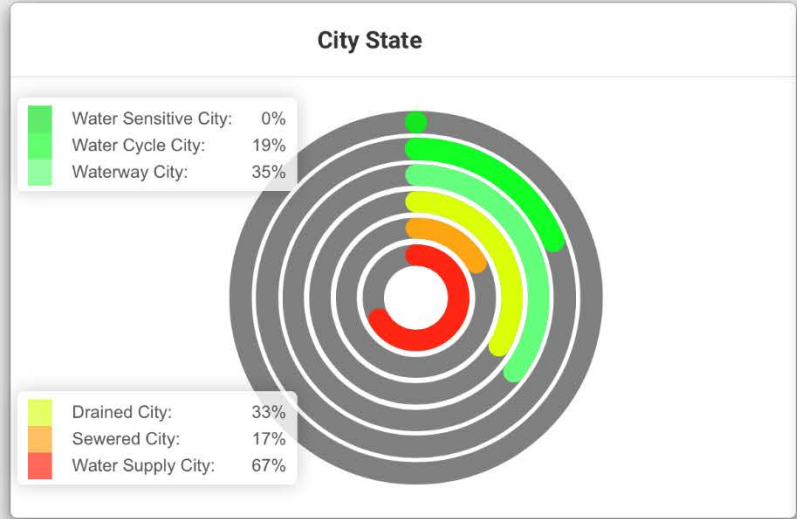
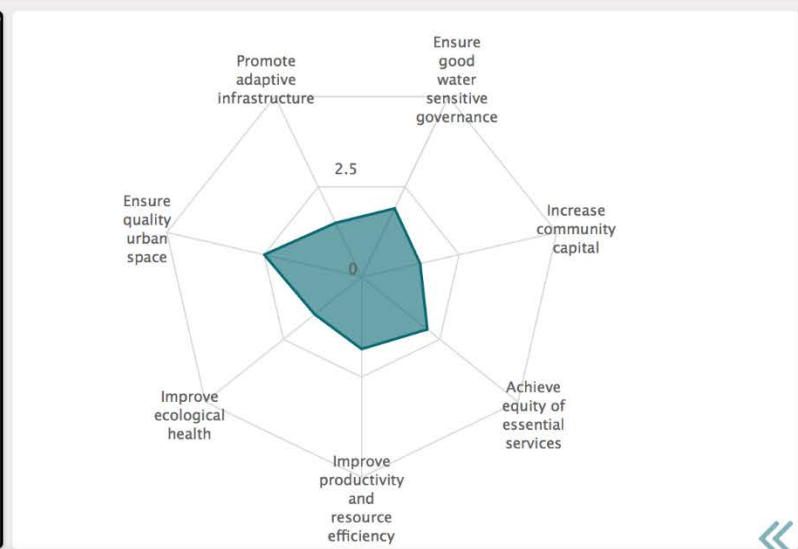
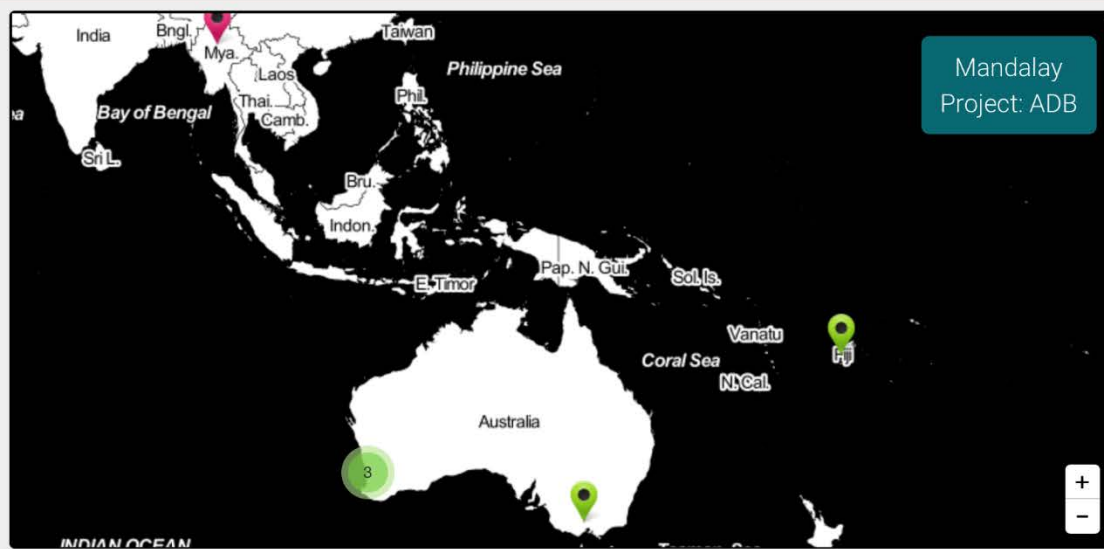
Integrating and engaging with the built and natural landscape



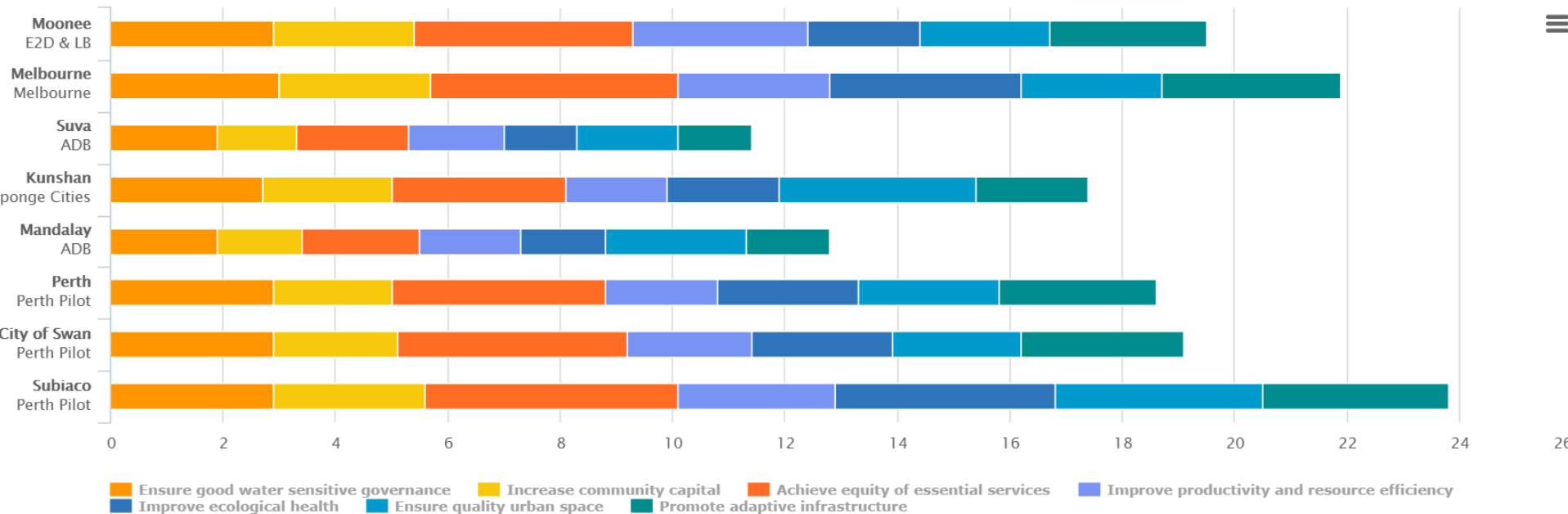
3 Transition planning



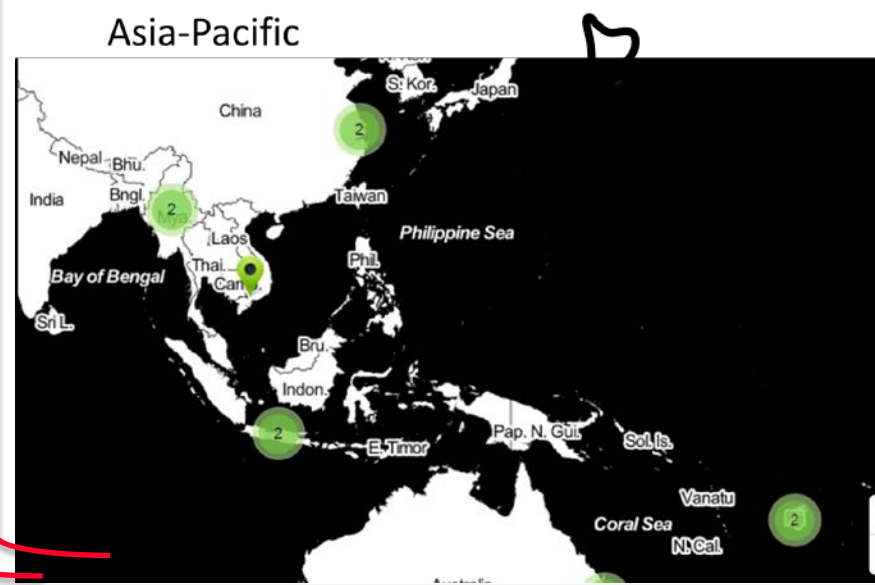
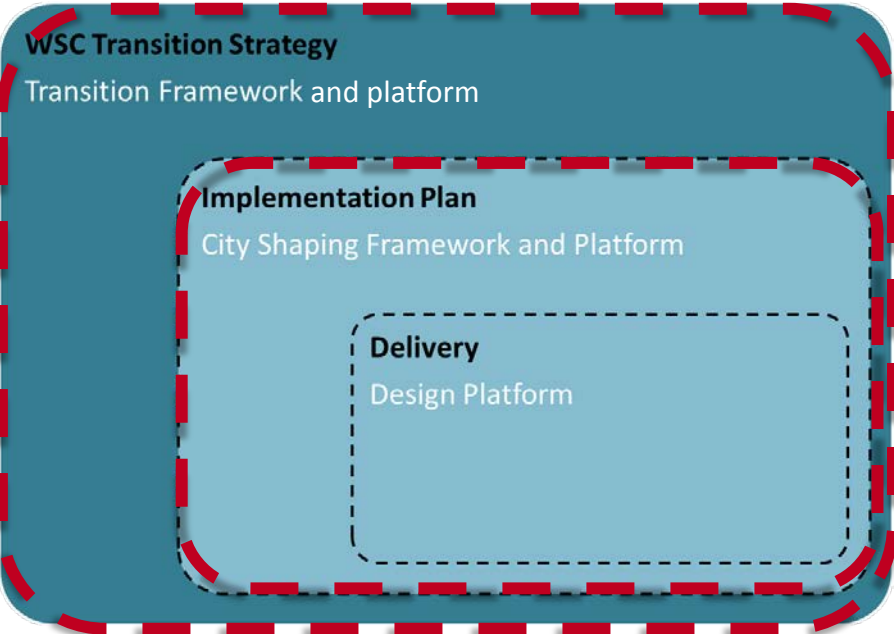
Mandalay benchmarking results



City Benchmarking



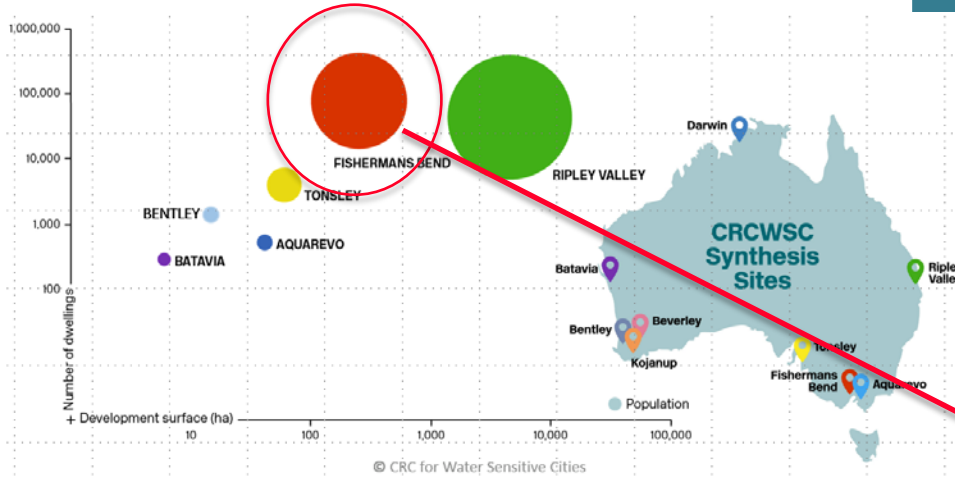
WSC Transition Strategy – City Shaping platform



WSC Transition Strategy

1

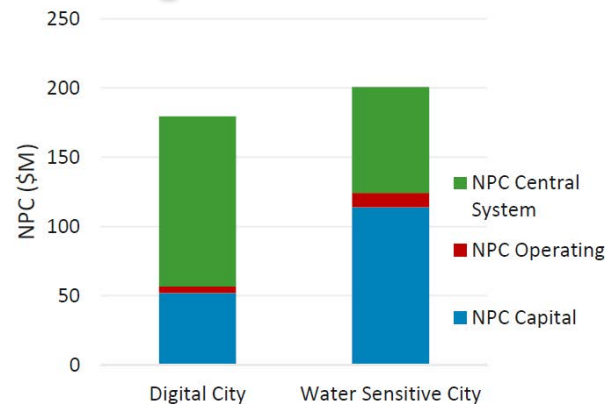
'Synthesis Workshops'



City Shaping Platform WSC Implementation



NPC of Options



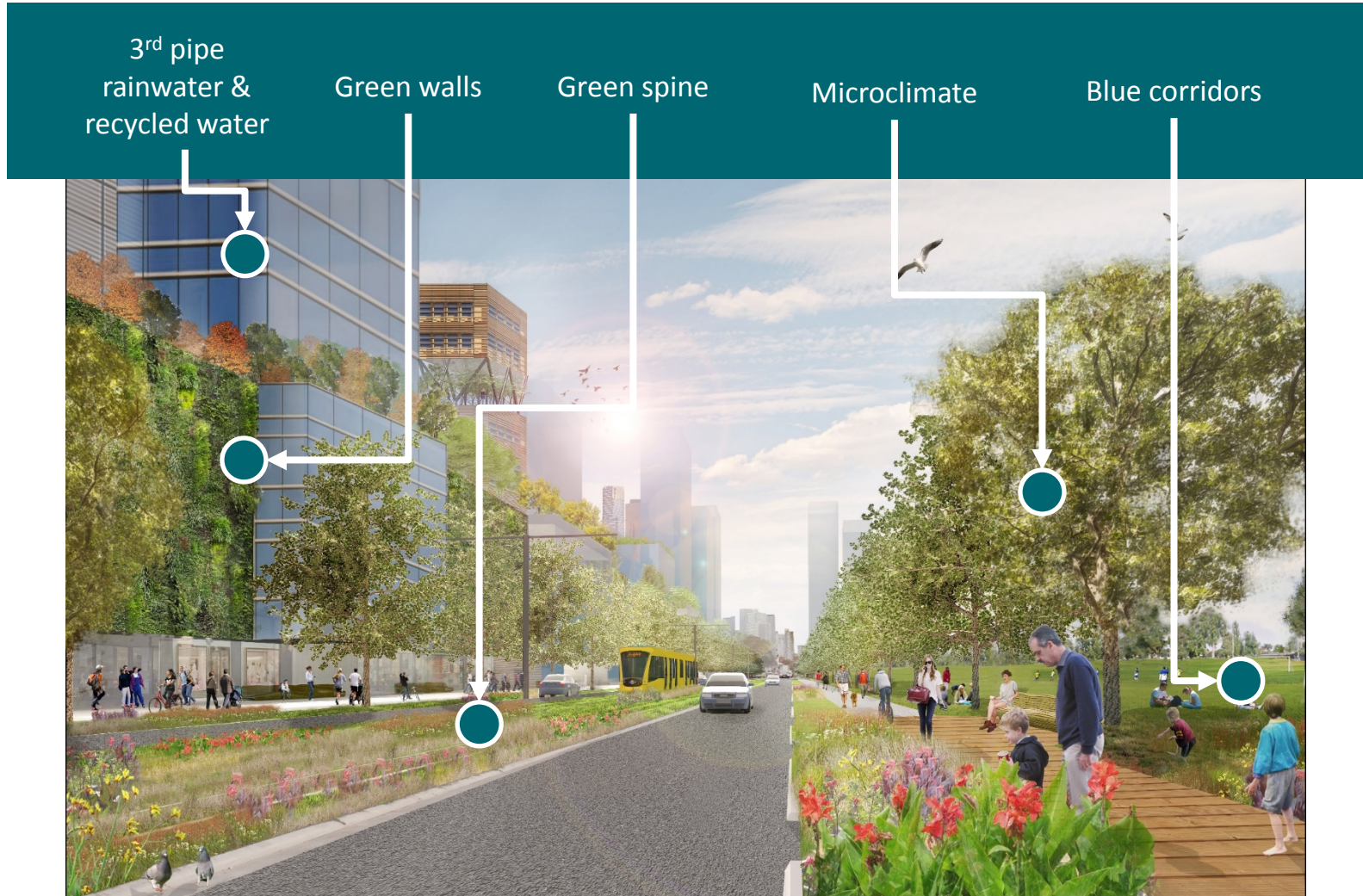
Fishermans Bend

2

Modelling/Evaluation

- Socio-institutional pathways
- Infrastructure adaptation pathways
- Green technology pathways
- Urban design and demonstration

Fisherman's Bend



Design Platform

WSC Transition Strategy

Transition Framework and platform

Implementation Plan

City Shaping Framework and Platform

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Asia-Pacific

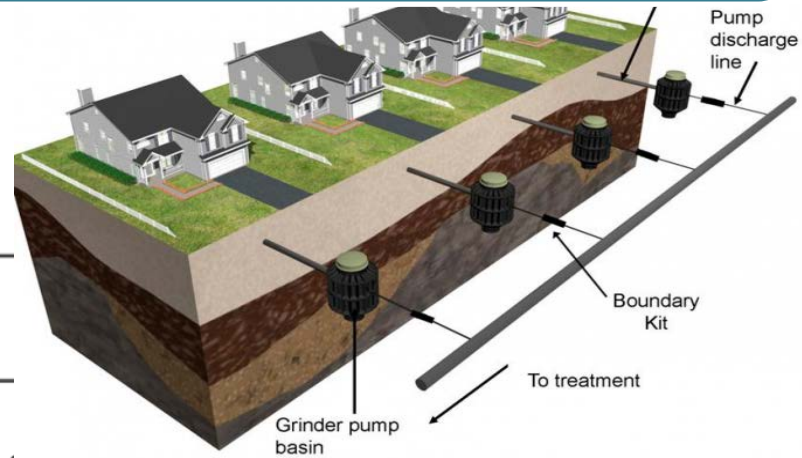
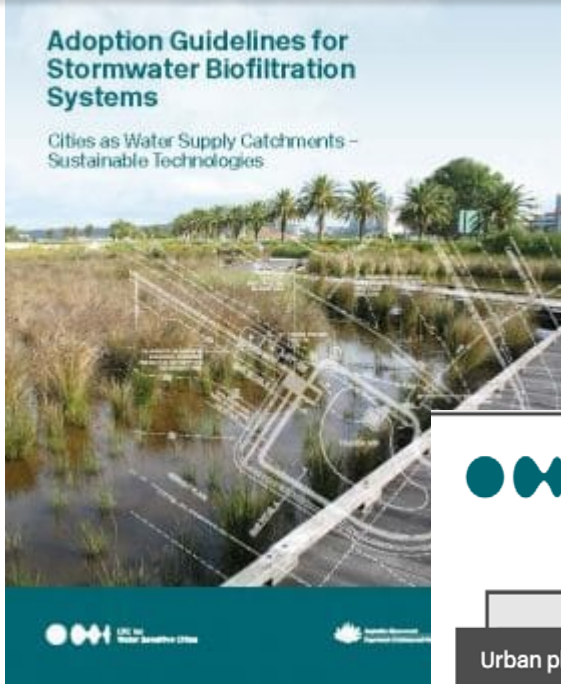


Design Platform

Design Platform Technologies

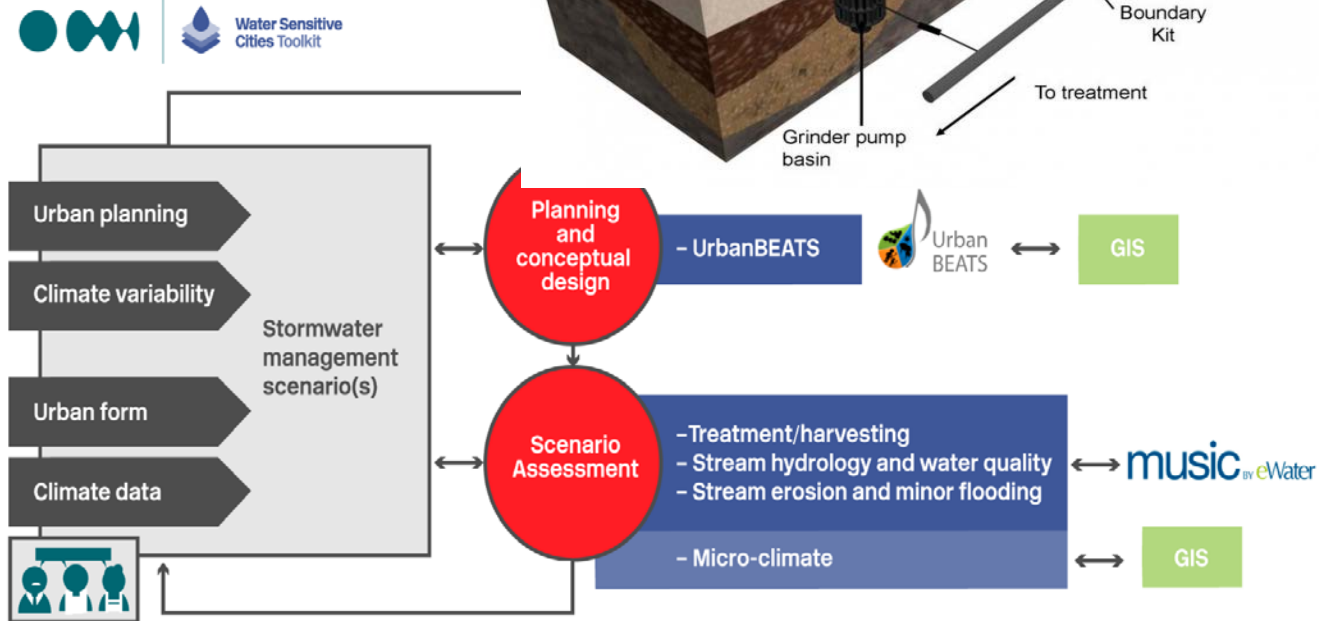
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Design Guidelines



2

Modelling Tools



Conclusions

- cities can develop differently
- provision of water services shapes cities that are more resilient, liveable, sustainable and productive
- With population growth, there is a window to do things now that will make a difference
- CRC is providing new knowledge and industry ready tools to assist in building water sensitive cities
- CRC working with partners around the world. The ADB is one of the most influential

