



CRC for
Water Sensitive Cities

Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Programme



Tools and Products Program

The Water Sensitive Cities Toolbox incorporates several practical, software based tools that support the mainstreaming of water sensitive technologies and practices across the urban development sector.

The Tools and Products (TAP) Program will further develop, refine and harmonise the portfolio of tools and practical products that the CRCWSC has developed through our research activities. The Toolbox is an integrated set of platforms to support practitioners in their work and foster collaboration that will support the transition of our cities towards more water sensitive futures.

Three key platforms represent the different objectives, timelines of the transition activities at the small, medium and large scale:

- The **Water Sensitive Cities Transition Platform** provides benchmarking, long term visioning and transition support tools for whole cities/regions.
- The **Water Sensitive Cities Scenario Platform** helps to evaluate and compare urban development options and approaches and their multifaceted impacts.
- The **Water Sensitive Cities Design Platform** supports the design and implementation of integrated water sensitive solutions and demonstrates the overall benefits.

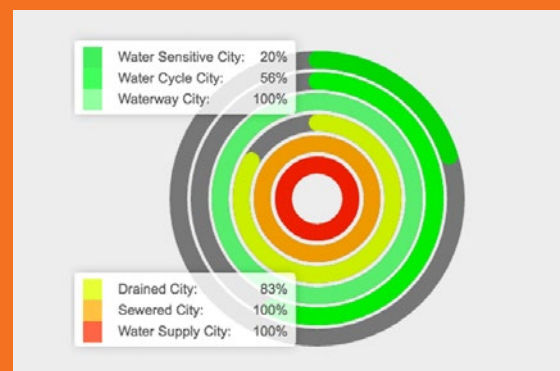
Additionally, specific training and outreach activities will be developed to support the application of the Toolbox. These activities will form part of the **Knowledge Translation Platform** that will host the outputs and learnings from the CRCWSC's research and adoption activities.

Water Sensitive Cities Transition Platform

This platform will guide practitioners on how to develop common water sensitive cities objectives and transition strategies, and how to evaluate targeted interventions. It builds on the Water Sensitive Cities Index, a tool for benchmarking a city's performance against indicators that characterise water sensitive practice.

The Transitions Platform will also include:

- a Transition Dynamics Framework for identifying and addressing key factors and drivers to achieve positive transition outcomes
- a management action database, to help practitioners identify actions that enable and support water sensitive long term outcomes
- a monitoring tool, for target setting and ongoing evaluation of the transition process.



WSC Index city state image

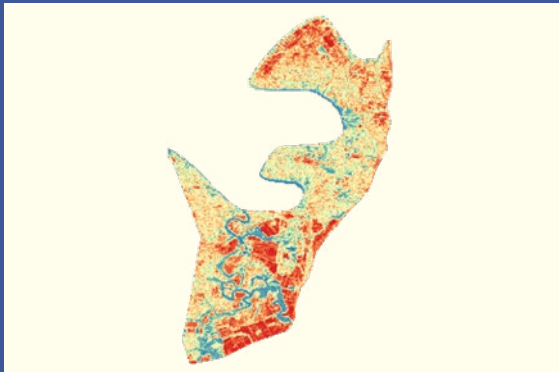
The city state image is one output of the WSC Index, which is embedded within the WSC Transition Platform. It depicts an urban area's progression towards each of six city states, which reflect CRCWSC research on urban water management transitions.

Water Sensitive Cities Scenario Platform

This platform helps practitioners to develop compelling business cases for scenarios supporting water sensitive outcomes at mid-scale, by identifying the benefits associated with these approaches.

Practitioners can use the platform to create and evaluate concept designs and technology/policy solutions. It will comprise a library of separate but connected models that quantify the advantages of blue-green infrastructure options:

- an urban heat mapping tool that predicts dynamic land surface and air temperatures
- an urban water balancing tool that quantifies an urban area's water inputs, outputs and storages
- a benefit cost analysis tool for the broad economic evaluation of water sensitive scenarios including non-market values and externalities.



Urban heat island output

The Scenario Platform's extreme heat mapping module generates land surface temperature maps, by applying temperature data from surface temperature sensors to the land cover of the area of interest. Practitioners can use the maps to visualise the urban heat island effects of different development scenarios.

Water Sensitive Cities Design Platform

This platform allows practitioners to design multifunctional and resilient water infrastructure solutions and evaluate achievable benefits at a small scale.

It models the evolution of urban designs, infrastructure solutions, water system development, and population dynamics and demographics over time, accounting for how these factors influence each other.

It integrates different data sources (climate, census, water network data, drainage and flood models, urban planning rules) and allows practitioners to change variables related to these elements to evaluate the effects of different design and management strategies, and their associated multi-faceted benefits and impacts.

Water Sensitive Cities Knowledge Translation Platform

To build the industry practitioners' capacity and confidence in applying our tools and products, a range of training tools, demonstration case studies and implementation examples will be provided.

The associated user guides and reference materials for each tool and product will form part of the broader Knowledge Translation Platform, the key portal to access all of the CRCWSC's past and ongoing research and adoption outputs and activities.

For further information, visit: <https://watersensitivecities.org.au/content/tools-products-tap/>

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