



CRC for  
Water Sensitive Cities



Australian Government  
Department of Industry and Science

**Business**  
Cooperative Research  
Centres Programme

# Adoption of Water Sensitive Urban Systems and Practices: Role of economic analysis

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THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

# Background

- Cities are facing increasing challenges of managing growing demand for scarce water resources.
- Wider adoption of water sensitive urban systems and practices is necessary to sustainably manage / meet these demands.
- How can economics facilitate wider adoption of water sensitive urban systems and practices?



# Economic analysis

- Economics is the study of production, distribution and consumption of goods and services.
- It is also the study of choice.
- *People make choices everyday, many involved monetary transaction, while most do not.*



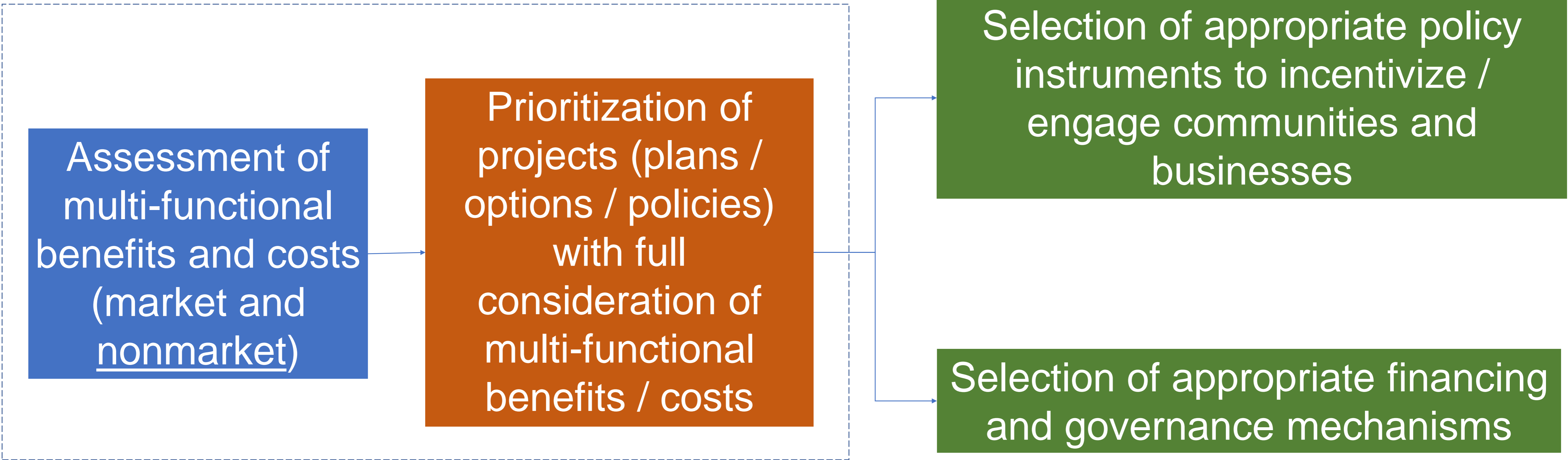
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"I'D PREFER NOT TO RECOMMEND ANYTHING, M'SIEUR -- IT'S YOUR LIFE."

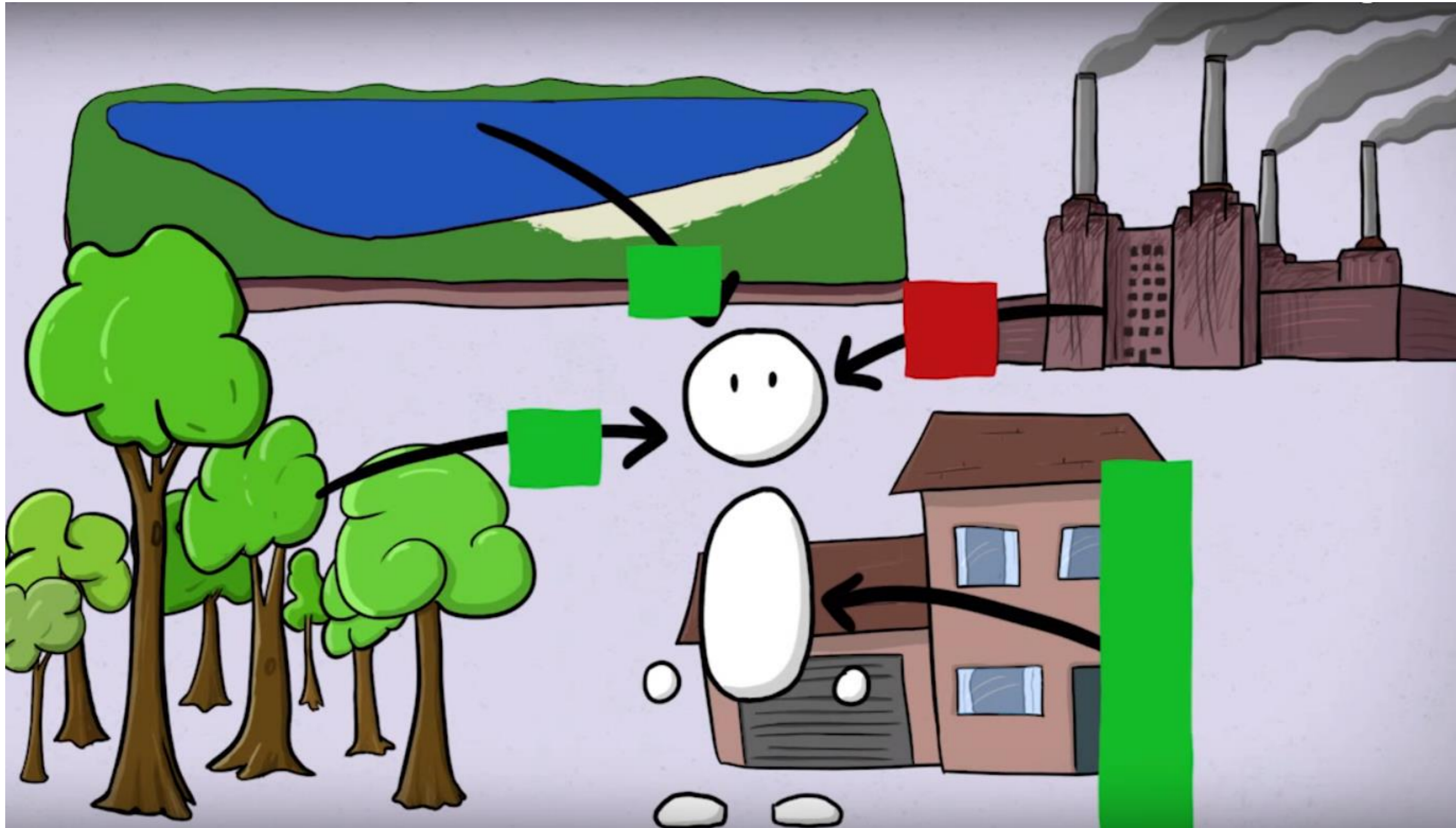


# Economic analysis

Economic analysis could help in the following four key areas



# Assessment of nonmarket values



Source: <https://www.conservation-strategy.org/en/category/video-subjects/valuation-ecosystem-services/hedonic-pricing-method>



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[watersensitivecities.org.au](http://watersensitivecities.org.au)

# Assessment of nonmarket benefits



Rainwater Tanks in Perth



Living stream in Perth



Decentralized stormwater management in Sydney and Melbourne



Wastewater treatment plant buffer zone



Rain gardens in Sydney and Melbourne



Constructed wetlands in Melbourne and Kunshan



ABC Waters Program in Singapore



Water quality in Swan-Canning



Urban In-fill in Adelaide and Melbourne

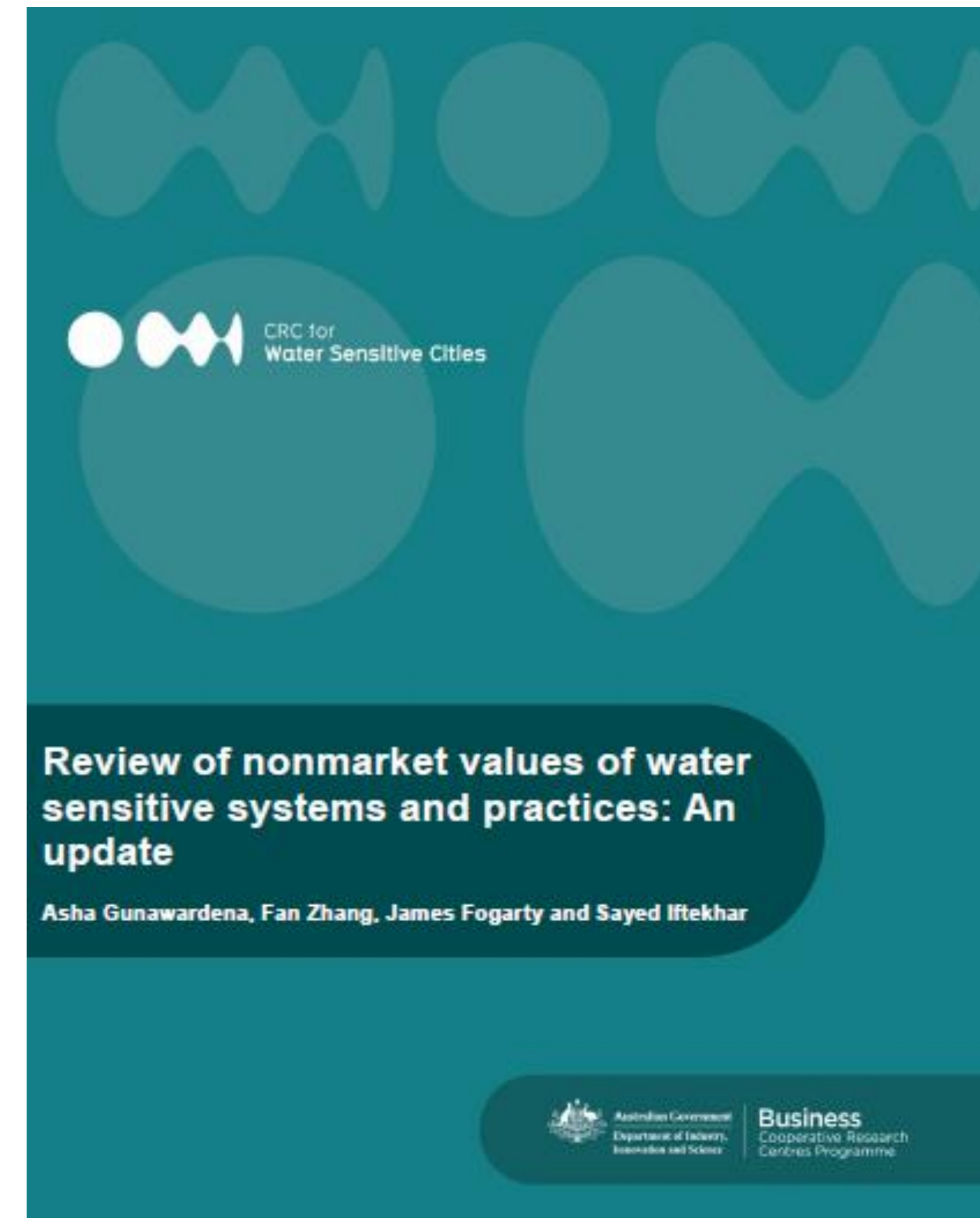


Linear Park in Melbourne



# Review of NMVs

- ❑ Reviewed 345 studies related to water sensitive urban systems and practices
- ❑ 181 studies reported nonmarket values
- ❑ More than 400 nonmarket values were recorded



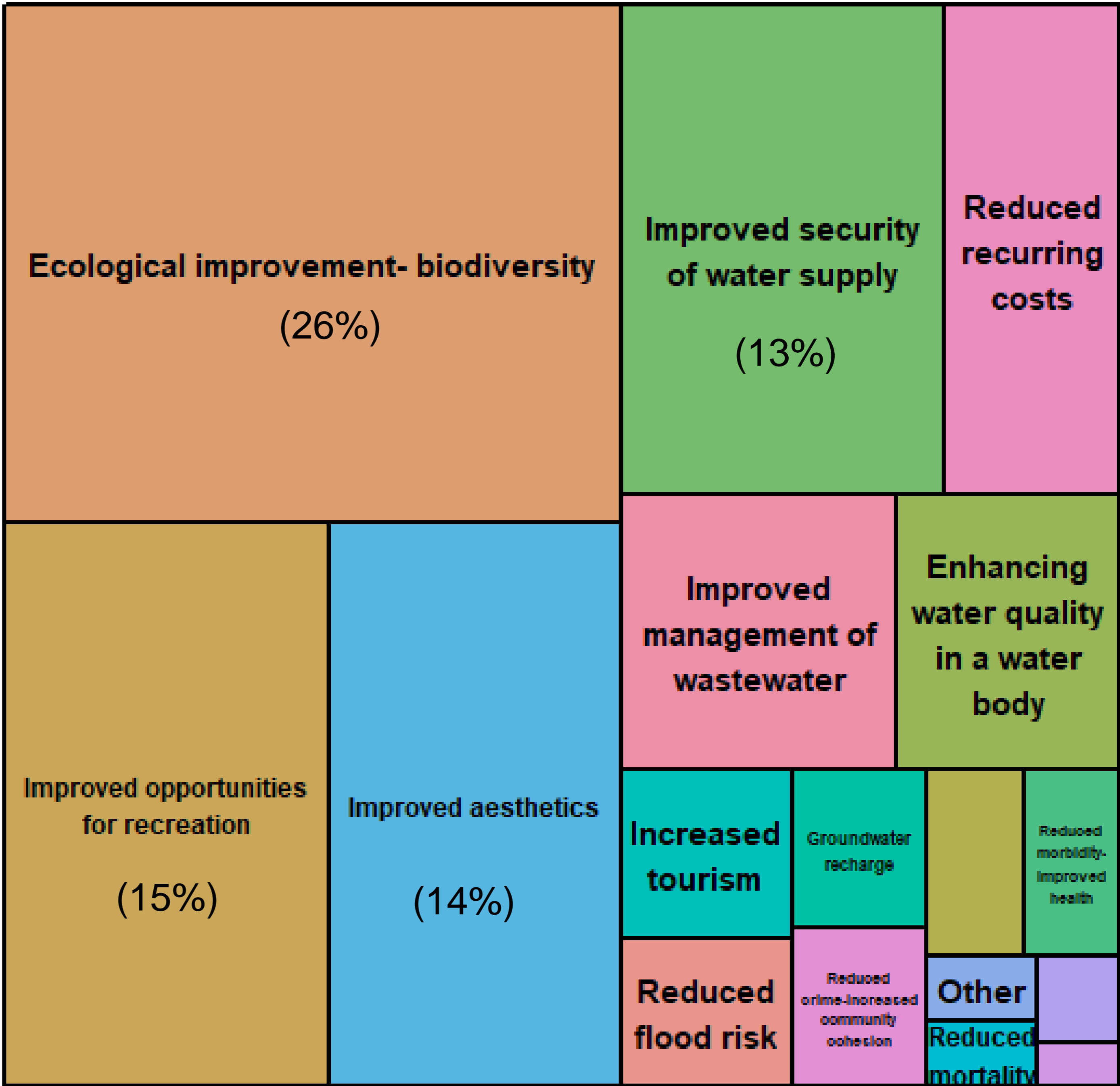
# Value tool

- ❑ Contains information from Australian studies
- ❑ Information from 76 studies (336 nonmarket values) have been included so far
- ❑ Information organized in an excel spreadsheet-based database





# Distribution of values by benefit types



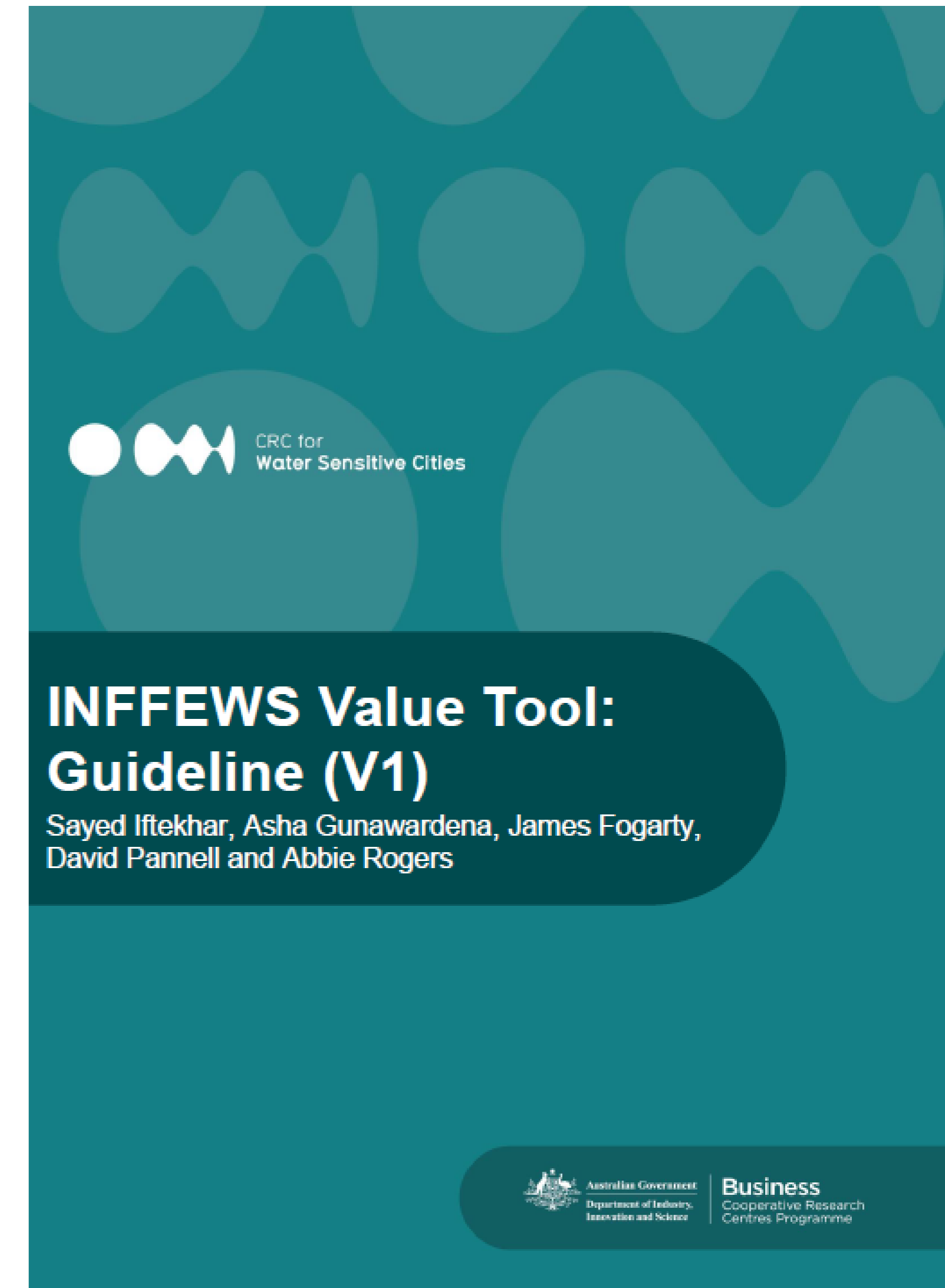
We are in the process of updating the database, inclusion of health and heat benefits.

# Assessment of benefits

The benefit transfer guideline provide detail guidelines on how to use these values after appropriate adjustment

1. Bio-physical context
2. Double counting
3. Inflation
4. Differences in real income
5. Differences in demographic condition
6. Substitution effect
7. Distance decay
8. Non-correspondence bias

Attend tomorrow's training workshop to know more about these



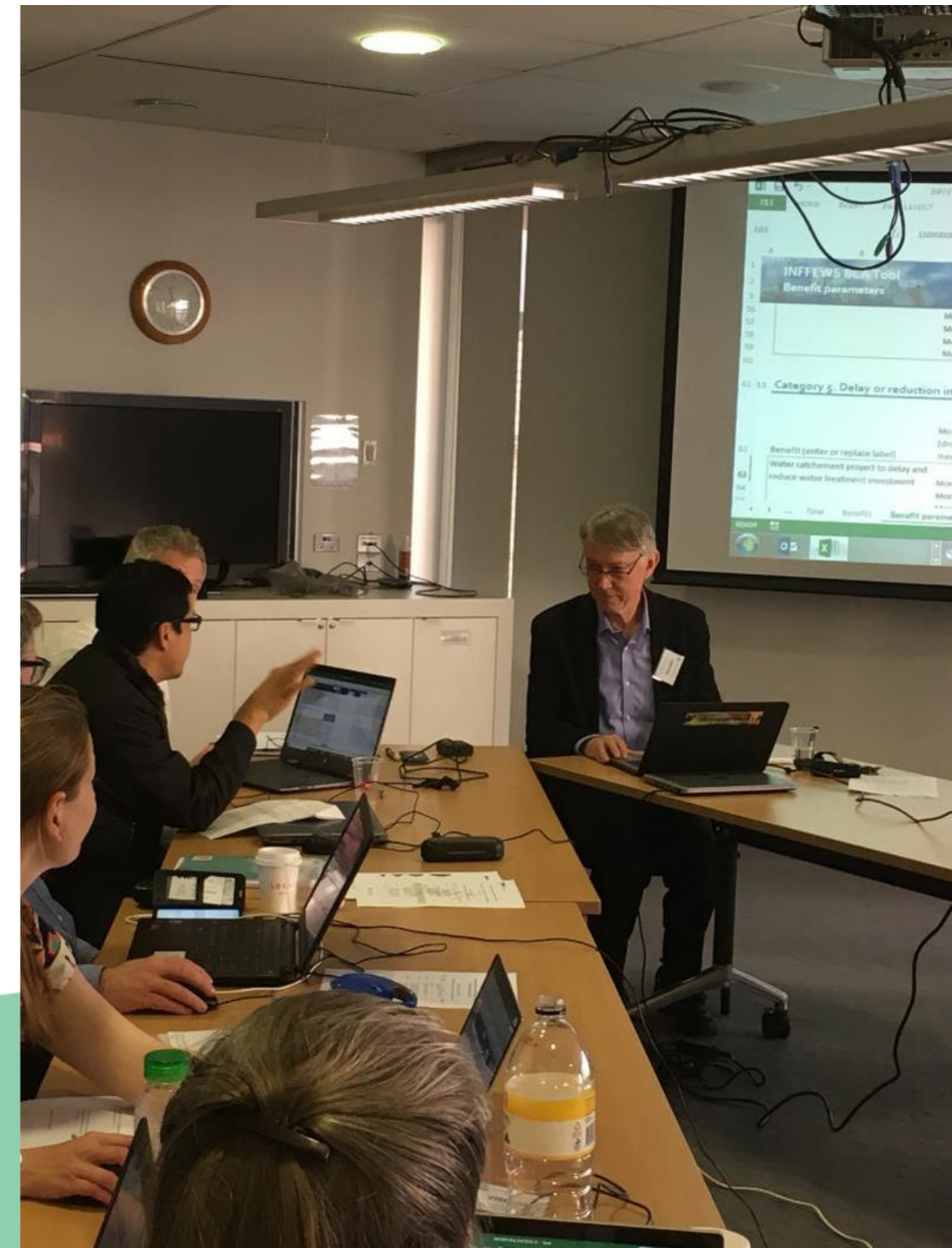
# Prioritization of projects / plans


1. Project ranking guideline
2. BCA tools and guidelines, training materials, courses



# Development process

1. Review existing tools → capture lessons and ideas
2. Interview a wide range of BCA experts and stakeholders
3. Review Government BCA guidelines: Australian Government, 4 states (NSW, Vic, Qld, SA), New Zealand and United Kingdom
4. Worked with Project Steering Committee
5. Internal testing and proofing
6. Released Beta version for testing
7. Developed training materials and help videos
8. Training sessions (2 completed, **4 more coming**)
9. Online course on principles of BCA

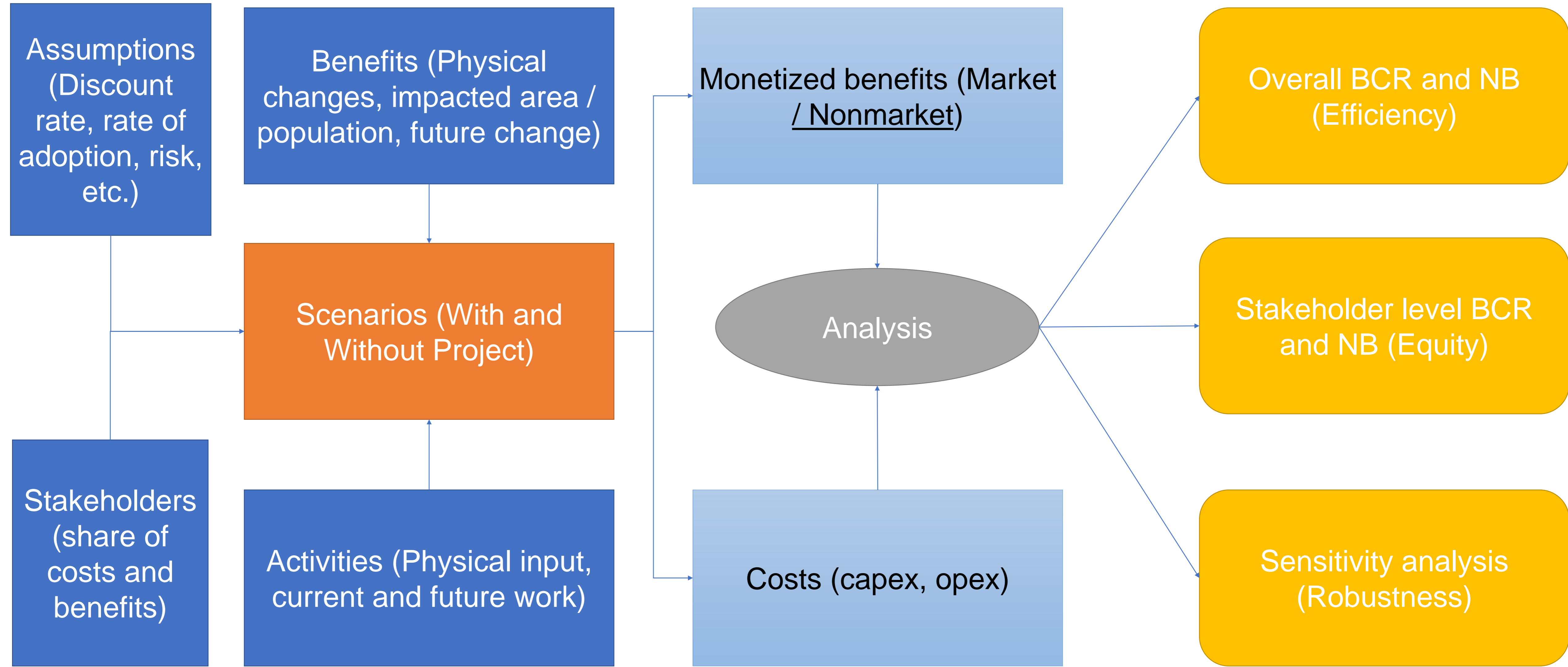


	A	B	C
1	<h1>INFFEWS BCA Tool</h1> <p>Benefit: Cost Analysis of urban water and green infrastructure projects</p>		
2	<p>Copyright © 2018, CRC for Water Sensitive Cities</p>		
3	<p>2018.15 Beta</p>		
4	<p>Developer: David Pannell, University of Western Australia</p>		
5			
6	<p>CRC for Water Sensitive Cities</p>		
7	<p>Integrate Research Project 2, "Comprehensive economic evaluation framework"</p>		
8	<p>Project leader: Sayed Iftekhar, University of Western Australia</p>		
9	<h2>The INFFEWS BCA Tool</h2>		
10	<p>The INFFEWS BCA Tool is designed to assist users to conduct a high-quality Benefit: Cost Analysis (BCA) of projects related to water and green infrastructure in urban areas.</p>		
11	<p><a href="#">Video introduction to the INFFEWS BCA Tool</a></p>		
12	<p>It provides a systematic and user-friendly approach to project evaluation. Users work through the spreadsheet step by step. The information builds in a logical sequence, with later questions depending on answers to earlier ones.</p>		
13	<p>This Beta version of the Tool is for testing, so your feedback is important to us. Please email your comments and suggestions, quoting 2018.15 Beta, to:</p>		
14	<p><a href="mailto:David.Pannell@uwa.edu.au">David.Pannell@uwa.edu.au</a></p>		
15	<h2>Use the INFFEWS BCA Tool spreadsheet in conjunction with ...</h2>		
16	<p>"INFFEWS BCA Tool: User Guide". Provides detailed step-by-step instructions and advice for completing a BCA in this spreadsheet tool.</p>		
17	<p>"INFFEWS BCA Tool: Guidelines". Explains key concepts behind BCA; explains the structure and elements of the tool; outlines information requirements and judgements needed to apply the tool; suggests strategies for obtaining data.</p>		
18	<p>"INFFEWS Benefit: Cost Analysis and Strategic Decision Making". Provides guidance on BCA basics: strategic issues related to BCAs; whether to conduct a BCA; and use of economic</p>		
19	<p>es conference</p>		

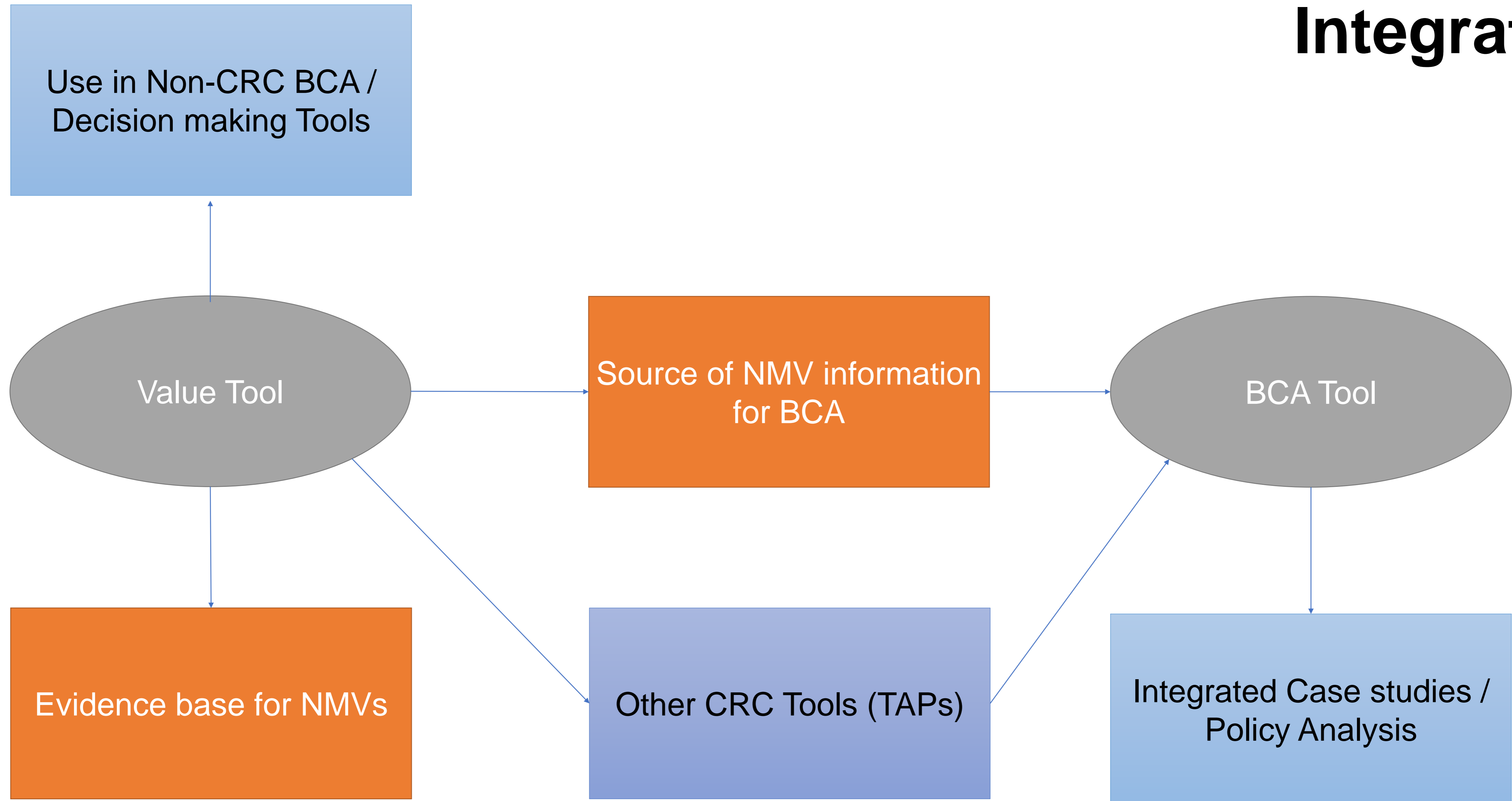
# □ Spreadsheet



# BCA Tool



# Integration



# Adoption of the tools

- Beta version of the tools have been shared with > 40 organizations (~ 15 non-participants). ~10 active applications.

- Aither
- Alluvium
- Australian National University
- Bligh Tanner
- Brisbane City Council
- City of Gold Coast
- City of Mandurah
- City of Melbourne
- City of Sydney
- City West Water
- DELWP
- Department for Energy and Mining, SA
- Department of Defence, VIC
- Department of Environment and Science, Qld
- Department of Industry and Skills, SA
- Department of Water and Environmental Regulation, WA
- E2Designlab
- EMRC
- GHD
- Greater Sydney Commission
- Hornsby council
- Hunter Water
- Marsden Jacob Associates
- Melbourne Water
- Monash University
- NSW Department of Planning and Environment
- NSW Office of Environment and Heritage
- Rockhampton Regional Council
- SA DEWNR
- SA Treasury
- SA Water
- SEQWater
- Stockland
- Strategic Planning Institute
- Sydney Water
- Townsville City Council
- University of Queensland
- University of Western Australia
- Water Corporation
- Water Technology
- WSAA
- Yarra Valley Water



# Thank You!



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[watersensitivecities.org.au](http://watersensitivecities.org.au)