



National Urban Water
Governance Program



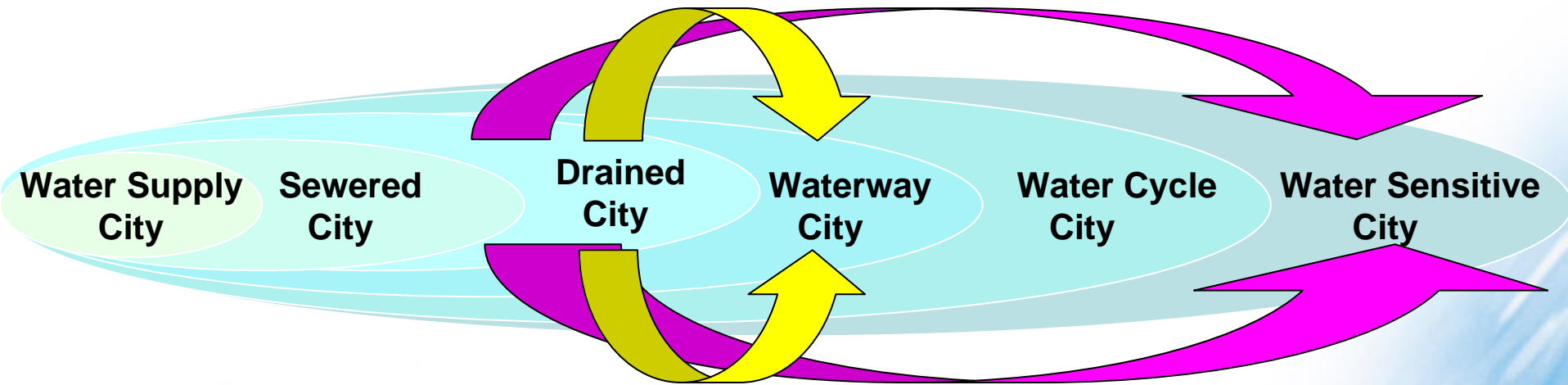
MONASH University

Enabling Factors for Creating a Water Sensitive City

**Perth Urban Drainage Summit
October 2007**

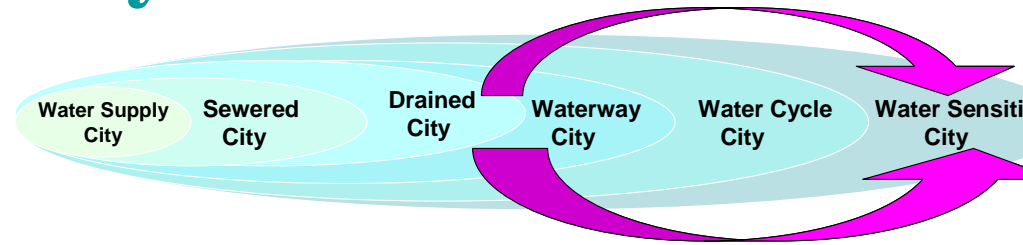
Rebekah Brown

How can we transition to the Water Sensitive City?



Transitioning from the 'Drained City' to the 'Waterway City'

Key Transition Factors



1. Socio-Political Capital
Community, Media and Political

2. Champions

Vision

Multi-sectoral network

3. Accountability

Coordination Processes

Water Cycle

Land-use Planning

4. Trusted & Reliable Science

Academic Leadership

Technology Development

5. Market Receptivity

Business Case for Change

6. Bridging Organisations

Facilitates Science – Policy

Facilitates Capacity Building

7. Binding Targets

Measurable System Target

Science, Policy and Development

8. Strategic Funding Points

Dedicated external funds

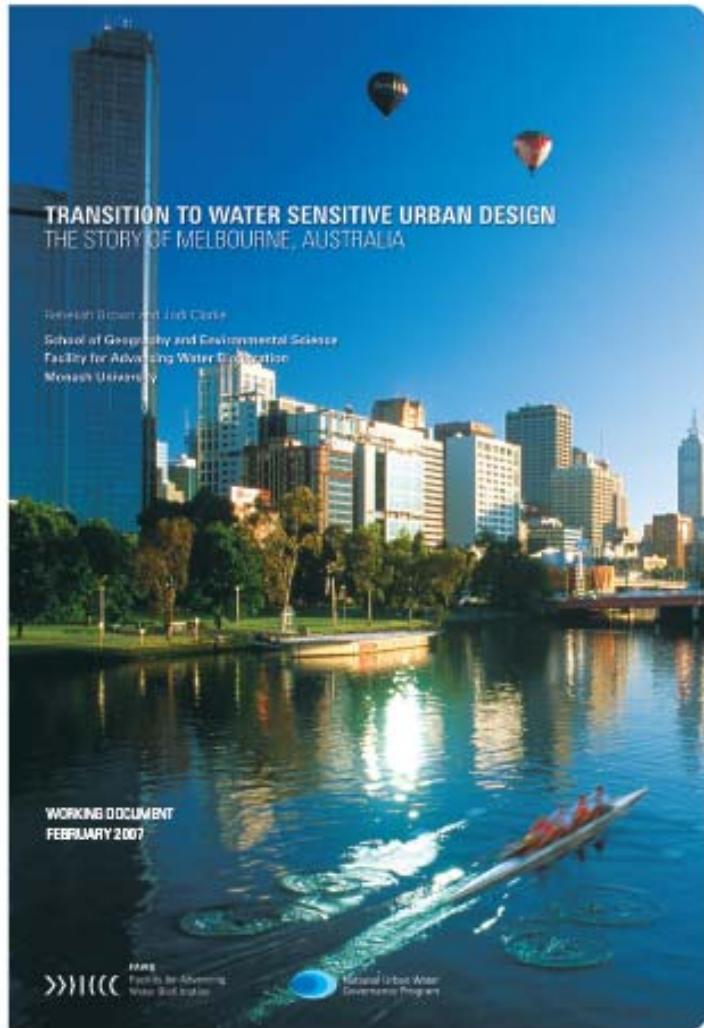
9. Demonstration Projects

Experimentation,

Technology Development

Policy and Institutional learning

www.urbanwatergovernance.com



Transition to Water Sensitive Urban Design:

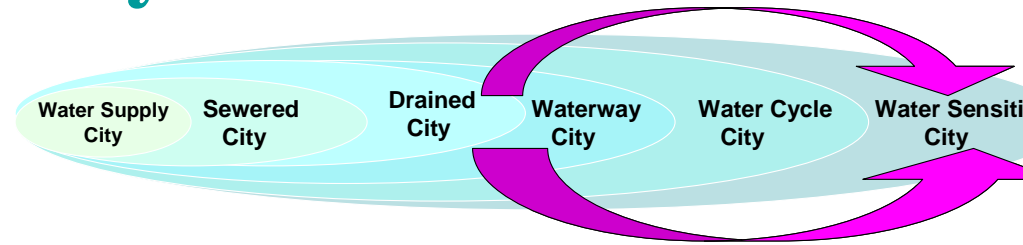
The Story of Melbourne, Australia

Rebekah Brown & Jodi Clarke
July 2007

The Enabling Context: Key Transition Variables

- 1 Socio-Political Capital** Aligned community, media and political concern for improved waterway health, amenity and recreation.
- 2 Bridging Organisation** Dedicated organising entity that facilitates collaboration across science and policy, agencies and professions, and knowledge brokers and industry.
- 3 Trusted & Reliable Science** Accessible scientific expertise, innovating reliable and effective solutions to local problems.
- 4 Binding Targets** A measurable and effective target that binds the change activity of scientists, policy makers and developers.
- 5 Accountability** A formal organisational responsibility to the improvement of waterway health, and a cultural commitment to proactively influence practices that lead to such an outcome.
- 6 Strategic Funding** Additional resources, including external funding injection points, directed to the change effort.
- 7 Demonstration Projects & Training** Accessible and reliable demonstration of new thinking and technologies in practice, accompanied by knowledge diffusion initiatives.
- 8 Market Receptivity** A well articulated business case for the change activity.

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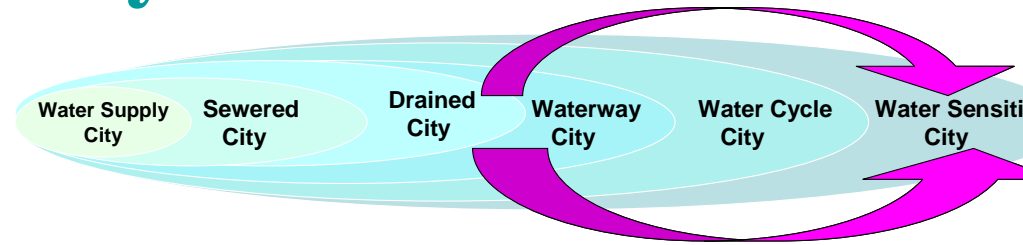
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Data Collection (Feb 06 – Dec 06)

Oral Histories (n=15)

February / March 2006

Interviews (n=83)

September / October 2006

On-line Questionnaire (n=310)

November 2006

Target audience

- State Government Agencies
- State Regulators
- Local Government
- Water Authorities
- Consultants
- Developers
- Research & Education Institutions
- Manufacturers
- NGO Groups

3. Trusted and Reliable science

Progress

- R&D priorities workshop
- Discussion paper on governance models

Key Gaps

- Lack of agreement on the water quality problem
- Shallow aquifer not broadly viewed as a receiving water body
- Lack of a coordinated science-policy agenda around waterways protection

Lack of agreement / knowledge of the water quality problem

“We’ve been asking for the last 30 years what level of stormwater pollution can waterways sustain and what is the major source of pollution. We don’t know either. We have some idea for the Swan but not for underground water resources.”

“There is intense debate about the impacts from rural and urban areas. There is lots of debate, but very little information.”

“Groundwater is dropping and lakes are drying out. 40% of Perth has fallen, 10% is stable and the rest we don’t know. “We have all this groundwater but we still don’t know if we’re mining it.”

“Unlike in the east, there has never been intensive monitoring of best practice stormwater quality management because the State has never been well resourced.”

“There is a lot of resistance to science and knowledge coming from elsewhere in the world because we’re so unique and different. There is a lack of benchmarking.”

Brown and Keath, forthcoming

Lack of a coordinated science-policy agenda around waterways protection

“There is no coordinated approach around what we know and what else we need to know. This applies to policy and science.”

“We have a reasonable research and development community but they don’t have much impact on the ground.”

“We need some serious research. We don’t do any serious research and development. We do monitoring but we don’t turn it into management. We don’t tell researchers what our management needs are.”

“There is poor collection of information on stormwater and groundwater and the impacts of land development. This needs to be fed into decision-making.”

“We’ve developed the WSUD manual but it’s based on eastern practices. In Melbourne they’ve had extensive research and development. There is zero data for WA about whether these things work so it’s hard to convince local governments.”

“No one trusts the technical information. There are not enough people in DoW to assess and there are not enough people understanding the rule books. Local government don’t support demonstration projects. We need demonstration projects but no one understands.”

Brown and Keath, forthcoming

3. Trusted and reliable science

Suggested solutions

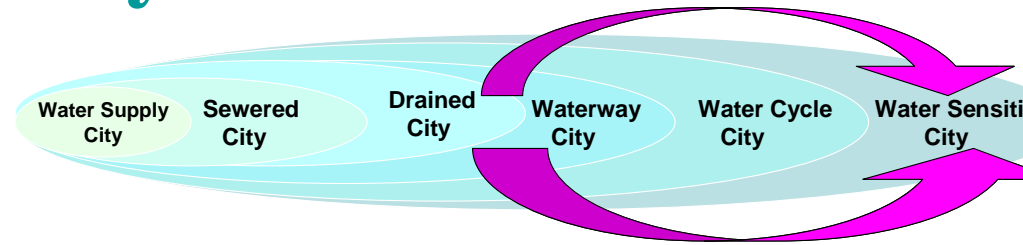
- Develop the science / policy community (dedicated R&D around waterway health)
- Stronger links to Universities and researchers
- Both social and physical sciences

“We need to pull together all the science that has been done across the metropolitan region and environs. We need to group it in some chronological order. We need to go through it and see the best use for future returns. Department of Water should do a literature review.”

“We need CRC type research.”

Brown and Keath, forthcoming

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5. Accountability

Key Gaps

- Lack of operational accountability for waterway health and urban stormwater quality
- Separation of environmental protection of aquatic systems from water supply and sewerage - not all dimensions of the water cycle are corporatised

Urban Water Administration

Waterway Health

Wetlands and
Groundwater Ecosystems

Supply, sewerage,
Drainage

Department of
Environment and
Conservation

Department of
Water

POLICY

Swan
River
Trust

Local Government

Water Corporation

IMPLEMENTATION

Waterway Health

Drainage

Supply, Sewerage,
Drainage

Lack of operational accountability for waterway health and urban stormwater quality

“We can’t go down the experimentation route because of liability.”

“We’re very good at closed pipe systems. All engineers know that back to front. Drainage is a natural system and it’s cyclical and subject to water quality issues and things that we don’t have control of. Really, it’s a multi disciplinary approach whereas other systems that’s not a question. It’s quite alien and requires special skills and we’re not equipped.”

“There is a lack of clear goals and objectives.”

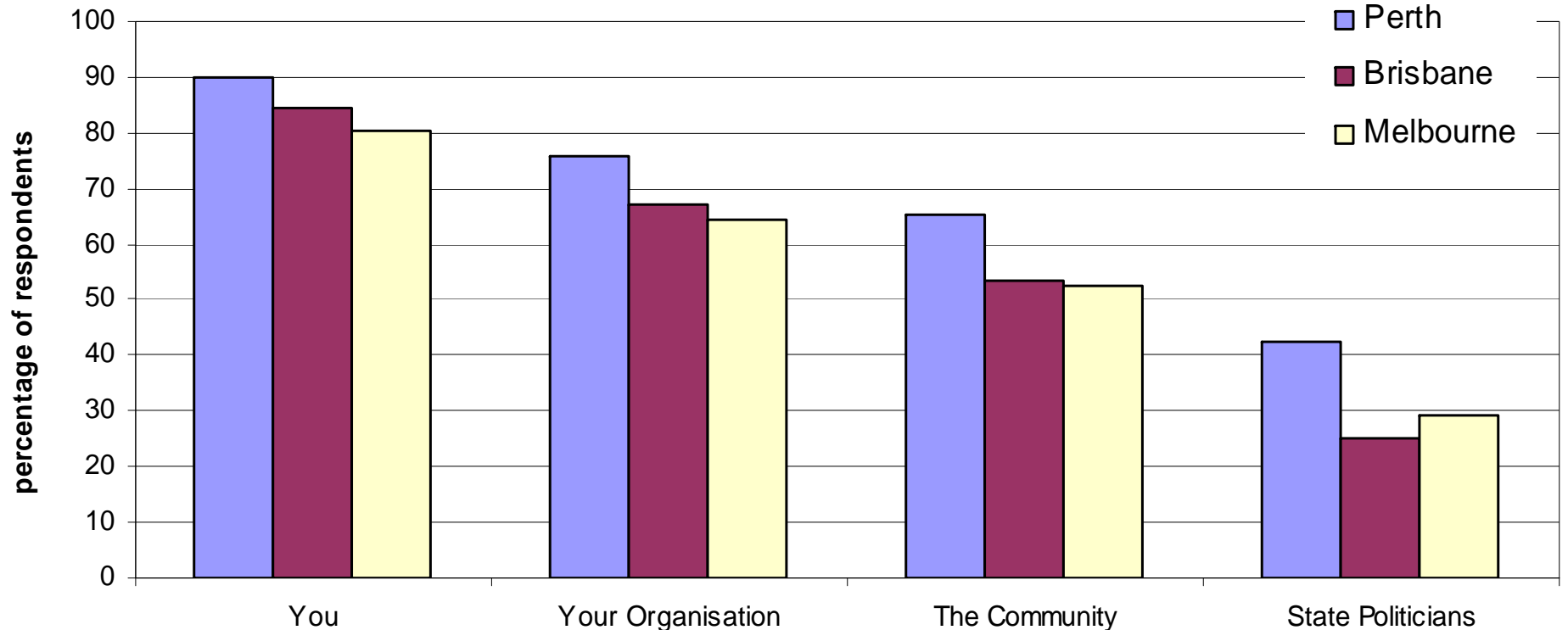
“We need a detailed operational model (BMP) which needs to be negotiated in partnership.”

“In terms of planning and engineering, there is a lack of proper water resource planning and technical solutions. Local government is reluctant to approve WSUD because we don’t know how it will perform and we have to pick up the cost if it doesn’t.”

Brown and Keath, forthcoming

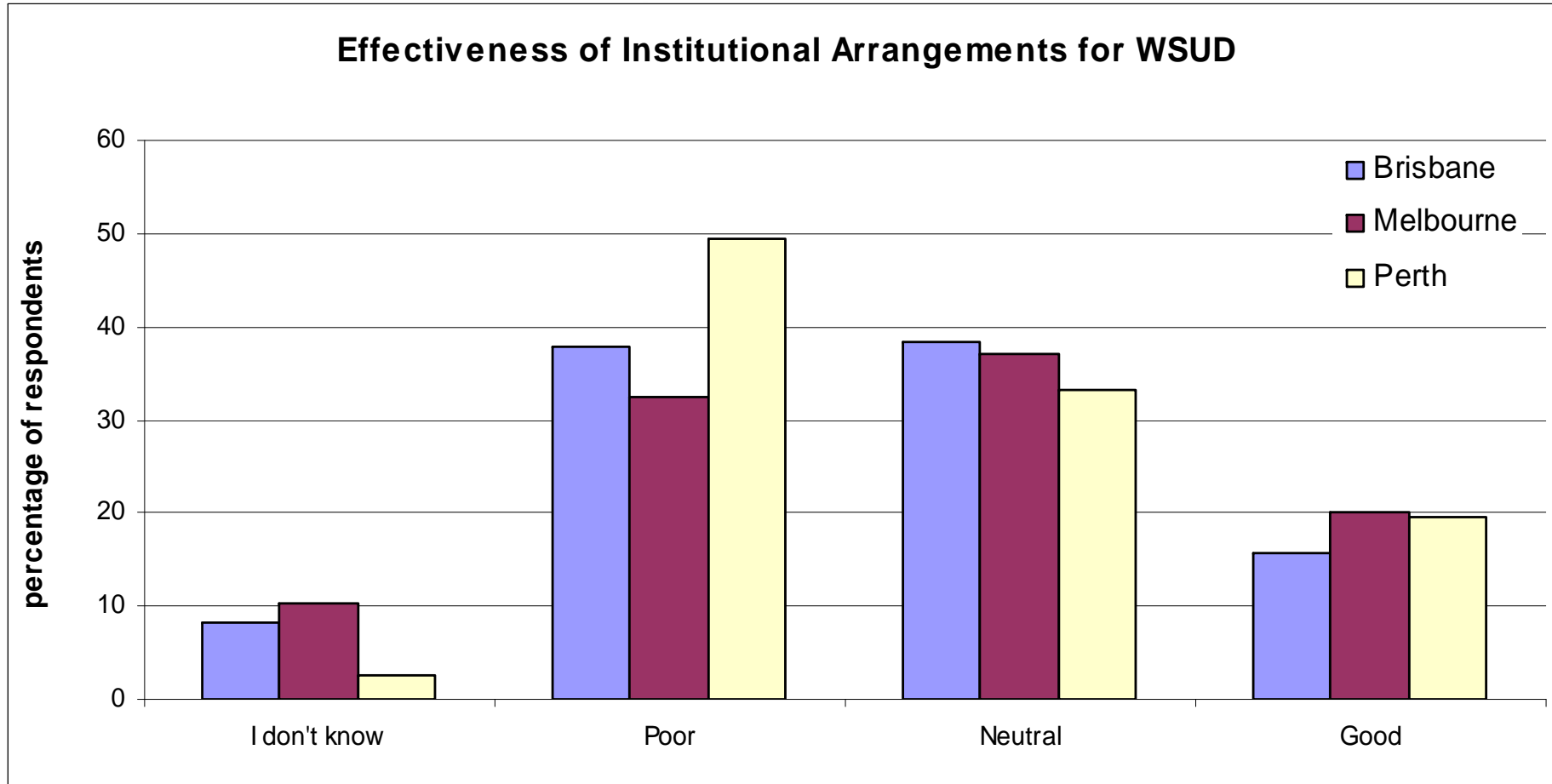
Urban Stormwater Quality

Perceived importance of receiving waterway health by city
(high & very high responses)

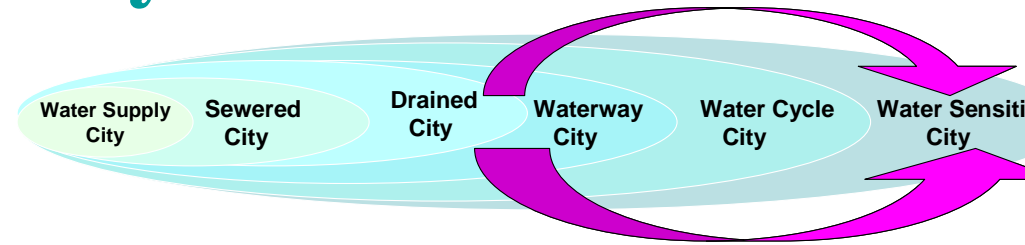


Effectiveness of Institutional Arrangements

- Water Sensitive Urban Design



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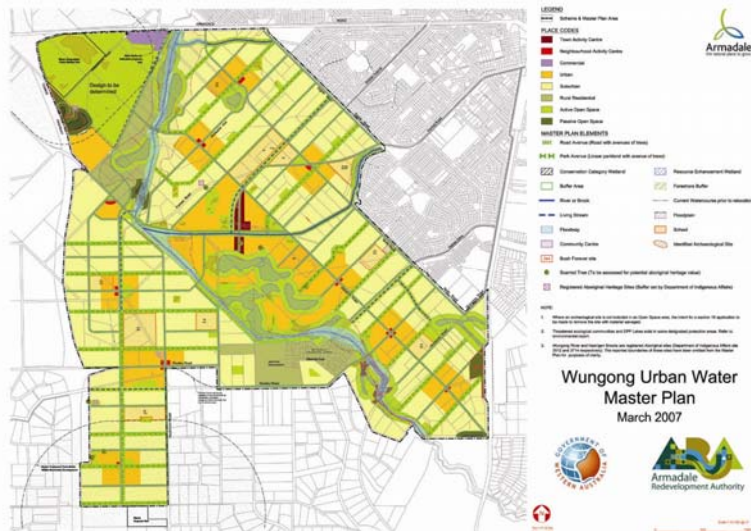
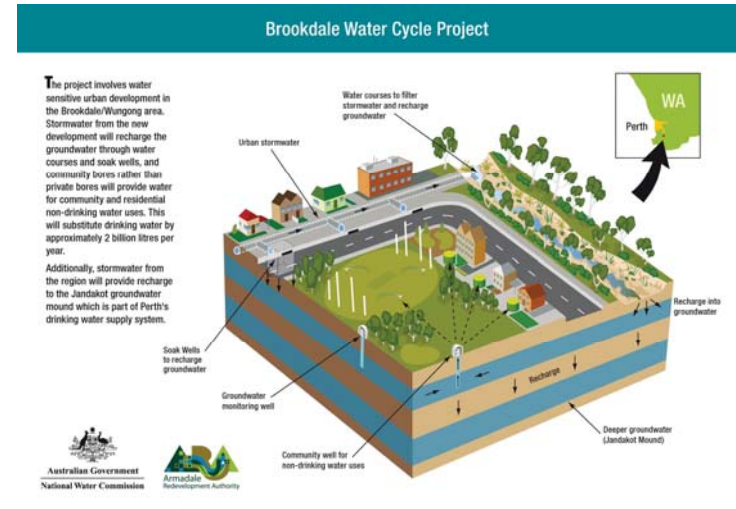
Technology Development

Policy and Institutional learning

7. Demonstration Projects & training

Progress

- Wungong
- Gracetown
- Brighton



Stormwater Quality Technologies

Implementation Factors	Perth SQM Technologies		
	Local	Precinct	Regional
Technical Feasibility			
Professional Knowledge			
Management Arrangements			
Regulations & Approvals			
Government Policy*			
Property Access Rights			
Capital Costs			
Maintenance Costs			

Stormwater Quality Technologies

Implementation Factors	Perth SQM Technologies		
	Local	Precinct	Regional
Technical Feasibility	Barrier	Barrier	Barrier
Professional Knowledge	Barrier	Barrier	Barrier
Management Arrangements	Barrier	Barrier	Barrier
Regulations & Approvals	Barrier	Barrier	Barrier
Government Policy*	Barrier	Barrier	Barrier
Property Access Rights	Slight Barrier	Slight Barrier	Slight Barrier
Capital Costs	Barrier	Barrier	Barrier
Maintenance Costs	Barrier	Barrier	Barrier

7. Demonstration Projects & Training

Suggested Solutions

“As policy staff, we need more national support, exchange and networking with other cities. We’re not set up well to do that in comparison to WSAA.”

“We should be building networks and sharing information with other States but there is not so much of this sharing happening.”

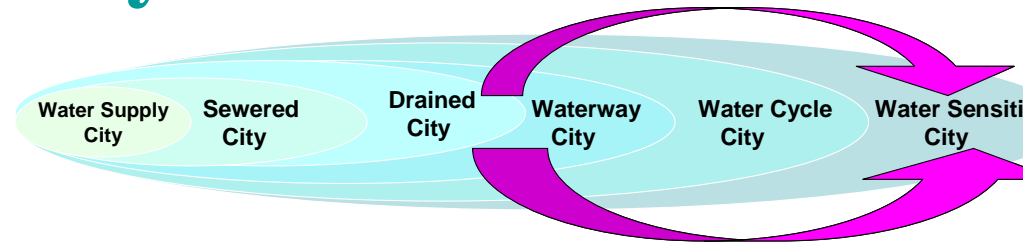
“We don’t need to change the institutional arrangements. We need everyone to buy into sharing the same goals and collaborate.”

“People always talk about partnerships, but to do them properly, resources need to be committed. The State doesn’t have a strategic view about partnerships.”

“We need demonstration projects. We need to bring the range of options together in one project to see the synthesis and how the water cycle works together. We need to be able to see how the operation, maintenance and governance works because this is people’s biggest concern.”

Brown and Keath, forthcoming

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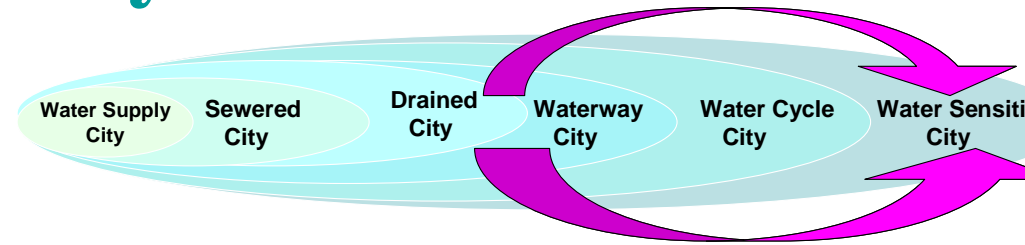
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Thank-you !

