Managing urban wastewater as a resource: A leapfrogging approach

Kerrie Burge

watersensitivecities.org.au
Urban Water Transitions: Development continuum
Traditional servicing takes a linear approach

Opportunity for developing cities to ‘leap-frog’ toward becoming water sensitive cities

Co-benefits:
✓ Wastewater recycling & economic opportunities
✓ Environmental protection (including fisheries etc)
✓ Resilience through diversification of water supplies

Adapted from (Brown, Keith and Wong (2009), Wong and Brown (2009)
Raingarden tree pits - typical profile

- inundation tolerant tree
- addressing trip hazard
- ground cover vegetation
- extended detention
- protection from traffic
- break in curb
- road
- loamy sand filter media
- sandy transition layer
- gravel drainage layer containing perforated drainage pipes
- connection to conventional drainage system

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A Water Sensitive Approach in Informal Settlements

- **Low-cost** and easy to maintain and operate
- **Well understood**, and not experimental
- **Decentralised**, not requiring connection to large centralised infrastructure
- **Flexible in scale** and be able to fit into relatively dense urban environments
- Appropriate for the **specific conditions**
- Increase **climate resilience**

- Most importantly the approach should aim to deliver solutions that have multiple benefits, ensuring multiple challenges are addressed together wherever possible
Water Sensitive Revitalisation Tool Box

- Smart Septic Tank
- Wastewater Treatment Wetland
- Aerobic Surface Wetland
- Nature-based Treatment System
- To Urban Agriculture

Examples of implementation:
- Stormwater Biofilter
- Flood Protection Wall
- River
• Suva, FIJI and Makassar, INDONESIA
• 5 year action research programme
• WSC approach to infrastructure delivery
• RCT – environment and human health assessments
Thank you