

Water Smart Cities

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Water Smart Cities Creating technologies for the future











Australian thinking



Service delivery functions



Agenda

- What is a Water Smart City?
- The Water Smart City project
 - Objectives
 - Tasks
- Outlook





A few facts on 'natural' water in cities

- The average water drop that has travelled through all of the Elbe has visited 40 households along the way.
- Urbanization will continue and urban water management will be as essential to inhabitable cities as management of transportation and energy.
- We started building sewered cities 150 years ago. While it was key to development of healthy cities the function has changed every 50 years. And it is time to change again.

The CPH story

The most expensive infrastructure must be rethought.

Water Smart Cities are retrofitted to be

- Env. sustainable,
- Resilient to climatic extremes, and
- Liveable





So smart cities must be water smart







Characteristics of the Water Smart City





	Dry weather	Wet weather
Annual runoff	50%	50%
Extreme runoff	1%	99%
Problem	Hygiene, NPO	Toxicity, Priority pollutants, flooding

	Dry weather	Small rain	Design storms	Contingen cy
Annual runoff	50%	38%	12%	<1%

Modelling approaches

	Dry weather	Small rain	Design storms		Contingend	y
Strategic planning		<				
Planning				Simp	lification:	
Detailed planning	Spreadsheet	Lumped	10	Deep	uncertain	ty
RTC, internal	WWTP, pumps	Rule based Linear models MPC	Rule a MPC	sed	MPC	
				Simpli	fication:	
Warning, Bathing water		• • • • • • • • • • • • • • • • • • •		Robus	t and fast	
Warning, Cloudburst						



Project rationale



To be linked to existing – and new projects on sensors and actuators



WSC deliverables to society

- Two tools close to market on RTC
- One research tool on strategic planning
- Demonstration facilities on RTC to be used for international conferences (IWA WWC 2018 & 2020, WaterMatec 2019, SIWW)
- Demonstration facilities to facilitate export



Conclusion and outlook

- WSC project will run 2016 2020
- Linked with existing and other partner activities
- Focus areas outside project that need special attention:
 - Sensors
 - Actuators
 - Linking with other major city planning (Energy!)
- You will probably and hopefully hear more

