



How to develop planning processes for Utilities to achieve a more Adaptive Urban Water System

Simon Tait, Pennine Water Group, University of Sheffield

Liz Sharp Pennine Water Group, University of Sheffield

Emma Westling, Pennine Water Group, University of Bradford

Marta Rychlewski, Pennine Water Group, University of Bradford

Richard Ashley, Pennine Water Group, University of Sheffield



- **Adaption action includes both technical and institutional measures**

Key Characteristics

- **Learning and review (need space for conflicting views)**
- **Recognise a range of futures**
- **Clear route for action/implementation**



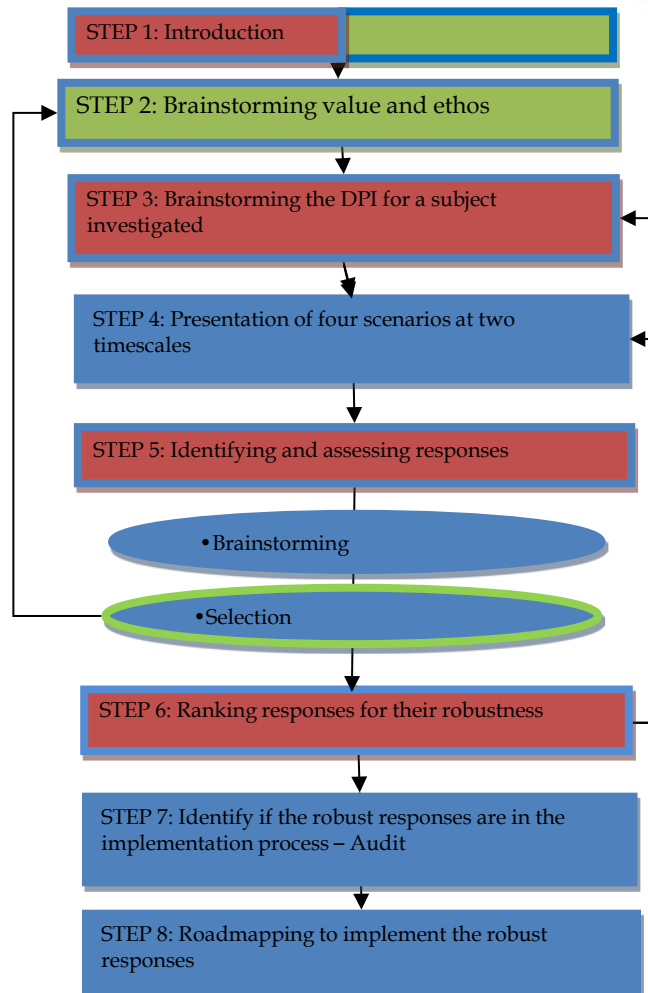
Key elements

- **Structured way of thinking**
- **Auditable**
- **Context specific –location/team**
- **Inclusive**
- **Discursive**
- **Clear route to implementation**

Three phases – workshop based



APP Overview





- **Aspirations for Water Management**
- **Discussion framed with regard to sustainability**
- **Social-economic- environment**
- **Identify current and future pressures on water management**
- **Identify current and future balance between social-economic-environment**
- **State key values for future water management actions**



- **Range of possible, plausible futures**
- **Scenarios – High/low climate change, high/low capacity to adapt**
- **Identify key Driver- Pressure Impact chains**
- **Identify responses test against values**
- **Test responses across all scenarios**
- **Robustness and effectiveness**
- **Rank and report**

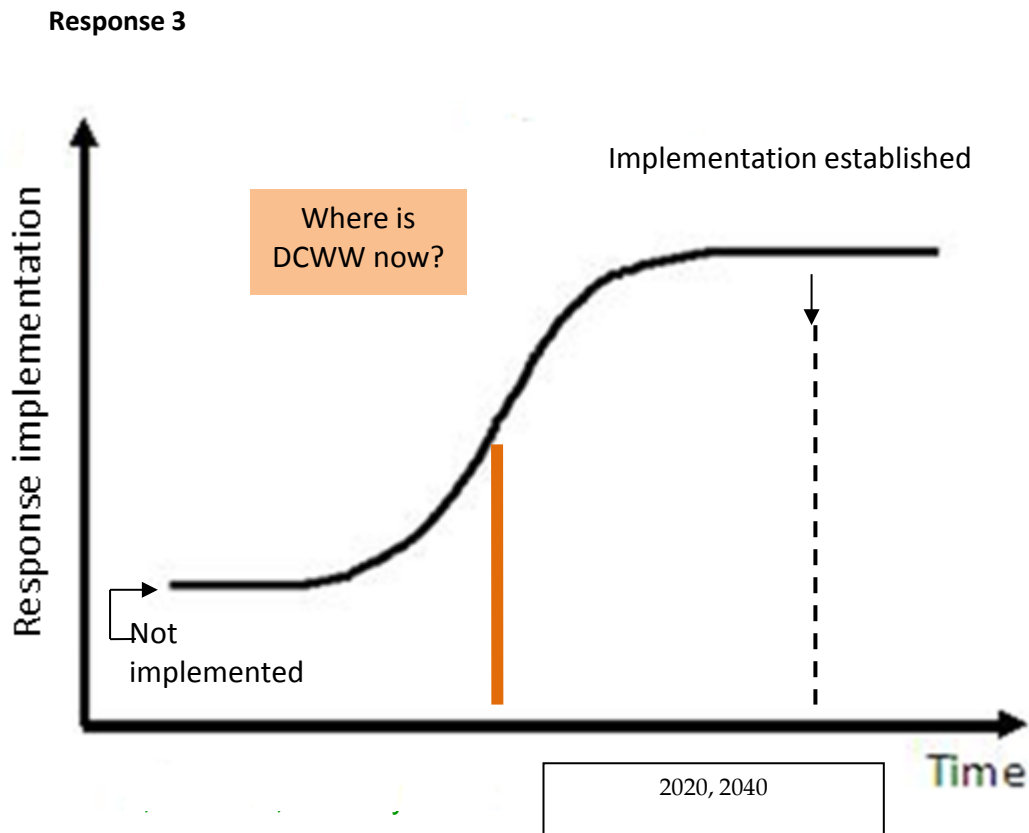


Scenario Workshop Outcomes

Driver, Pressure, Impact	Rank	Response	Robustness score		Now in application
			20's	40's	
Climate Change - Changing pattern of weather - Changes in land use	1	Legislation to control more land with the people/Education + capacity building	4	4	partially
Social - Greater imbalance of equity - Potential for 'poorest' to have more influence.	2	Work with and influence government, Local Authorities, firms and others	4	3	yes
Science & Technology - Limited funds (robin hood) - (Low cost technologies) More self-reliance	3	More self-reliance: Simple solutions based on historical knowledge. Low cost communal assets + infrastructure with capacity for change on a local level.	3	3	partially



- Input – ranked robust responses
- Take each response
- Examine resources required to implement
- Who (internal /external)
- Timescale
- Report – final output





Roadmapping Results



Theme	Responses	Short-term actions (next 5 years) (all short-term actions should be continued on the medium- and long term basis).	Medium-term actions (5-20 years)	Long-term actions (20-50 years)
A. Baseline	1, 2 and 3	<ol style="list-style-type: none"> 1. Establish DCWW current position towards SWM in relation to <ol style="list-style-type: none"> a. What DCWW wants in the future for customers, the environment and the company in context of SWM b. Responsibilities and accountability of major external stakeholders (Environment Agency, Highways Agencies, local authorities) c. Responsibilities, goals and accountabilities of internal partners – e.g. Goals for Operations that link with Strategy. 	<ol style="list-style-type: none"> 1. Maintain and review the baseline in collaboration with major stakeholders 	<ol style="list-style-type: none"> 1. Maintain and review the baseline in collaboration with major stakeholders



- **Delivered action plan for Surface Water Management in DCWW**
- **Structured long term thinking – timescales suitable for climate change and water infrastructure assets**
- **Workshop based process – learning/review - delivery**
- **Responses not considered before – complex elements of both technology and institutional change – range of timescales, clear review mechanisms possible**
- **Industry styled guidance manual**



Adaptation Planning Process

Key steps for implementing a strategic planning process for institutional adaptation in a water utility

Guidance Manual

MARTA RYCHLEWSKI
EMMA WESTLING
LIZ SHARP
SIMON TAIT
RICHARD ASHLEY



+ Deliverables

- Development of Process
- Reports on workshops – examples of output