

# DWMP-blog LIVE!

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- A few challenges from me
- Feedback from all of you
- Panel discussion later

**HEMDEAN**  
**CONSULTING**

## Audience feedback



- SLIDO code is
- There are 5 questions
- Select one option for each question

# What is wrong with DWMPs



1. They shouldn't be similar to WRMPs
2. Setting the right targets?
3. Considering climate change?
4. Delivering long term strategy?
5. Developing options?
  
6. What should change for Cycle 2?

# DWMPs are not the same as WRMPs



Topic	WRMP	DWMP
Spatial resolution	Towns	Properties
Time resolution	Peak day	Worst 5 minutes
Target setting	Top down	Bottom up
Environmental touch points	Dozens	Hundreds
Networks	Trunk only	All assets
Terminology	Supply / demand	Flow / capacity
Improvement options	Dozens	Hundreds
Statutory	Yes	???

# Setting targets

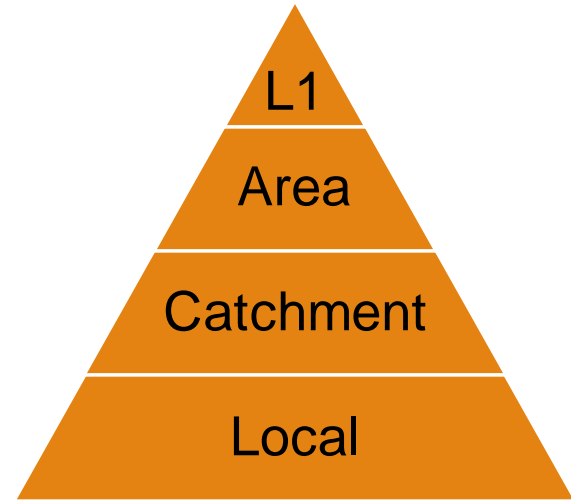
- For WRMPs shortage of water means that a whole town is affected
- For DWMPs flooding affects individual properties
- Scoring catchments as 0, 1, 2 on average performance is nonsense

“45% of the population live in catchments where more than 4% of the population are at risk of flooding from a 50-year storm”

“9.4% of properties are at risk of flooding from a 50-year storm”

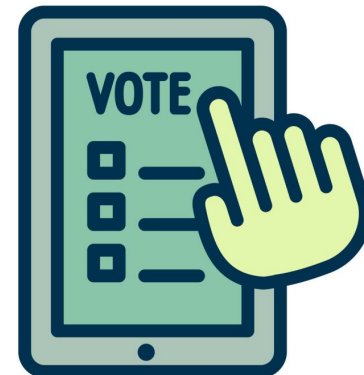
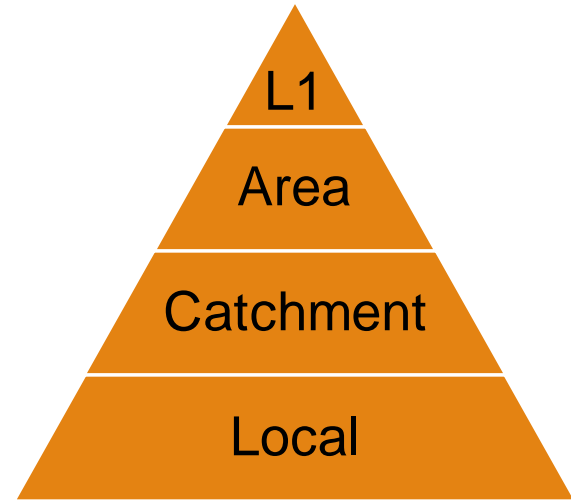
- Some companies did not investigate options for flooding for catchments that had <5% properties at risk. **Did those 5% customers not matter?**

- Every problem matters



## Q1 – Does reporting average performance for catchments help us develop the plan?

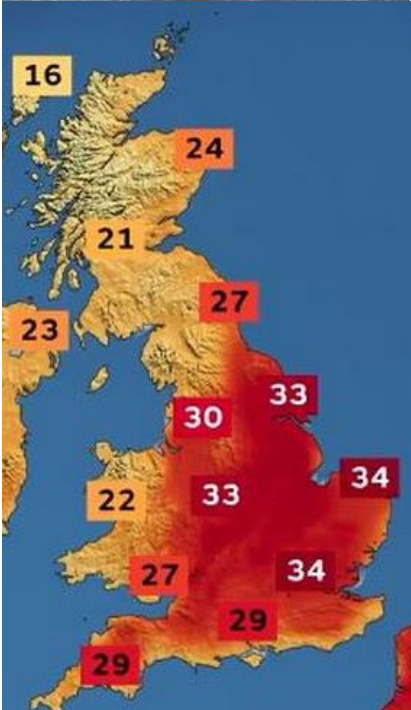
1. Yes definitely, if a catchment hits its overall targets then ignore the remaining problems
2. No, we should look at large hotspots of problems within the catchments
3. No, all individual problems should be considered for intervention even if they are the only problem in a catchment





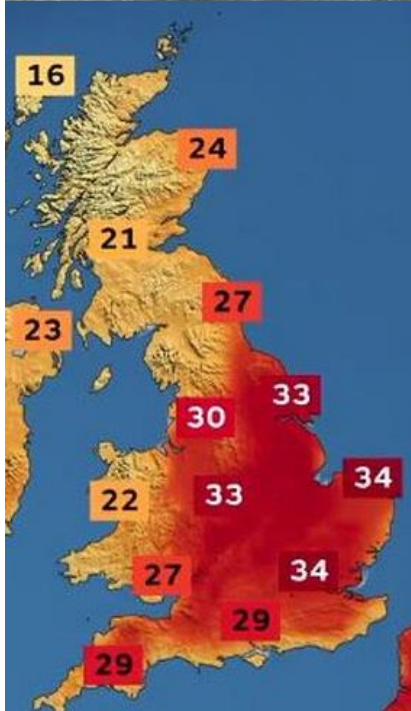
# Climate change

- Most DWMPs considered
  - Increased rainfall intensity
  - Sea level rise for costal catchments
- Some considered
  - Increased river levels impacting flooding
- Did any consider?
  - Low river levels reducing dilution
  - High river temperatures increasing pollutant impact
- None considered
  - Temperature impact on treatment process
  - Increased asset failures in heatwaves
  - ...



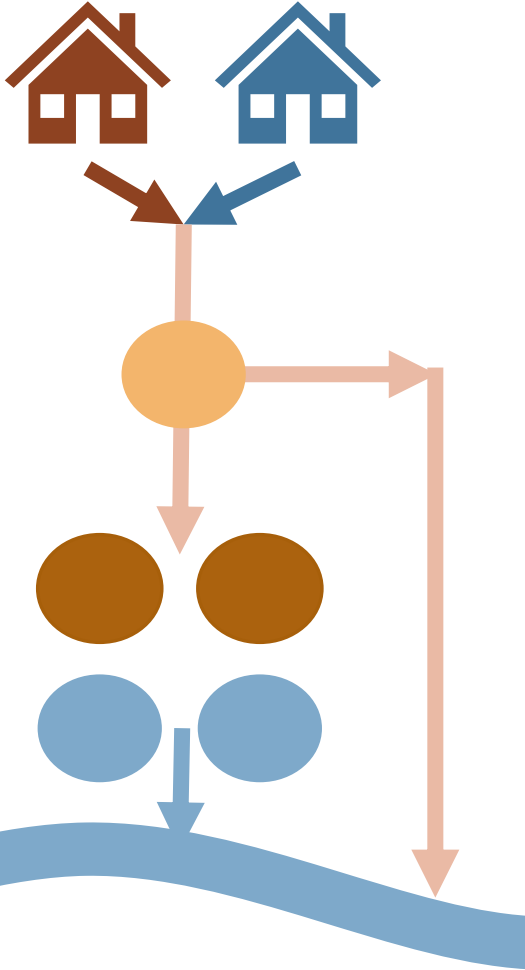
## Q2 – Which aspects of climate change were included in DWMPs

1. Just rainfall intensity and sea level
2. Also included high river levels
3. Also included reduced dilution and high temperature of rivers
4. Considered everything including second order effects



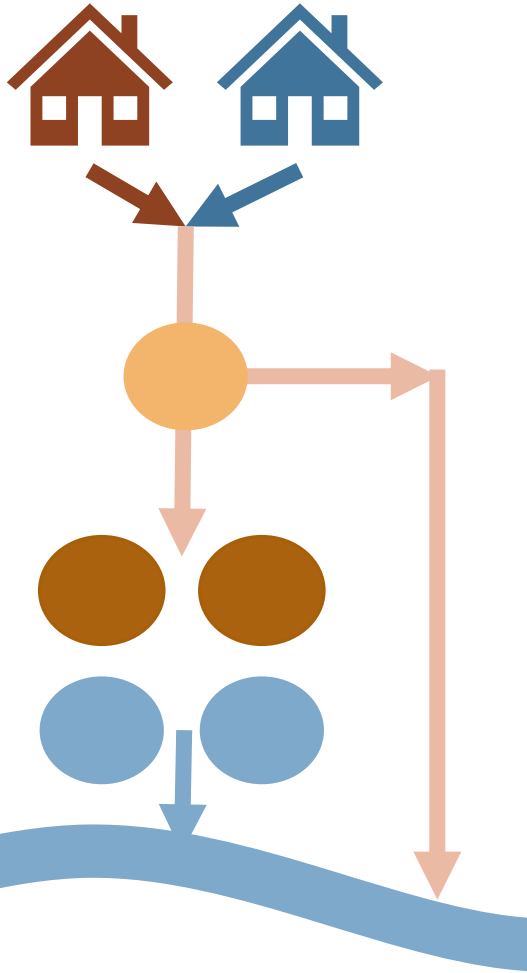


# Long term strategy



- DWMPs were intended to be long-term, holistic studies of the drainage and wastewater system – including
  - Environmental impact and wastewater treatment
  - Other surface water drainage
- No long term planning for relocating WwTW to minimise impact
- Consideration of wastewater treatment was generally short term and not integrated.
  - ***“Due to the detailed evaluations needed at WwTW, we do not think it is appropriate to assess needs beyond 2030.”***
- Integrated surface water drainage was left to Surface Water Management Plans drawn up by local authorities

## Q3 – How should DWMPs and SWMPs be integrated



1. One body with responsibility for all drainage
2. An integrated DWMP / SWMP but separate responsibilities for delivery
3. Separate plans but with consultation between bodies



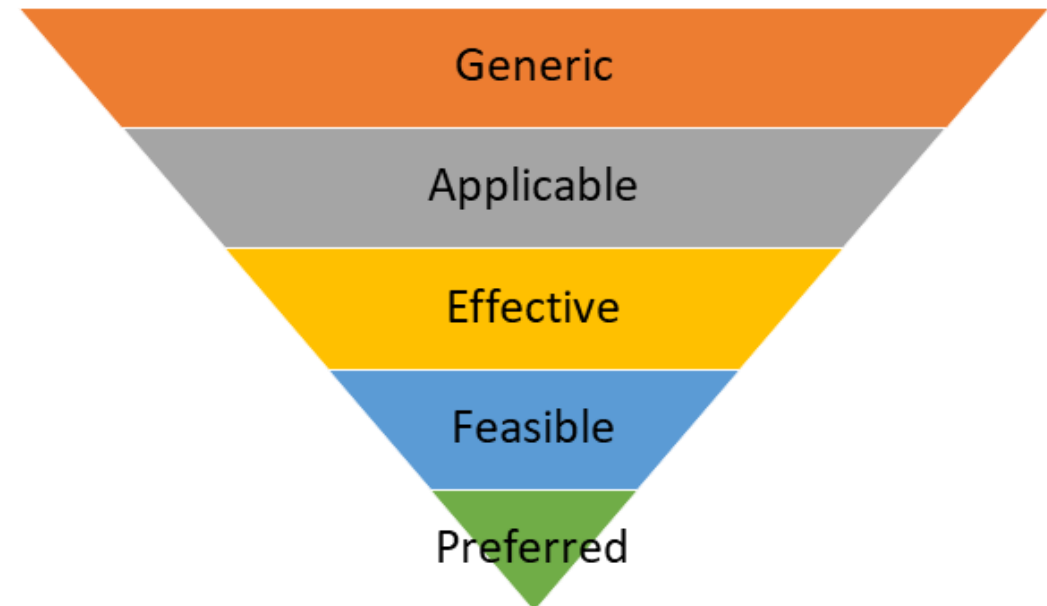
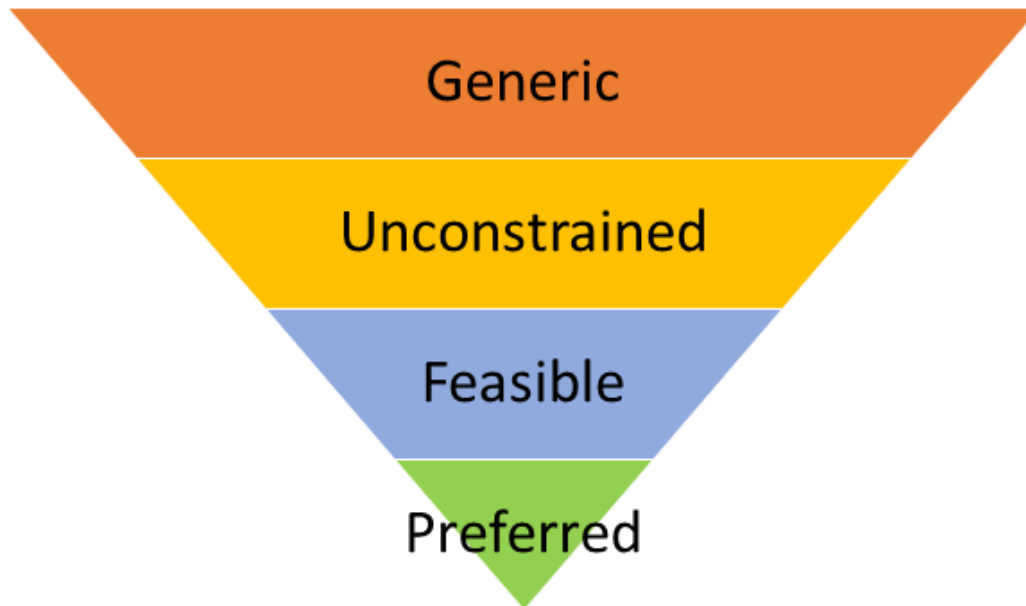
# Selecting options – which?

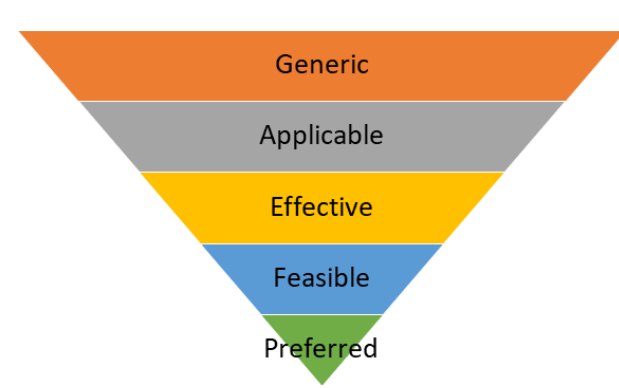
- **WRMP**

- Options are defined by the capacity they deliver
- The key step is to consider feasibility and cost

- **DWMP**

- Options are defined by other measures
- Key step is to model to understand effectiveness
- First eliminate ones that are not applicable





## Selecting options – how?

- Start with generic options (between 7 and 85 options)
- Filter to those that would be **applicable** and potentially **effective**
- But how do we select the best combination of options for the catchment?

### Optimise

- Try all combinations of options and sizes
- Optimise to find the best one(s)

### Stepwise

- Rank by likely best value
- Work down the list in order

### Combined

- Stepwise for initial solutions.
- If complex and expensive, refine by optimisation.

Generic

Applicable

Effective

Feasible

Preferred

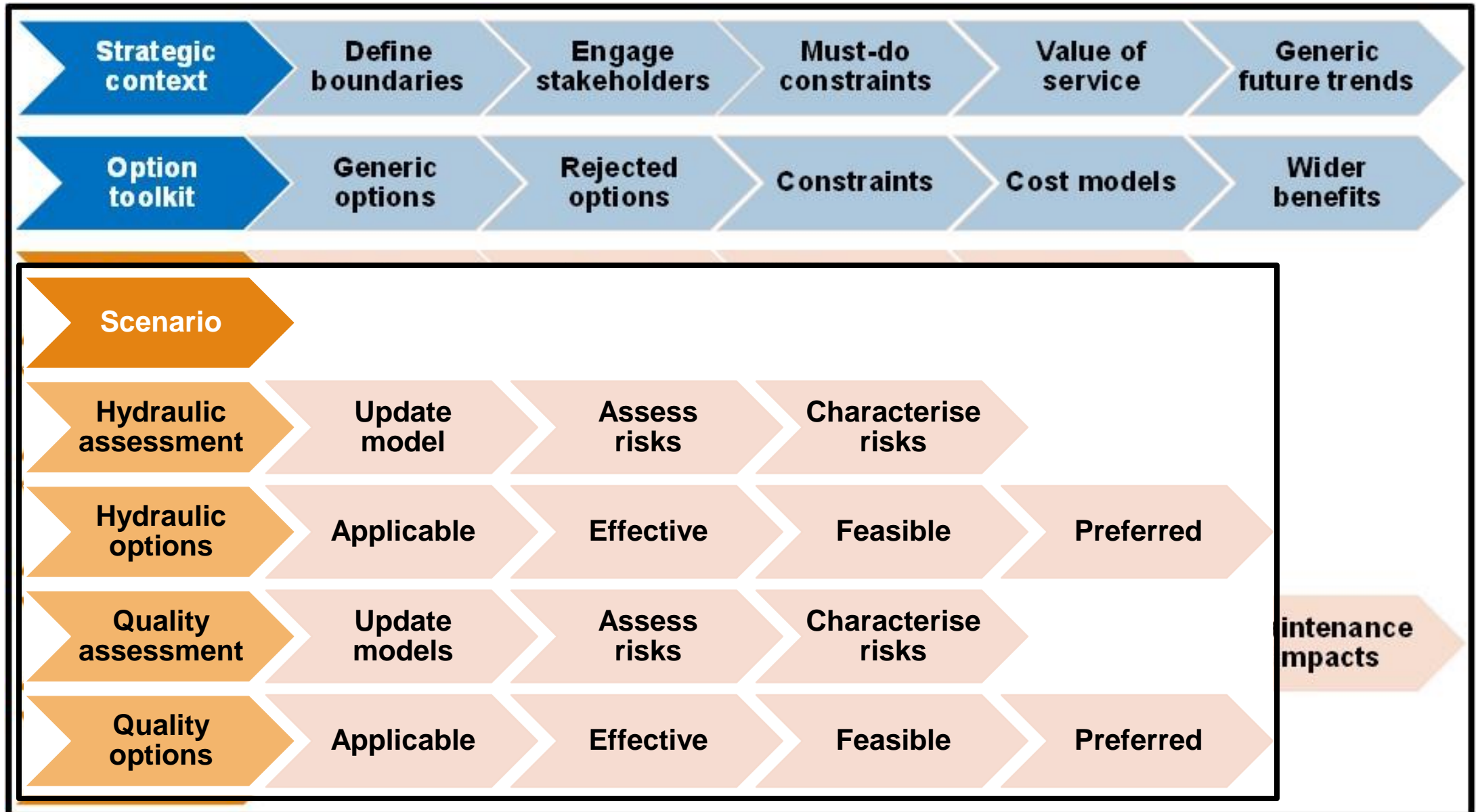
## Q4 – What is the best way to find the best value options

1. Selecting just a few preferred generic options
2. Stepwise application of options pre-ranked by expected value
3. Manual consideration of all possible combinations of options
4. Using an optimiser to find the best combination





# What should Cycle 2 look like



## Q5 – How should we do DWMPs for Cycle 2



1. The same as Cycle 1
2. A few minor tweaks
3. Radically different



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**DWMP -blog 21**  
The DWMP Blog - Episode 21: An afterthought - strategy?  
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The DWMP Blog - Episode 16: No destination - or heading sideways?  
May 10, 2021  
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**Interests**

**Companies**

- University of Southampton
- Thames Water
- Scottish Water

**Schools**

- University of Southampton

**Groups**

- Networks Knowledge Institute
- Knowledge and Community Network
- Water, Environment and Construction Innovations City

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Thanks for listening

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