



Water Industry Forum  
Delivering Resilience in PR19 and Beyond  
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An external perspective – how  
ready are the companies?

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# Introduction

An external perspective – how ready are the water companies?

1. Are companies ready for PR19?
2. Are companies ready for anything – i.e. are they fully resilient?

# Why resilience matters

Government



Cabinet Office

Regulator



Companies



Customers



# Ready for PR19?

**Resilience** one of the key themes of PR19

High expectations for assessment and articulation of **resilience**

## Defra – Strategic priorities and objectives for Ofwat

.... meaningful engagement with customers ... demonstrate that plans acceptable. Where **residual risks remain** to long-term resilience, we expect companies to **describe these transparently ...**

Ofwat should ensure that companies assess resilience of their system and infrastructure against **the full range of potential hazards and threats** and take proportionate steps to improve resilience where required

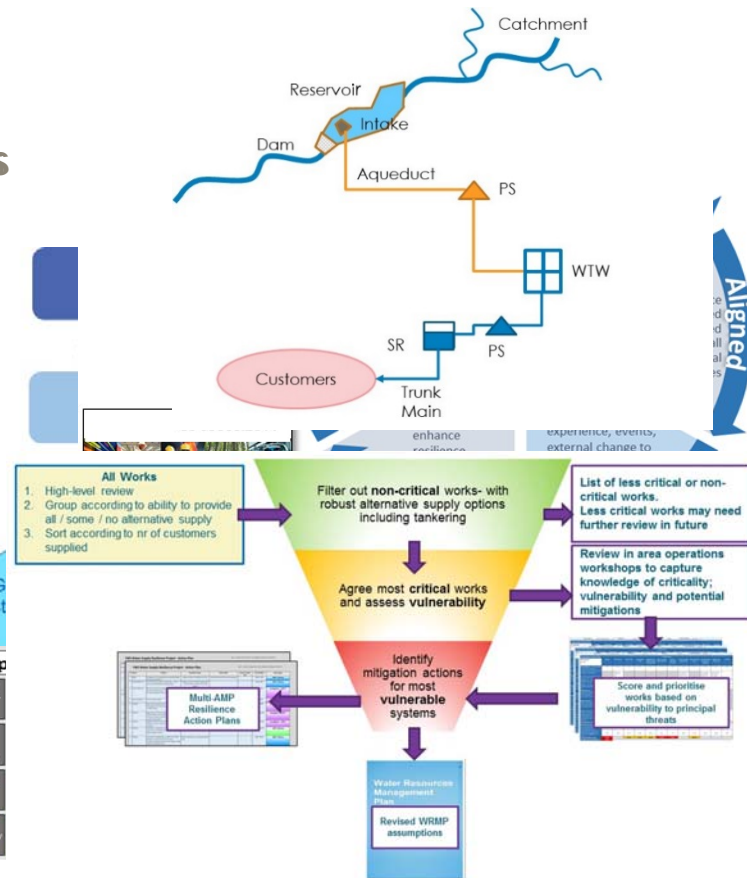
## Ofwat – final methodology for the 2019 price review

**Test 1 - evidence to assess risks to resilience**  
Companies' appraisals should include a **robust, objective, comprehensive and quantitative assessment** of the **principal risks** they see to the **resilience and delivery of the services**

... encourage companies to **publish results of resilience assessments** in business plans for greater transparency. Will consider extent to which they're supported by **global best practice** ...and extent of **Board / third-party assurance**

# How are companies responding?

1. High level strategic frameworks and policies
2. Organisational maturity assessments
3. Asset system resilience assessments
4. Development of resilience metrics and scorecards



Water Supply			
Site Name and Capacity (M/d)	Anytown	50 M/d	Equivalent Properties Supplied / Average Output
Disruption from 'Principal Threats' (how many would cause significant disruption if outage > survival time)	1 out of 10 considered	62 % of customers	Properties at Risk / Deficit (Equivalent nr of props without alternative supply / shortfall in supply)
'Survival' Time (time supplies can be maintained using storage and rezoning (hrs))	36	Marginal	Estimated likelihood of outage exceeding 'Survival' time (during next 10 years)
Reliability (Unplanned shutdowns / year and quartile for production hrs lost)	32.5 shutdowns / yr	Lower Quartile	Safe Restart (Is site able to run to waste to allow safe restart)

## Resilient Enough?

- Over multiple AMPs levels of service have improved
- Capex and opex efficiencies have increased
- Major service disruptions have been rare exceptions
- Management systems have been implemented and developed
  - Operating Procedures
  - Asset Management
  - Risk Management
  - Cyber Security
  - SEMD

### Current Resilience



good service outcomes are not proof of **resilience**

## Resilience to known threats

Companies understand principal threats to service but can they articulate....?

- Resilience objective - threat level to which they aim to be resilient
- Basis for setting level – customer informed?
- Policy / process which manages that threat is comprehensively applied
- Gaps is ability to meet resilience standard is known
- Plans are in place to close any gaps over the long-term

### *Principal Threats*

- *Flooding*
- *Power outage*
- *Cyber attack*
- *Terrorism*
- *Loss of critical supplier*
- *Control system failure*
- *Asset failure*
- *Extreme temperature*
- *Extreme rainfall*

Does existence of a policy guarantee **resilience**



## Resilience to un-anticipated threats

If all principal threats are addressed  
are we fully resilient....?

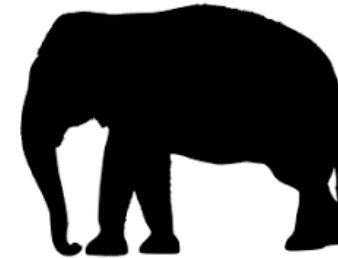


- Threats or failure modes we didn't anticipate
- Too big to deal with
- Thinking the unthinkable (unpalatable)

Storage Capacity

Survival Time

Stand-alone communities



Develop generic **resilience** standards to  
drive long-term system development plans

## Concluding remarks

- PR19 process has encouraged more robust and quantifiable assessment of **resilience**
- Better assessment and quantification of **resilience** doesn't make us more **resilient**
- Efficiency / affordability challenge can encourage over-reliance on response and recovery
- Building a more balanced approach to **resilience** requires different long-term approach
- All stakeholders have a role to play – PR19 is just the start





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