

# Appendix 1.1.L - Resilience

Wessex Water

September 2018

Business plan section	Supporting document
Board vision and executive summary	
1 Engaging customers	<b>1.1 Summary of research findings</b>
	1.2 Communications strategy
	1.3 Customer participation and behavioural engagement strategy
2 Addressing affordability and vulnerability	
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5 Markets & innovation: wholesale	
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# Resilience Report

Presentation of research findings

18<sup>th</sup> May 2017



What expectations do customers have re. resilience?

What is acceptable resilience planning across different risk scenarios?

Communications implications for resilience planning

Prepared to pay for resilience generally (when uninformed)?

Prepared to pay for specific resilience strategies (when informed)?

Principles for using language and describing resilience measures



**Method, objectives**

**Context & unprompted preparedness to pay**

**Response to scenarios (Prompted preparedness to pay)**

**What is driving preparedness to pay for resilience**

**Communications implications**

**Conclusions**



## Stage 1

### 6 x 1 hour friendship paired depth interviews (filmed)

- Using 'Listening Project' approach: friends discussing future scenarios in private conversation
- Context material piloted
- Chippenham

## Stimulus development

- **Film** to introduce future scenarios: Expert voices including customers Wessex staff & stakeholders
- **Context boards:** objective information about current risks & Wessex Water's performance
- **Scenarios** x 4 with investment choices

## Stage 2

**4 x 3 hour deliberative events held in community venues**  
**2 x 2 hour groups with economically vulnerable customers**  
Bath | Yeovil | Shaftesbury | Trowbridge | Weston Super Mare | Bridgwater

## Fieldwork dates

**22<sup>nd</sup> March - 19<sup>th</sup> April 2017**

2 x hour extended groups, all economically vulnerable (SEG E)

**Trowbridge**  
5 x <45 years  
Mainly younger family

**Yeovil**  
7 x >45 years  
Mainly empty nesters

## Range of circumstances achieved across sample

- Mixture of unemployed, retired, working part time
- All on low incomes and/ or on unemployment benefit, housing benefit
- Mix of metered / not metered
- Some physically vulnerable: disabled, partial mobility, long term illness
- Some on special tariffs

## *Specific recruitment specification per group:*

- Mix of males and females
- Mix of life-stage to reflect local population
- Minimum 1 with no internet access
- Minimum 1 with a physical impairment / disability
- Minimum 1 who recently experienced a personal life crisis/ difficult event e.g. divorce, death, illness

Resilience Research – Qualitative 2017

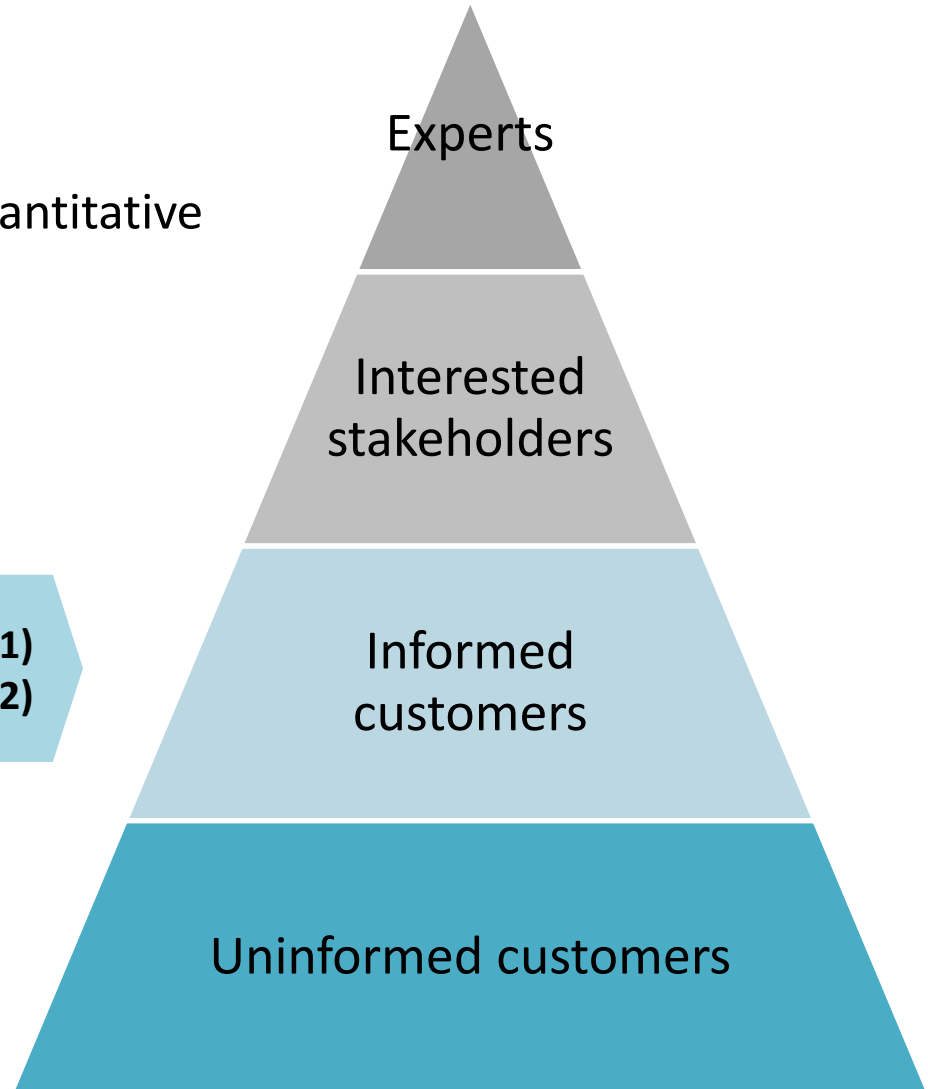


Image Tracker – Quantitative 2016/17

Young People’s Panel – Qualitative & Quantitative 2016

**Deliberative events (81)**  
**Vulnerable groups (12)**

6 paired depths (12)  
Tracker 2016-17 (1,000)  
Young People’s Panel (21)  
School Survey (578)



# One page overview...

1. Customers, in general, have a low appreciation for future risks and the need to build resilience into the water infrastructure
2. Customers expect water companies to be planning and investing for the future as a matter of course (and for bills to cover this).
3. In principle, the majority of customers are prepared to pay\* a little more to future-proof water services for future generations. In practice (and when informed) preparedness to pay more relates to mitigating risks that are not part of a company's BAU e.g. where there is a wider, societal dimension
4. Different strategies elicit different responses depending on: perceived likelihood of scenario; nature of impact; perceived responsibility; and whether it affects *the many or the few*
  - Prepared to pay is greatest for environmental damage
  - And lowest for mitigating against water restrictions
5. However there are several factors that constrain how much customers are prepared to pay for future-proofing strategies:
  - Current service perceptions are positive: *is it necessary?*
  - Customers are one part of a wider responsibility chain: *is it fair?*
  - Indications of increasing financial pessimism: *can I afford it?*
6. Customers see more value in strategies that have a clear logic; are preventative; resonate emotionally; and are low cost
7. Customers also demonstrate that they are prepared to do their bit to mitigate risk

\* Preparedness to pay in this report is used qualitatively and is not derived from statistical analysis.



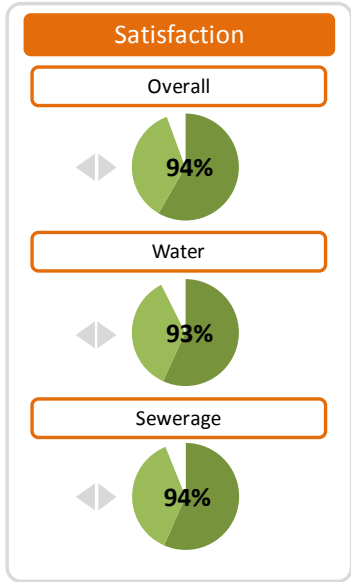
- **The customer context: beliefs, expectations and understanding**
- **Preparedness to pay (uninformed)**



1

Customers are not consciously considering future risks to their water supply – but on consideration expect Wessex Water to be managing future risk

Customers have no reason to be alarmed – the service is good  
 2016/17 Tracker: satisfaction levels remain very high



*Do I believe events could happen?  
 No! If it was gonna happen it would have happened. I've used water for 40 years, had one drought and a couple of contamination examples which tend to be human error.  
 [Paired depth]*

Qualitatively, there is often disbelief (denial) that scenarios could happen: most risks seem remote

*I take water for granted, I see it as a human right, I expect it always to be there  
 [Young People's Panellist]*

Customers and future customers have very high service expectations

**When asked directly, spontaneous expectations of what water companies need to address for the future**

Frequent mentions	Other mentions	Isolated mentions
Population increase	Leak reduction	Terrorism
Saving water, education on water efficiency	Metering, smart metering, universal metering	Desalination
Better capture, reservoirs	Grey water, recycling	National water grid
Climate change, weather	Water quality	Affordable water
Avoiding e.g. drought and flood	River environments, pollution	

Customers anticipate that water companies are managing future risks such as demographic and climate changes

## Expectations of existing future-proofing investment

High expectation of companies to be investing already

- Infrastructure (assets) upgrades
- Anticipating and preparing for future demand

Higher awareness/assumptions about potential (known) challenges  
Expectation that this is covered within current bills

*I thought we were paying bills to prevent this: this shouldn't happen for financial reasons - they've had our money.*

*Are they investing enough in the future? Chippenham is growing at such a rate – the treatment plants weren't built to take the capacity*

*Everyone pays water bill and it's not cheap; if they [Wessex Water] don't have continual investment problems will occur.*

- Mitigating environmental risks
- Mitigating other external risks

Low expectation of existing future-proofing (low awareness)

Lower awareness of environment and external (unknown) challenges  
Not necessarily assumed that mitigating these risks is within current bills

*We will have to pay more money I think...*

All verbatim from Listening Post depths in Chippenham

## 2

### Envisaging the future: customers draw on commonly held beliefs & personal experience



- Wessex Water region is very wet
- More houses being built (threatening community, local environment)
- Future will involve unimaginable technological advancements (smart homes, internet of things...)

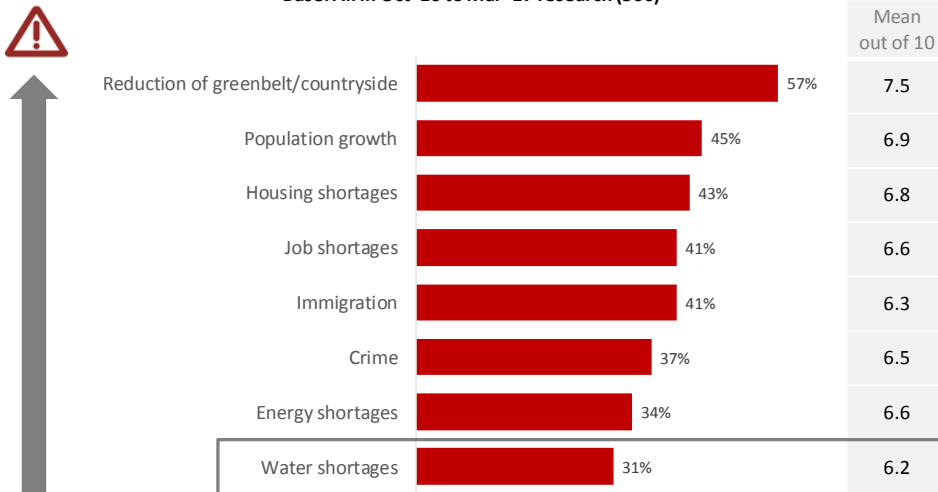


- While climate change is important, its impact on e.g. the water supply is not understood
- The future is hard to contemplate

Impacts of demographic changes more immediate than water shortages (which are bottom of the list for customers concerns)

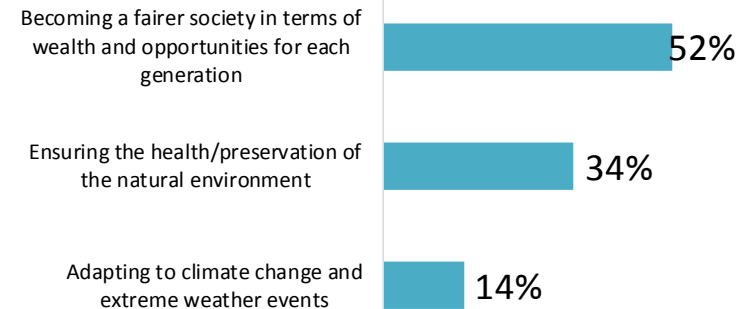
Future customers prioritise social and environmental issues above climate change

3QF2. How concerned are you with...? % scoring 8-10  
Base: All in Oct '16 to Mar '17 research (500)



### Which is the 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> most important of the following issues?

(% saying most important)

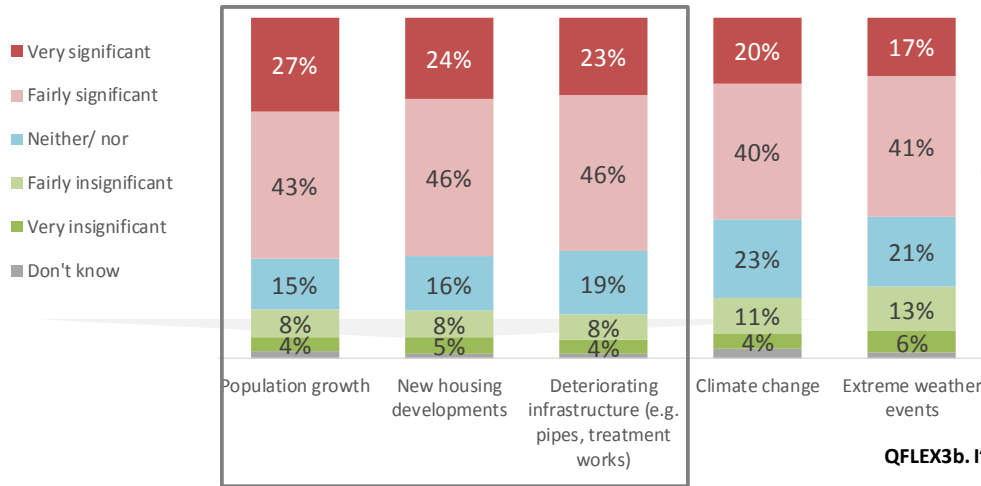


Base: all (578)

## 3

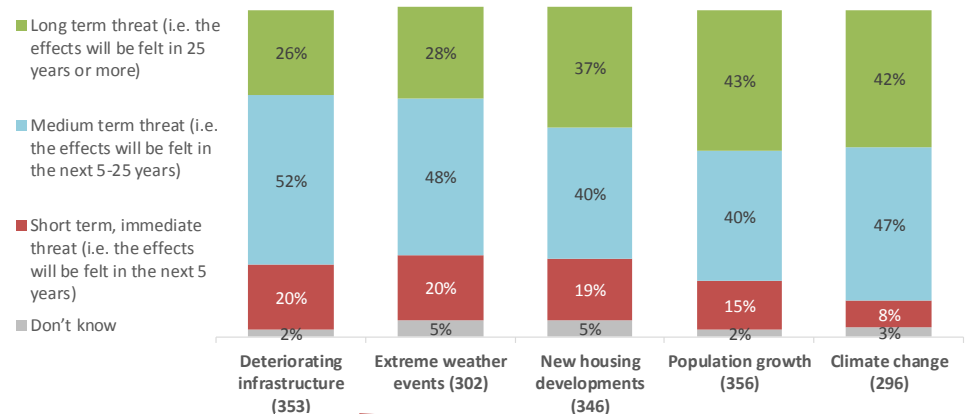
### Demographic changes linked to real, long term threat while customers less sure about significance of climate change

QFLEX3a. To what extent, if at all, do you consider the following issues to pose a threat to water/ sewerage supplies in the future? Base: All in Oct '16 to Mar '17 research (500)



- Main threats relate to common knowledge/personal experience: population, new housing & deteriorating infrastructure
- Climate change and extreme weather seen as less threatening (reflecting lower understanding of how these relate to water)

QFLEX3b. I'm going to read out the issues you selected as posing a threat to water/ sewerage supplies. Do you think [STATEMENT] poses a...? Base: All selecting each issue as a threat to water / sewerage supplies



Most immediate threat

- Deteriorating infrastructure, extreme weather and new housing developments are seen as the more immediate threats

## 4

### In principle, majority agree with paying more now to future-proof water

**QFLEX6a.** It is possible that future generations may have to pay more to replace a larger proportion of water and sewerage pipe work to keep services running reliably. Which of the following statements best represents your view? Base: All in Oct '16 to Mar '17 research (500)

I believe today's customers should pay a little more so that we can invest and be more certain that water services are reliable for future generations.

57%

I believe we should keep investment and bills to a minimum now, even if this means future generations might have to pay more to keep their services reliable.

24%

Neither/ Don't know

19%

- Older people, and those paying less for water at the moment, are more altruistic when it comes to paying more for future generations' water security
- Those who are currently happier with Wessex are also more amenable to this

**Unanimous agreement from YPP that it is fair for today's customers to pay more for future resilience**

- They expect to do the same themselves for the next generation

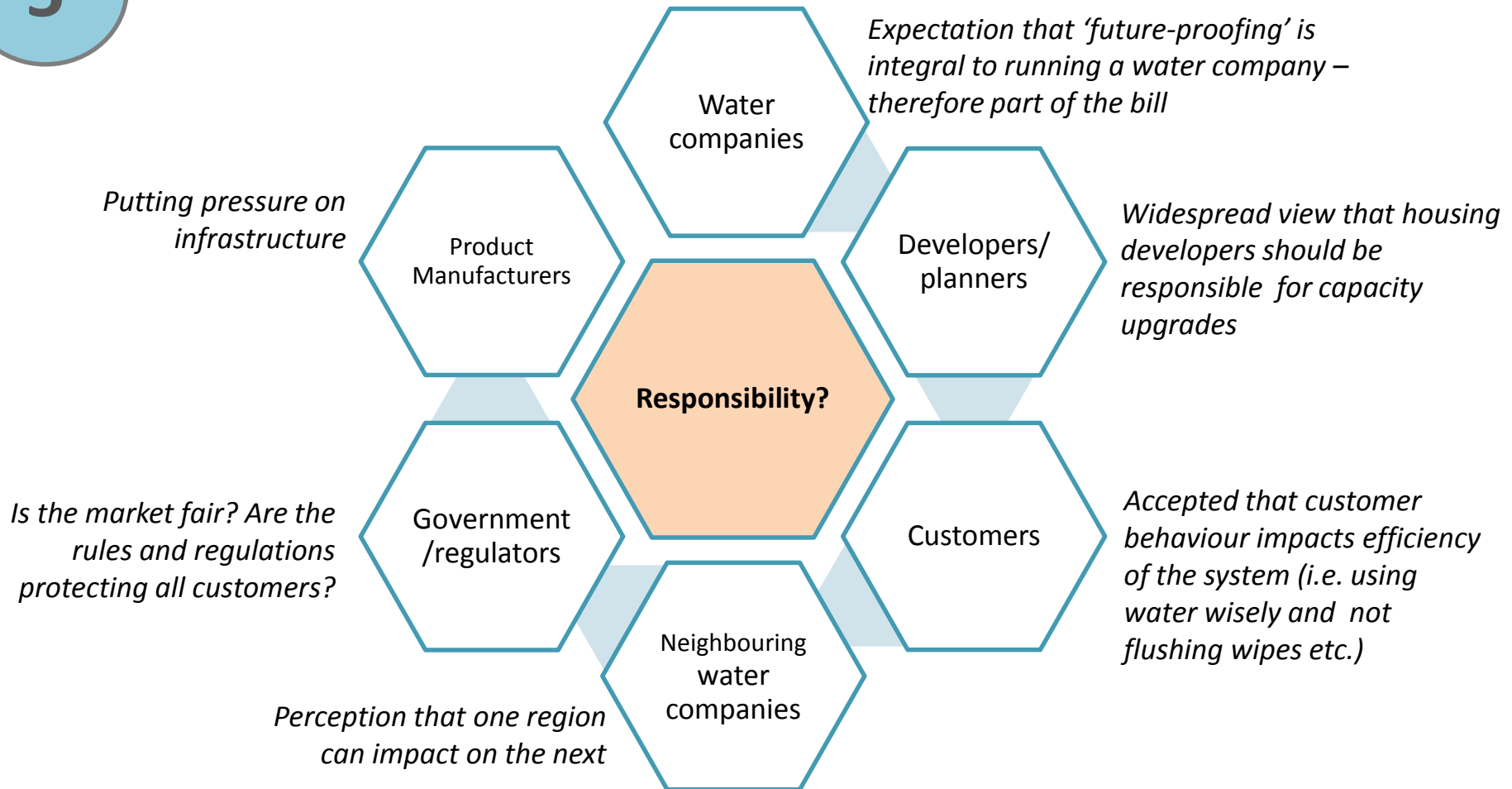
*You have to put selfishness aside. It's immoral for current payers not to [invest] as every year the harder and more expensive it will get.*

[YPP]



5

**Responsibility for future-proofing is complex: ‘responsibility chain’**



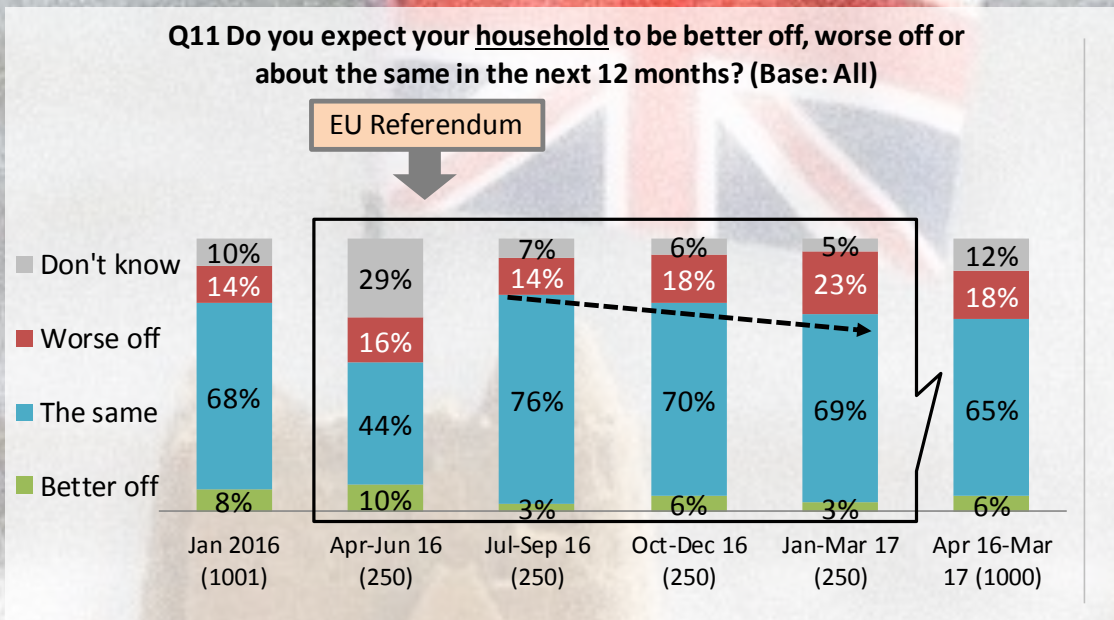
**Willingness to pay for future-proofing investments becomes contingent on many factors**

- Is the water company efficient: does it have customers’ interests to the fore?
- Is my bill fair: am I paying for others’ wastefulness or poor (sewer) behaviour?
- Are external factors properly managed/regulated: developments, neighbouring water co?



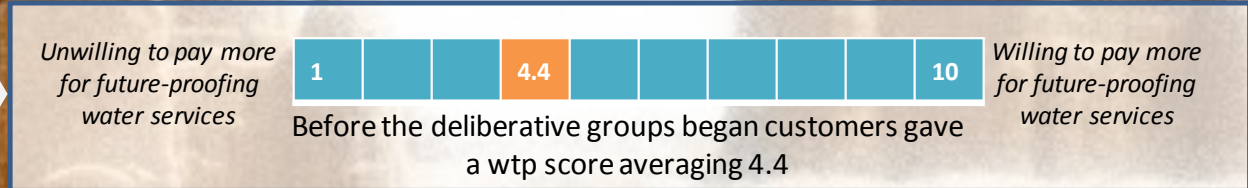
## 6

### Willingness to pay affected by economic confidence?



After clear pre-Brexit uncertainty, the economic outlook amongst households in the Wessex Water region is showing trend to anticipate being 'worse off' in 12 months' time

Financial caution from qualitative sample





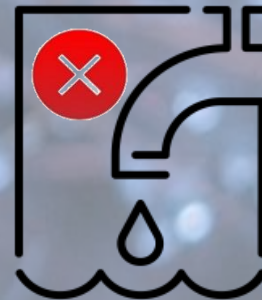
What is acceptable resilience planning across four scenarios?



*Water  
restrictions*



*Sewer  
flooding*



*Water  
stoppages*



*Environmental  
damage*

## QFLEX4a. If your water and sewerage supplies were threatened, how likely or unlikely do you expect the following impacts would be...?

Base: All in Oct '16 to Mar '17 research (500)

■ Very unlikely 
 ■ Fairly unlikely 
 ■ Neither likely nor unlikely 
 ■ Fairly likely 
 ■ Very likely 
 ■ Don't know



More unexpected supply interruptions



More planned supply interruptions



Increase in water bill



Deterioration of natural habitats



More pollution



More leaks



More restrictions on hosepipe/sprinkler/jetwash usage



Reduced pressure of water

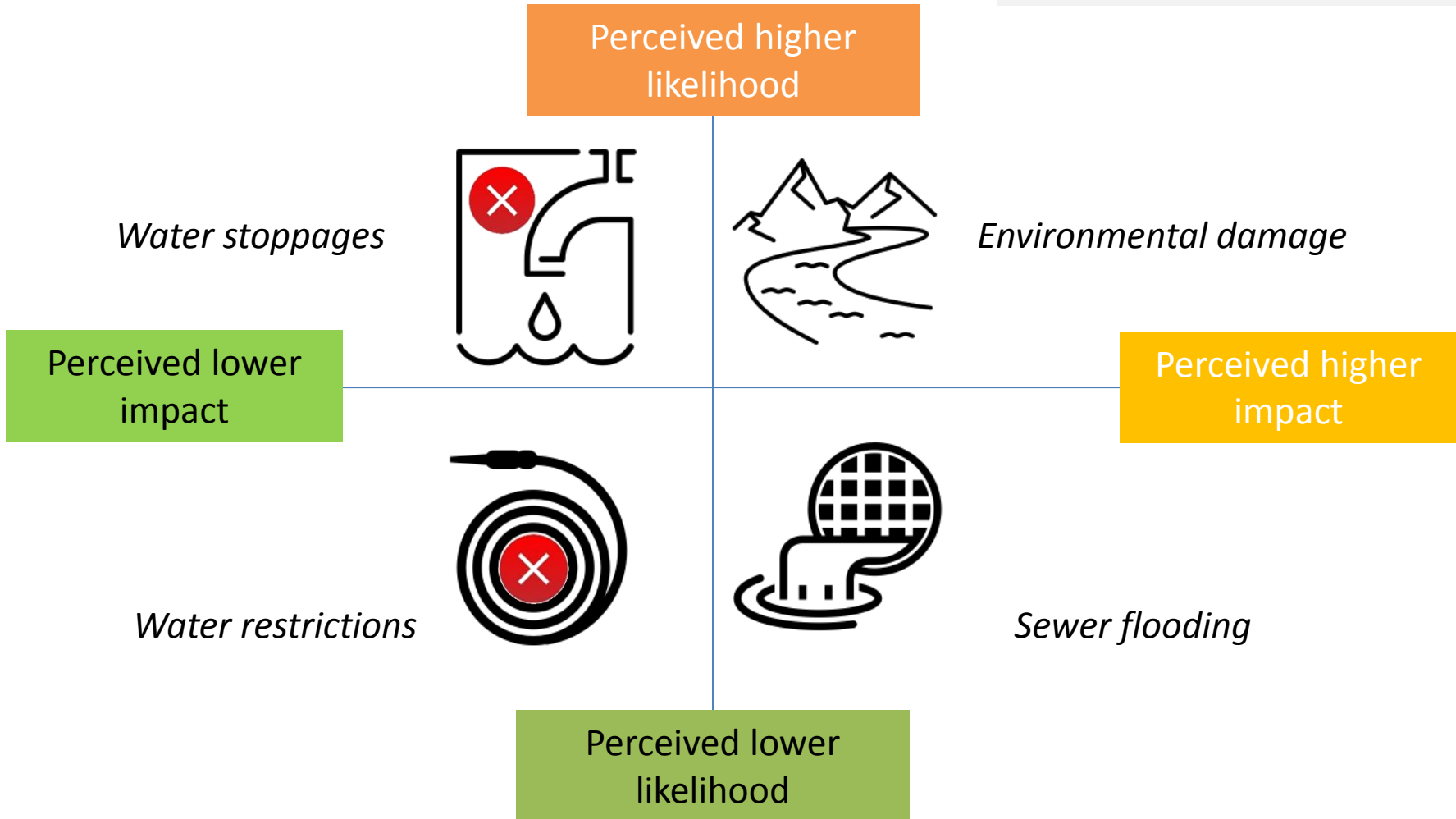


- Supply interruptions (both unexpected and planned) envisaged to be the first problems experienced if service is threatened
- There is little variation across most of the impacts (probably reflecting low consciousness of risks)
- NB sewer flooding scenario not asked in Tracking survey

# In qualitative deliberation, scenarios differ in terms of frequency 18

## And impact perceptions

*Qualitative analysis, supported by survey data where it exists.*





	HIGHER	LOWER
Likelihood		✓
Impact		✓

### Reinforces beliefs

- Wet region, high rainfall
- Droughts very infrequent

*I want an explanation of why they need to prepare for low rainfall...why would there be a water shortage – what causes it? I don't know why this could happen. [Paired depth]*

**Fact sheet: water use restrictions**

**1 WHAT YOU NEED TO KNOW**

When water is in short supply water companies can ban the use of hosepipes. In very extreme circumstances water companies can restrict the supply from the mains and provide drinking water in other ways. Despite some very dry summers, the last hosepipe ban Wessex Water imposed was over 40 years ago.

**2 WHAT MIGHT MAKE WATER USE RESTRICTIONS HAPPEN?**

- A long period of low rainfall, particularly in the winter months. Rainfall is needed to fill the reservoirs and underground water sources (aquifers).
- Many more people living in the region so the water supplies have to cater for more households
- More waste: people might be using more water than they need; pipes might be leaking more
- Changing climate patterns may affect our underground sources of water in unexpected ways

...but it never stops raining where I live!

It feels like that sometimes. But water supplies run low when we have dry winters

**3 INDUSTRY STATISTICS**

In the last 100 years there have been 3 critical years of low rainfall: 1921, 1936 and 1976

The Wessex area is not the wettest, but receives up to twice as much rainfall as the driest parts of the UK.

The Wessex Water region has a less than 1% chance of a hosepipe ban: that's lower than many other water company regions in England

**4 WHAT WESSEX WATER IS DOING NOW**

We have halved leakage (by 70 million litres per day) over the past 20 years at a cost of £250m

We offer meters and provide home efficiency checks to help reduce water use

We constructed new mains pipes to move water to where it is most needed at a cost of £220m

“Our job is to manage supplies so that everyone can use what they need – even in very dry periods like 1976. We also need to plan for a bigger population”

### Challenges beliefs

- Date of last hosepipe ban (more recent for Bristol Water)?
- Population growth projections: most accept but some think they are too high

### Context information raises other issues

- Need for comprehensive metering (for some), grey water/recycling innovation
- Need for more/better water storage
- Need to combat leakage before raising water efficiency with customers
- Has Wessex planned ahead?



## SCENARIOS: WATER USE RESTRICTIONS

Climate change may lead to increased incidences of dry weather. Along with population growth this may lead to an increased chance of water shortages during periods of low rainfall

**A**

Keep current levels of investment the same

**B**

Future proof by investment in water efficiency

**C**

Future proof by investment in assets

- In dry summers, customers encouraged to save water
- Water restrictions may occur: only once in a lifetime on average.
- Commercial water use will not be restricted

- Customers encouraged and assisted to use water wisely at all times.
- Greater certainty that water restrictions occur only once in a lifetime
- No restrictions on commercial use

- In very dry summers customers encouraged to save water.
- Restrictions imposed very rarely, once in two lifetimes on average.

*It makes you wonder why they don't invest in renewable water  
[Middle age group, W-S-M]*

Priority for investment?

HIGH

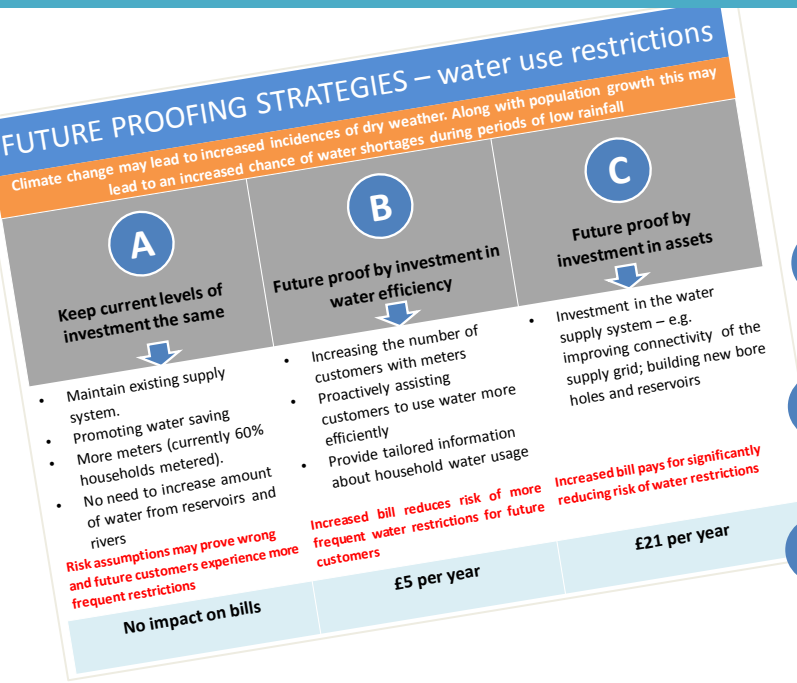
MID

LOW



**Majority would opt for B**

- While keeping current levels of investment is acceptable, customers prioritise encouraging efficient water use all the time
- Water restrictions hold little fear for customers: halving the risk to once in two lifetimes is not motivating
- Strategies as set out lack innovations expected by customers e.g. grey water use



Strategy and risk projection	Bill impact pa	81
<b>A</b> Keep current levels the same: but future customers may experience more frequent restrictions	£0	43
<b>B</b> Future proof by investment in efficiency: increased bill reduces risk of more frequent restrictions for future customers	£5	35
<b>C</b> Future proof by investment in assets: increased bill pays for significantly reducing risk of water restrictions	£21	2

**A** Majority opt for current investment levels:

- Reflects low risk/low impact perceptions
- Language uncertainties (e.g. 'may occur') reinforce difficulty to predict risk – decreasing appetite for investment

**B** Remainder opt for efficiency investment:

- Low cost option for long term benefits
- Choice driven by support for embedding water efficiency behaviours

**C** Little support for asset investment:

- Expectation that future-proofing supply system should be part of BAU
- High cost option to reduce low risk/low impact scenario = poor value for money



# Sewer flooding | response to context material

1

## WHAT YOU NEED TO KNOW

This year, 170 customers in the Wessex Water region experienced dirty sewer water coming into their homes. There are 1.2 million homes in the region.



'Superpond' scheme built in Weston-S-M

2

## WHAT MAKES SEWER FLOODING HAPPEN?

90% of sewer flooding incidents currently are due to blockages, and most of these are build ups of wet wipes or fats

Extreme rainfall can overwhelm the rivers and sewers, especially:

In areas of increased population - around new housing developments where the sewer capacity can't cope with both the heavy rain and the increased loos and bathrooms!

Where lots of front gardens are paved over so rainfall can't seep away into the earth

170 homes had sewer water inside their homes last year!! Yuck! That must be the worst thing that can go wrong for water customers...

## Fact sheet: Sewer flooding

"Right now, we're actually the best in the industry!"



Yes, but compared to the 90s, Wessex Water's customers are far less likely to experience this today...in fact 8 times less likely!

## INDUSTRY STATISTICS



3

4

## WHAT WESSEX WATER IS DOING NOW

£5 million is spent each year on cleaning sewer pipes, educating customers about wet wipes which block sewers, and cleaning up when blockages happen.

'Superpond' in Weston Super Mare is an example of Wessex Water working with The Environment Agency and North Somerset Council. A massive basin, it takes up to 4000m<sup>3</sup> of excess rainfall predicted to run off the roofs and roads from new housing developments - water that would potentially overwhelm the sewerage system during heavy rain storms.

£20 million per year is spent improving the size of the sewer pipes - and building additional pipework for new houses

HIGHER LOWER

Likelihood		✓
Impact	✓	

## Reinforces beliefs

- Sewer flooding seen as an unlikely risk...but with terrible consequences for those unlucky enough to experience it

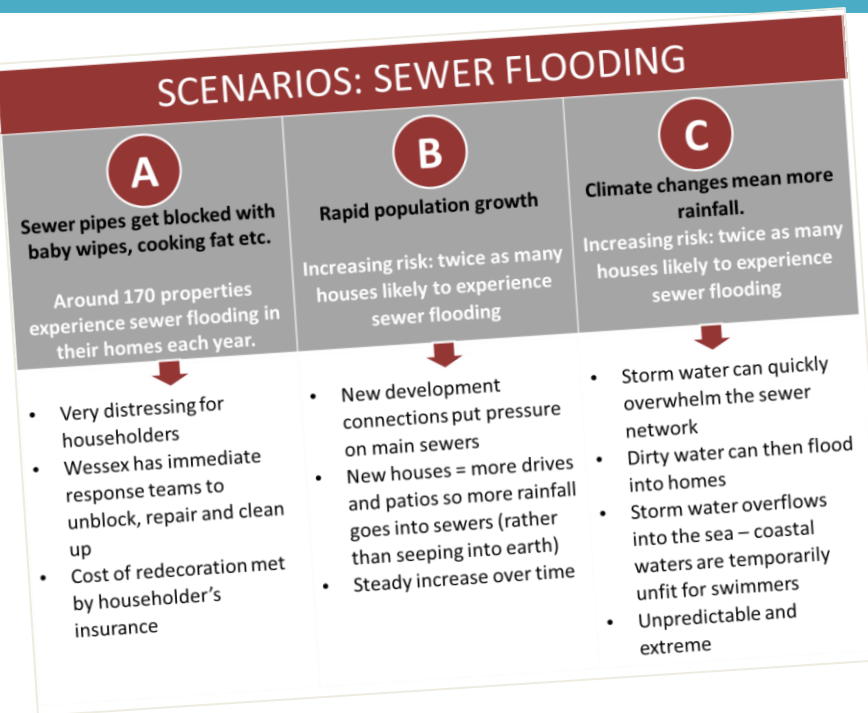
## Challenges beliefs

- Some believe that sewer flooding is more common than 170 households stated
- 90% from poor flushing behaviour is new news

## Context information raises other issues

- On the whole Wessex seen to be doing enough
- Sewer misuse should be tackled at national level - and tackled collaboratively
  - Planners, developers – ultimately government – responsible when new housing puts too much stress on the system
  - Wet wipes: manufacturers at fault if labelled 'flushable'





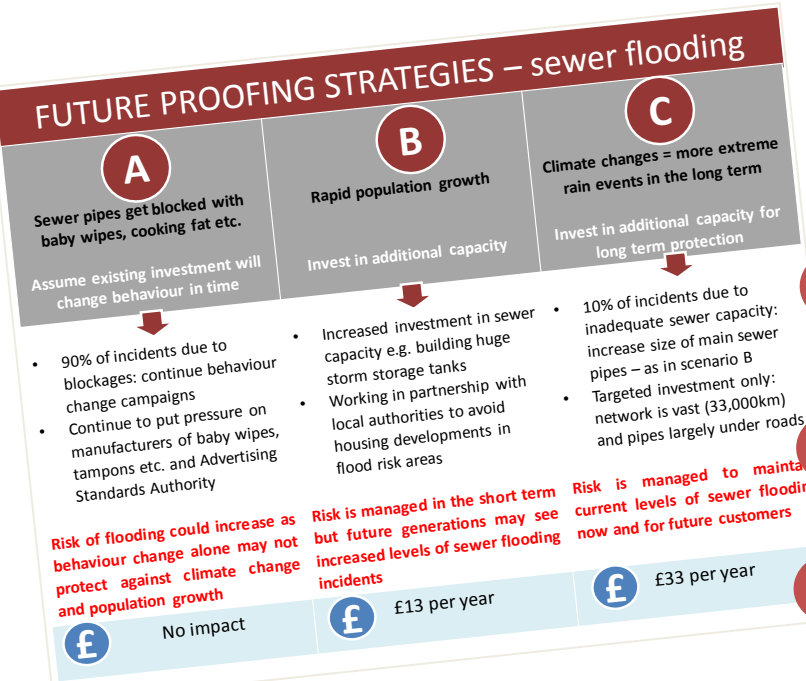
*The government need new housing and yet they are not bringing measures to protect the environment and protect against flooding  
[Middle age group, Bath]*

Priority for investment?	HIGH	MID	LOW
	✓		

### Deliberation focuses on all 3 scenarios which relate to different risks

- 'A' requires behaviour change – probably at a national level – and is supported, but Wessex Water's role questioned
- 'B' seen as more likely to be experienced (than C) and taps into widely held views about poor development decisions – again role of Wessex Water questioned
- 'C' prompts questions about climate predictions and is harder to evaluate (damage to marine life rather than inconvenience to swimmers is more relevant for some)

# Sewer flooding | response to investment choices



Strategy and risk projection	Bill impact pa	81
<b>A</b> Assume current investment will change behaviour: but incidents could increase as this doesn't protect against climate change and population increases	£0	30
<b>B</b> Invest in additional capacity to cope with higher population: short term risk reduced but future generations will see more sewer flooding	£13	42
<b>C</b> Invest in additional capacity to cope with climate change: long term risk reduced for future generations	£33	8

**Large minority opt for no change: **A****

- Strong support for behaviour change
- 'A' could potentially reduce bills if sewer misuse minimised
- But if not, might cost more in long term

**Majority opt for short term investment: **B****

- Investment responding to real problem of increasing population (and pressure of new developments)
- Involves partnership working


**Low support for reducing risk for future customers: **C****

- Important but cost prohibitive
- Unconvinced by value
- Imbalance for B & C when B accounts for 90% of problems (C=17 customers per year?!)


# Water supply stoppages | response to context material

**1 WHAT YOU NEED TO KNOW**

Last year, 9,000 Wessex Water customers had an unexpected supply stoppage. Most of these stoppages were of short duration, but a small number of households had no water for up to 12 hours.



Wessex replaces 50km of pipe every year




The Wessex supply pipe network is now more joined up. Water can even be transferred between water regions if needed

**2 WHY COULD WATER GO OFF UNEXPECTEDLY?**

- Because of a burst main or similar problem – wear and tear on the network. This is usually resolved in a short time.
- Longer interruptions could occur when only one supply pipe goes to your area and that pipe fails (so there's no way of diverting water from another main pipe)...
- ...or if part of the supply system is hit by a catastrophe e.g. a criminal attack, or if our IT systems were infiltrated, and there is no way of diverting water from another source

Things get back to normal after a few hours. But there have been cases in the past when the water supply is down for much longer...

**3 Wessex sits just below average in the industry**



Average number of minutes without water per household per year

**4 We prepare**

£220 million has been spent over the last decade on building a better supply pipe 'grid'

£12m per year is spent on continual improvement replacing the oldest areas of pipework

**Cyber Tsars:** specialist staff are employed to protect Wessex Water from cyber crime which could bring down a treatment works or any of our computer systems

**We respond**

In an emergency we are on the scene immediately and have enough bottled water to serve customers in the short term.

“There are over half a million households where we supply water. The vast majority have more than one water supply source serving them. The remaining 42,000 households are more at risk as they only have the one water supply source.”

It's mainly burst pipes that cause the water to go off. I've seen it happen in front of my very eyes!



	HIGHER	LOWER
Likelihood	✓	
Impact		✓

## Reinforces beliefs

- System wear & tear causes short-lived interruptions which most accept

## Challenges beliefs

- Most have never thought about cyber attacks – some think 'scaremongering' (NB fieldwork pre major 'Ransomware' attack May 2017)

## Context information raises other issues

- Network maintenance and security is a basic expectation
- 42k households with one source seen as a weakness in system – customers unaware of recent upgrade programme
- One source: not a known risk ('you'd never think to ask if buying a house')

## SCENARIOS: WATER SUPPLY STOPPAGES

<b>A</b> <b>Pipe network deteriorates at expected rate</b> Supply interruptions experienced by 9,000 households per year	<b>B</b> <b>Pipe network deteriorates faster than anticipated</b> Increasing risk: supply interruptions are more frequent (average doubles)	<b>C</b> <b>Large treatment works fails</b> The 42,000 homes who rely solely on this works lose water for 10 days
<ul style="list-style-type: none"> <li>Majority of households have two sources of supply so interruptions last no more than a few hours</li> <li>Wessex provides bottled water to households</li> <li>Vulnerable customers are given priority treatment (elderly, disabled etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Customers notice more leakage incidents where underground pipes have perished</li> <li>More time and money is spent fire-fighting an aging pipe network</li> </ul>	<ul style="list-style-type: none"> <li>Current risk actively monitored</li> <li>System failure is very unlikely but would require potentially lengthy repairs</li> <li>Residents and business have to rely on bottled water and bowsers</li> </ul>

*Ideally they should do C but assume that as haven't done it yet there might be a good reason [Older age group, Shaftesbury]*

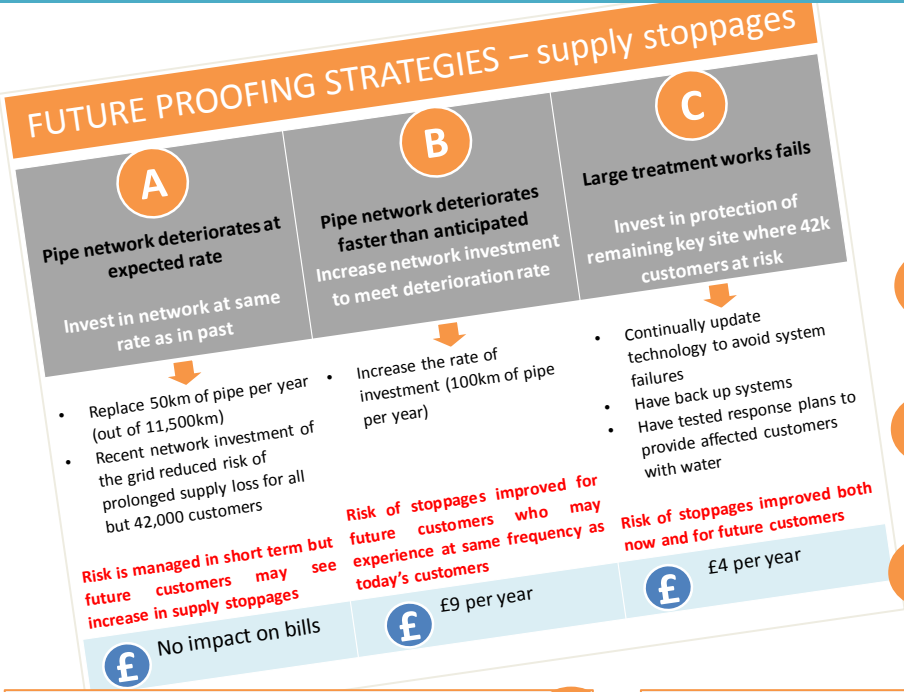
Priority for investment?	HIGH	MID	LOW
	✓		

### Deliberation across all scenarios:

- Many find it hard to understand that rate of pipe deterioration could be unpredictable
- But mention of leaks and 'fire-fighting' leads majority to think scenario B is where investment focus should be
- Many agree that 'C' presents intolerable scenario of 10 days without water (and some want more information to assess personal risk: *where is it?*)

*B is not based on any tangible evidence [Younger age group, Bath]*

*Unless there was an earthquake or something they should know the system by now and managing it – as in A [Middle age group, Bath]*



Strategy and risk projection	Bill impact pa	81
<b>A</b> Invest in network at same rate as past: short term risk managed but future customers see increased supply stoppages	£0	25
<b>B</b> Increase network investment to meet faster rate of deterioration: risk managed for future customers too	£9	39
<b>C</b> Invest in protection of remaining 42k customers with access to only one source of supply	£4	16

**Large minority opt for no change: **A****

- 50km is a small % of network to improve each year... firefighting at best
- But short term risk is managed at no additional cost

**Majority opt for short term investment: **B****

- A preventative strategy which improves risk for all
- But question rate of deterioration increasing: believe Wessex Water should know this

**Lower support for targeted risk reduction: **C****

- Low probability scenario affecting a few
- Minority support more protection for 42k
- Some question why no strategy to complete grid giving security to the 42k





**1 WHAT YOU NEED TO KNOW**

Water companies can be the cause of environmental problems which is why their protection of rivers, streams and coastal waters is very important

Rivers are nature's water pipework and storage system  
Malmesbury sewage treatment works  
Sewer overflow on beach prevents sewer flooding in the town

**2 WHAT DAMAGES THE ENVIRONMENT?**

Very high rainfall if sewers are overwhelmed with storm water and about to flood into houses, pipe outlets are opened – but it is possible for these to temporarily pollute the coastal waters

Sewage plant failure: e.g. if disinfecting machinery breaks down at a coastal treatment works, water at popular beaches nearby can become polluted

Taking water from rivers: river ecology can be harmed if too much water is removed

Pollutants and nitrates getting into the rivers and streams: animal manure and fertilizers wash into water courses and require a lot of cleaning at the treatment works

**3**

Environment Agency give star ratings to all water companies. Wessex gets 4/4

Region	2018
Anglian	★★★★
East of England	★★★★
Northumbria	★★★★
South East	★★★★
South West	★★★★
Thames	★★★★
Yorkshire	★★★★
Wessex	★★★★
Wales	★★★★
London	★★★★

Wessex Water named 2017 winner of Institute of Water's south west area innovation award for catchment management projects

Catchment management is a fancy term for working with nature to improve water quality. E.g. reed beds naturally clean water and winter cover crops reduce nitrate leaking.

Beaver dams could help prevent flooding!

All water companies comply with strict environmental laws. We are one of the industry's leading companies for complying with the laws

**4**

**WHAT WESSEX WATER IS DOING NOW**

- Over the past 10 years we have invested £180m in upgrading our sewage treatment works to improve river water quality
- We have also invested £80m to improve the quality of bathing waters around the coast

**Partnership Working is key!**

- For instance, we advise farmers on the optimum levels of fertilisers for their acreage. Farmers save money and we help reduce excess fertiliser getting into rivers and streams near farming land. A win win!

	HIGHER	LOWER
Likelihood	✓	
Impact	✓	

## Reinforces beliefs

- High engagement with environmental impact
- Consider risks at community level
- Idea of protecting for future generations has more weight
- Some awareness of reed beds, beaver dams: customers engage strongly with examples of catchment management

## Context information raises other issues

- Flooding is associated with poor housing planning – others need to take responsibility
- Should environmental protection be a nationwide issue?
- Shocked if WW doesn't have IT back up & response plans already

## Challenges beliefs

- Customers often unaware of how water co. activities impact environment
- Some shocked to discover sewer outflows onto beaches

## SCENARIOS: ENVIRONMENTAL IMPACTS

**A**

**Meeting current environmental standards as set in regulations**  
Currently compliant on all measures and have 4 star rating (highest possible)

- Previous decade has seen major investments to ensure Wessex meets water quality laws
- Improving partnerships with farmers reducing pollution in rivers
- New supply pipe grid means less water taken from rivers (so less stress on eco systems)

**B**

**Climate changes and extreme weather events increase**  
Increasing sewer discharges into the sea near public beaches & rivers

- Environment spoiled for beach and river users
- Spills into rivers, kills wildlife (fish) and damages eco-systems

**C**

**Shock event e.g. a disinfecting plant at coastal treatment works fails; or malicious attack**  
Popular beach is polluted

- Environment spoiled for local beach users
- Businesses relying on tourism see loss of revenues

*It's unfair if we should impact on the natural environment. If a lack of planning results in killing wildlife then that sucks.  
[Younger age group, Bridgwater]*

**Priority for investment?**

**HIGH**

**MID**

**LOW**

✓

### Deliberation across all scenarios:

- Most focus on scenario 'B' as area for future investment: customers linking climate change with damaging the natural environment – and want to prevent it
- Stronger altruistic instinct to protect environment for future generations: shared ownership and use (and unlike asset investments, benefactors are 'people like me' and not company shareholders)
- Meeting current standards ('A') is usually seen bare minimum
- 'C' perceived to be very unlikely – even implausible (no obvious rationale for attacking a coastal treatment works).



### FUTURE PROOFING STRATEGIES – environment

<b>A</b> Meeting current environmental standards as set in regulations Investment to meet new environmental laws ↓	<b>B</b> Climate changes and extreme weather events increase Investment to reduce number of sewer discharges into rivers and the sea ↓	<b>C</b> Disinfecting plant at coastal treatment works fails Invest to improve standards across our 47 coastal bathing waters ↓
<ul style="list-style-type: none"> <li>Further investment required to meet new legal requirements</li> <li>New requirements are phased over 10 years, but still require major investment in new treatment technology</li> </ul>	<ul style="list-style-type: none"> <li>Investment in the network where there are vulnerable areas</li> <li>Investment will achieving higher environmental benefits quicker</li> <li>Future generations will benefit from longer term</li> </ul>	<ul style="list-style-type: none"> <li>All 47 works meet government standards but shock events can occur</li> <li>Hence continual updating of technology to avoid failures and malicious attacks</li> <li>Back up systems and stand-by generators in case of failures</li> </ul>
Environmental risks of sewage treatment works polluting rivers and seas are reduced <b>£</b> £15 per year bill increase	Risk of environmental damage caused by gradual climate changes is reduces <b>£</b> £5 per year	Environmental risk of a shock event reduced & response preparation improves <b>£</b> £20 per year

Strategy and risk projection	Bill impact	81
<b>A</b> Mandatory investment to meet new environmental laws	£15	81
<b>B</b> Invest to reduce number of sewer discharges into the sea thereby lessening environmental risks	£5	25
<b>C</b> Invest to improve standards at 47 coastal works reducing risk of shock event and improving response should it happen	£20	6

### Mandatory investment **A**

- Mostly accepting of £15 mandatory bill
  - Just the law...no choice
  - Seen as doing the minimum (may not be comprehensive)
  - Environment matters
- Prevention is key rather than having to reverse damage

### Many want WW to go beyond the minimum: **B**

- Struggle to assess value of £5
- However support protection of environment for future generations

### Low support for shock event scenario: **C**

- Low probability scenario: *malicious attack* seems extreme
- Expensive for 'one-off'
- Expectation that Wessex Water has back up systems already

*High engagement: environmental impacts relate to human health and wildlife; generally seen as important investment*

*It's important we protect the environment for our grandchildren.  
[Older age group, Bath]*

*It's important to invest in the planet and the future of all generations  
[Young People's Panellist]*



*Global warming is a known...£33 is just the beginning.  
[Younger age group, W-S-M]*

*It's not our planet, we have to give it back to our grandchildren.  
[Vulnerable, Yeovil]*

Losses loom larger than gains (loss aversion)

## Evaluating scenarios only (i.e. no bill impacts)

- Many want all scenarios mitigated; and the common view is that it is better to do the job properly than a temporary or partial fix
- Majority of respondents say they are prepared to take actions (such as going on a meter, never flushing wipes or installing a water butt) to help minimise risks

## Evaluating costed strategies

- 'Loss' however is encapsulated in increased bills: customers re-valuate and tend to down-weight level of investment when it falls to their bills - prioritising the need to minimise personal financial loss instead

## Evaluating scenarios only (i.e. no bill impacts)

- Initial deliberations often favour investing to protect all customers (such as the 42k homes at greater risk); and very unlikely risks (malicious attacks)
- Survey data shows the majority agree with the principle that it is right to pay more now to make services more reliable for future customers

## Evaluating costed strategies

- Altruism is tempered when costs are revealed: fewer opt to protect the 42k
- The ideal of protecting future generations is often put back in Wessex Water's court (e.g. it is the company's responsibility to plug this weakness in the grid)

We act in ways that make us feel better about ourselves (altruism)

Emotional  
associations  
shape our  
actions  
(salience)

## Evaluating scenarios only (i.e. no bill impacts)

- The response to e.g. sewage spills and dead fish in polluted water is highly emotive: customers want to eliminate this risk almost irrespective of its likelihood

## Evaluating costed strategies

- This emotional engagement is borne out when evaluating strategies: customers are more likely to choose more costly investments

We live for  
today at the  
expense of  
tomorrow

## Evaluating scenarios only (i.e. no bill impacts)

- Customers see population growth, weather events and infrastructure as more real risks because they perceive that these will, or have the potential to, affect our lives imminently
- They place greater priority on mitigating these risks (e.g. via pipe replacement and putting pressure on developers) than longer term risks

## Evaluating costed strategies

- E.g. the shorter term sewer flooding strategy (related to population risks) is seen as a better investment than the longer term strategy (relating to climate change) even though the latter represents 'the proper job' and protects future generations

When we lack knowledge we look for anchors (confirmation bias)

## Evaluating scenarios only (i.e. no bill impacts)

- Respondents focus on commonly held views about building on flood plains, leaky pipes and wasteful/irresponsible water use: these 'anchors' are front of mind in decision making

## Evaluating costed strategies

- Bill rises are questioned: the 'anchors' create reticence in customers' minds about the fairness of the investment strategies

Framing affects responses in subliminal ways

## Evaluating scenarios only (i.e. no bill impacts)

- Respondents were shown a presentation and a video which covered many topics – designed to help inform the deliberations
- Specifically, customers saw Wessex Water staff, independent academics and other customers discussing aspects of resilience
- We observed that the environmental damage theme resonated very strongly in this research. This theme was given no more air time than other themes and yet the information was often new and relevant to people. This stimulus, in explaining environmental risks, may have framed thinking in ways we can't fully interpret.

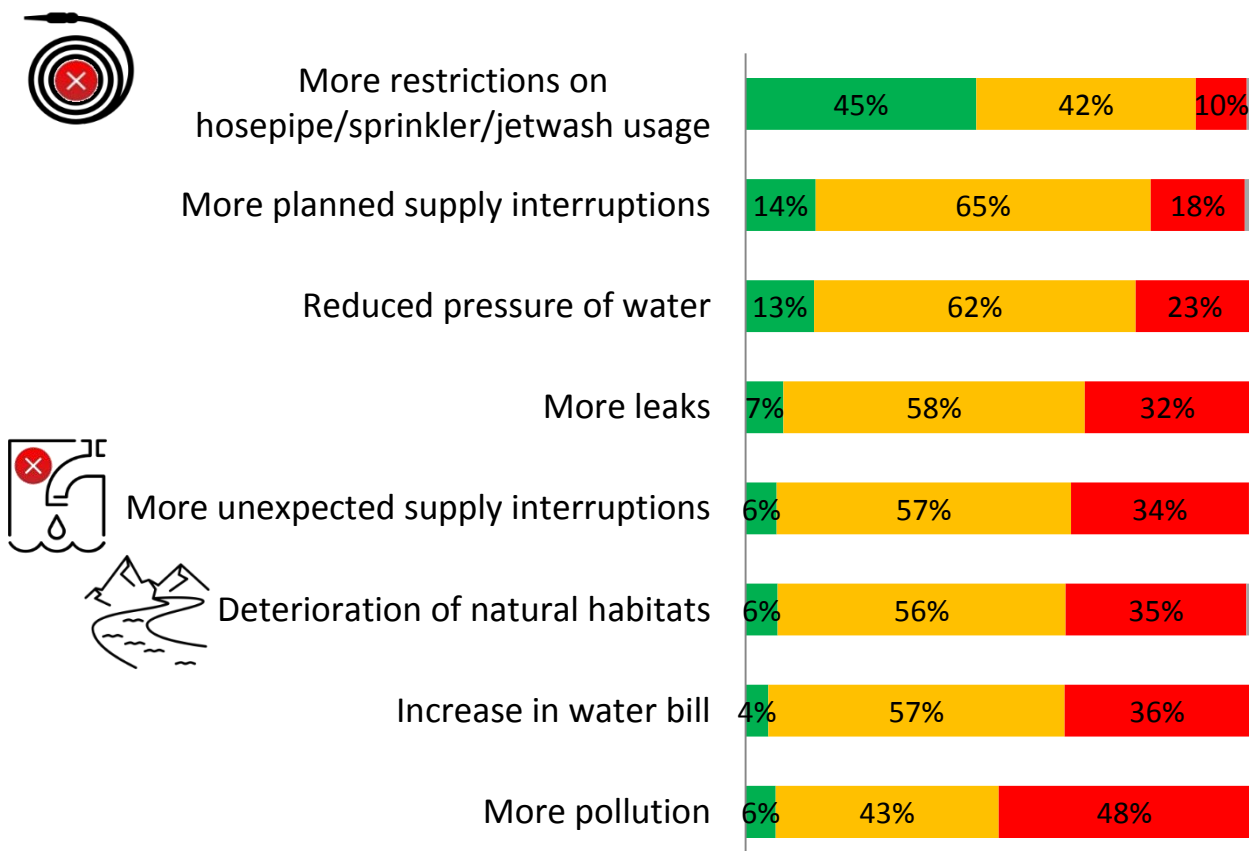
**What is driving willingness to pay for specific resilience strategies?**



## Customers can tolerate expected/managed impacts more easily than unexpected/unintended impacts

**QFLEX4b. And if any of these things were to impact you personally, how easy or difficult would you find it to tolerate? Base: All in Oct '16 to Mar '17 research (500)**

■ I could tolerate this easily ■ I'd tolerate it, but it wouldn't be easy ■ I couldn't tolerate this at all ■ Don't know



- Most easily tolerated would be hosepipe restrictions
- The hardest side-effect to handle would be more pollution
- Over a third say they couldn't tolerate bill increases

Principle of paying more now to future-proof is subject to a reality-check once bill impacts known

## WATER RESTRICTIONS



	@	(81)
Today's risks managed	£0	43
Future risks managed (education)	£5	35
Future risks managed (assets)	£21	2

Many WTP a little more for low impact scenario via education (prevention)

## WATER STOPPAGES



Today's risks managed	£0	25
Future risks managed (assets)	£9	39
Unpredictable event (minority at risk)	£4	16

Many WTP more for anticipated events: 2x pipe replacement tangible (preventative)

## SEWER FLOODING



Today's risks increase	£0	30
Today's risks managed	£13	42
Long term risks managed (assets)	£33	8

Many WTP to manage risk now but not for future generations where price prohibitive

## ENVIRONMENTAL DAMAGE



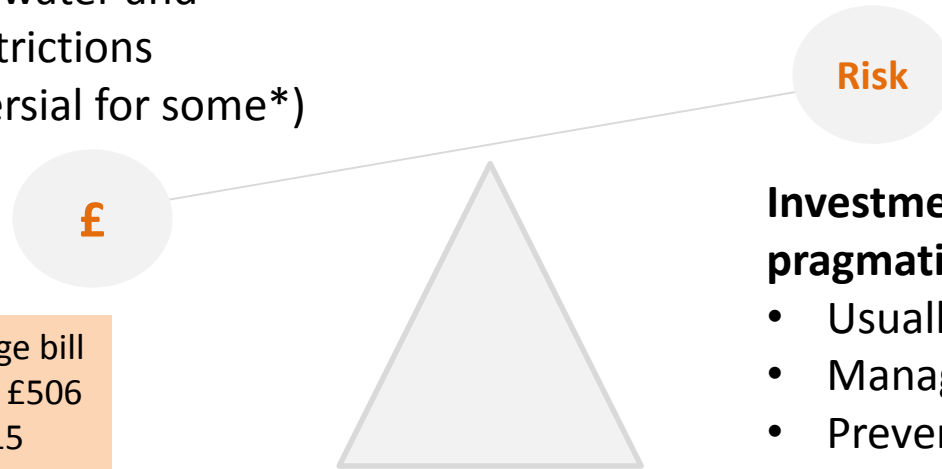
Today's risks (mandatory)	£15	81
Future risks managed	£5	25
Unpredictable event managed	£20	6

WTP mandatory bill rise and more for some: impact affects all

## Pattern is for customers to trade down investment/increase risk once bill impact known

- Majority would accept a £10 reduction to share water and increase risk of restrictions (although controversial for some\*)

*\*Water trading controversial when customers anticipate trading will happen when other regions are very water stressed. They are troubled by the ethics of selling a natural resource to people perceived to be in dire need. Implications for communication of water trading.*



Game exercise shows average bill price increase from £470 to £506 (+£36 which includes £15 mandatory bill rise for environmental investment)

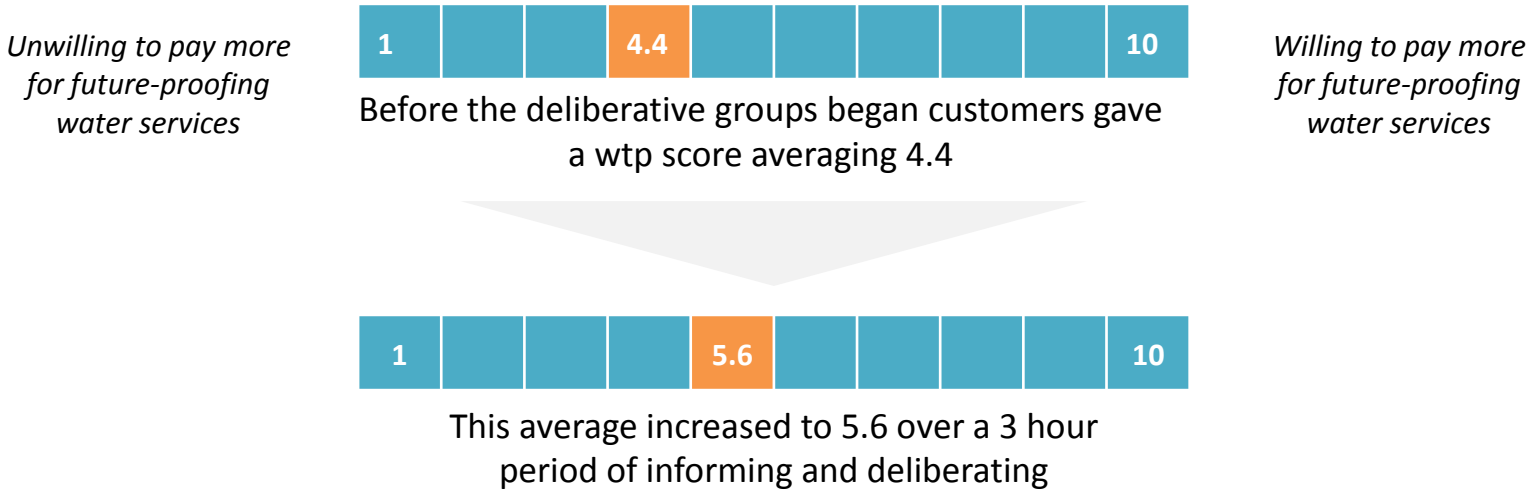
## Investment choices based on pragmatism:

- Usually the lower cost option
- Manage shorter term risks first
- Preventative strategies

*NB: very low probability/high impact risks that customers had never encountered (cyber crime, terrorist attack) very hard for customers to comprehend – and most choose not to insure against these through bill increases. However, there is an assumption that Wessex Water would protect its assets against these risks.*

# How does acceptability of paying for investment change post deliberation?

Customers are circumspect: on average, acceptability of paying more for future-proofing investments increases slightly from a low starting point.

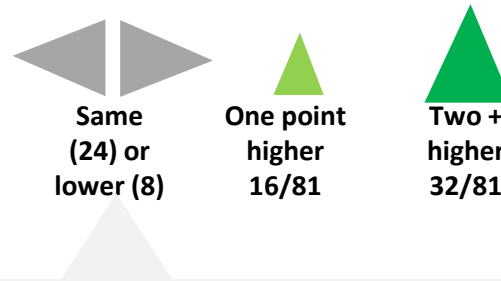
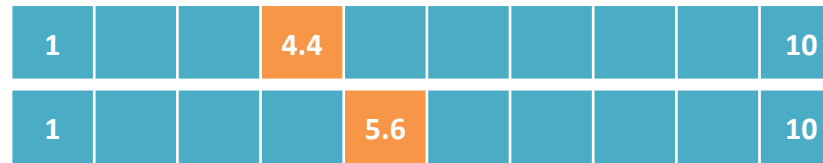


- 1 Customers are not consciously considering future risks to their water supply
- 2 Concerns relate to commonly held knowledge & personal experience
- 3 Some risks to water are more real / immediate than others
- 4 In principle, pay more now to future-proof
- 5 Responsibility for future-proofing?
- 6 Economic confidence dip

### Customer context helps to explain constrained motivation to pay:

- ✓ Perceptions of current risk – and Wessex Water performance – is acceptable ①
- ? Question whether fair to ask customers for extra investment ⑤
- ✗ Bill impacts look high ⑥

# Some customers are no more or even less willing to pay more for future-proofing after deliberation 40



## Reason why customers scored the same (24) or lower (8) ◀▶

### Affordable?

- Financially stretched –
- Simply don't want to pay more

### Sensible/logical?

- Believe companies should address future risks as a matter of course
- Seen as an extra/response to poor previous future planning
- Bill increases paying for problems beyond Wessex Water's control (e.g. poorly located new housing)

### Necessary?

- No: happy with what Wessex Water is doing now
- Believe Wessex Water too quick to increase bills
- Need to prioritise other issues first: operational efficiencies; leaks; customer education; universal metering

### Responsibility?

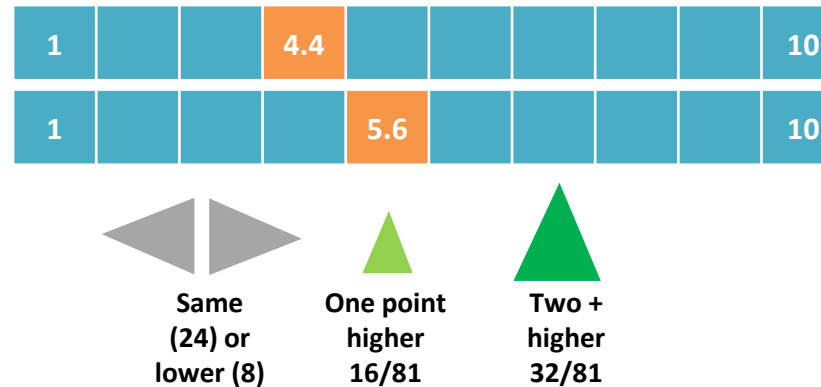
- Believe Wessex Water should invest in its own infrastructure (not rely on customers to pay for new assets)

### Caveats

- Want to see level of profits first/more transparency
- Require more info to make a decision



# Some customers are willing to pay slightly more for future-proofing after deliberation



## Reasons why customers scored one point higher (16/81)

### Affordable?

- No mentions

### Sensible/logical?

- Lots to consider/more than realised
- Have taken water services for granted

### Necessary?

- Essential investment

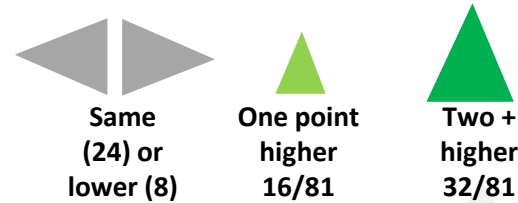
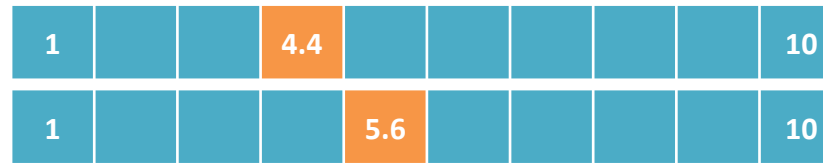
### Responsibility?

- Willing to pay slightly more for future generation

### Caveats

- Should be at the expense of profit not bills
- Want to see others brought to task e.g. developers, sewer misusers
- Want to see more customer education first

# Some customers are equally willing to pay more for future-proofing after deliberation



## Reasons why customers scored two or more points higher (32/81)



### Affordable?

- Proposed bill increases look manageable when spread over a year

### Sensible/logical?

- Costs look realistic
- Believe reflect what it will take
- Want to see 'proper' improvements and not just fire-fighting

### Necessary?

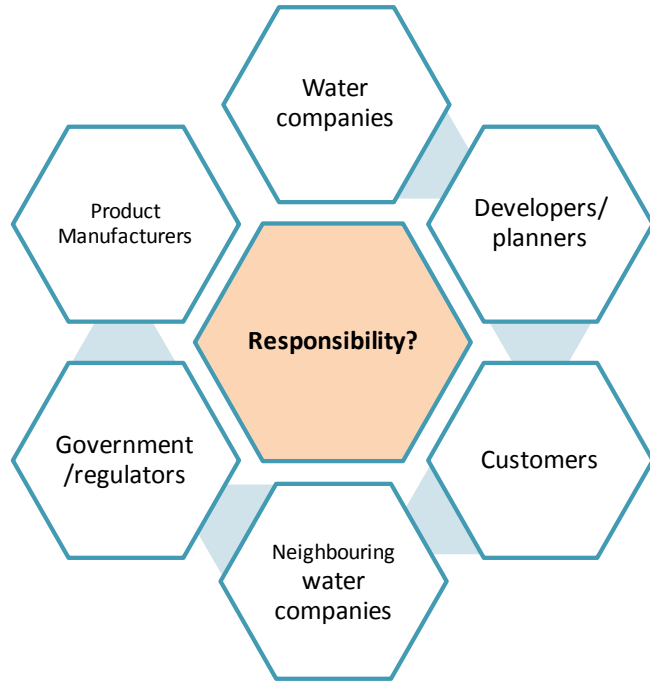
- Didn't realise so many threats
- Big task (esp. keeping up with population)

### Responsibility?

- See environmental protection in context of 'everybody's' responsibility
- Willing to pay to benefit region
- Willing to pay for future generation, children & grandchildren

### Caveats

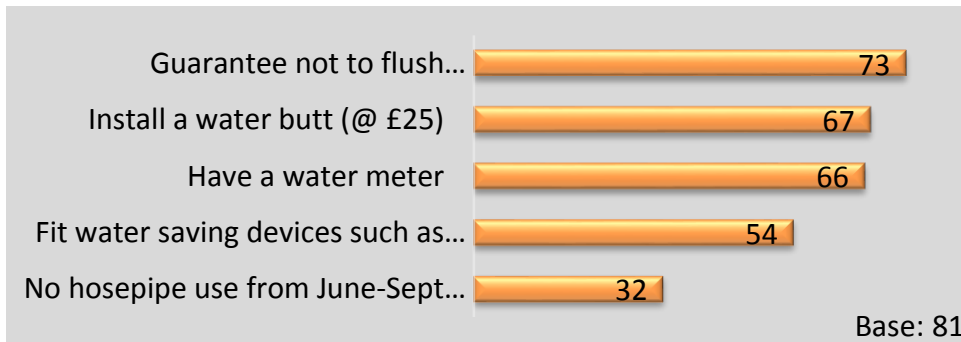
- Wessex Water needs to explain why costs going up – and that it is fair
- Investments also paid for from own efficiencies and not to protect profits
- Investment should be matched by Wessex Water



**Customers see themselves as one part of the responsibility chain – and are less willing to pay if:**

- They question water company governance – and specifically excess profits
- They question role of customers (not shareholders) in future-proofing assets
- They see room for low/no cost preventative strategies via customer education
- They perceive government or regulators allowing developers, farmers, product manufacturers or other polluters to increase risk to the water system
- They perceive strategies are based on little evidence/too much uncertainty

**High proportion of customers are willing to do their bit to minimise risk/cost**



*The government need new housing and yet they are not bringing in measures to protect the environment and protect against flooding. It's the whole planning regime. It seems it matters less and less to the government and they need to think about it more so there is sufficient capacity.*  
[Middle age group, Bath]

*I don't disagree with the concept of new assets but they [Wessex Water] should invest with their own profits as part of running a sustainable business*  
[Middle age group, W-S-M]

*Will it be down to the developers or the water board? Surely down to both. They should work together for the planning.*  
[Paired depth]

*I didn't realise how bad it was to pave driveways...but isn't this the developers responsibility?.*  
[Younger age group, W-S-M]

*Wessex should continue putting pressure on wet wipe manufacturers because it doesn't seem to be working at the moment: more needs to be done.*  
[Younger age group, Shaftesbury]

# Summary | customer priorities

**Lowest  
Priority**

Risk relates more to  
water company's  
competence

**Moderate  
Priority**

Much more likely to tolerate hosepipe ban than bill rise  
Investment strategy: better capture; leak reduction; water efficiency and education

Expectation (and high tolerance) of water stoppages.  
Investment strategy: primarily preventative (faster pipe upgrading, improved technology)



Impacts individuals

Impacts society



Key issue: 9/10 incidents relate to flushing  
Investment strategy: education, infrastructure 'modifications' not major renovation

Lowest tolerance for pollution and environmental damage  
Importance of all strategies offered - technology, education, partnership, catchment management

**Low  
Priority**

Risk relates more to  
external factors  
(weather, behaviour)

**Highest  
Priority**



**Lowest  
Priority**



Specific issue of 42,000 customers on weaker part of grid: despite low investment of £4, responsibility perceived to lie with company, not customers

Risk relates more to water company's competence

**Moderate  
Priority**

Impacts individuals

Impacts society

**Low  
Priority**

Risk relates more to external factors (weather, behaviour)

**Highest  
Priority**

*I'd go for the option which helps the majority, not the minority.*

*[Younger age group, Shaftesbury]*

*The investments made now should be for the good of all society and the country.*

*[Middle age group, Bridgewater]*

*The 42,000 [with one water source] should pay for it themselves.*

*[Older age group, Bath]*

*Even if I lived there [within at risk area], I'd still go for A*

*[Younger age group, Bath]*

*You have to look after all of your customers.*

*[Older age group, Shaftesbury]*

*I'd pay for the 42,000 [with one water source] because me or my family could move into that area in the future.*

*[Older age group, Bath]*

### Vulnerable sample respond largely in-line with main domestic sample.

Accepting of bill increases to future-proof service

Important to invest for future generations

Protecting environment important

Education key to resilience, esp. to children

Profits and shareholders raises concerns

Others responsible, not just the customer

### Some difference in emphasis:

- Cost-sensitivity kicks in much earlier for economically vulnerable
- Feeling of impotence and cynicism about corporate behaviours sometimes more prevalent (or voiced more urgently)
  - One-off example of physically disabled respondent left without water (and no special assistance) can undermine Wessex Water's credibility
- Balance risk and bill impact as the rest of the sample but some breakdown costs to per day/per week which makes it more manageable
- Where water bill automatically deducted from benefits, or when capped via tariff, willingness to pay exercise is more removed

*I would pay a little bit more  
[Vulnerable, Yeovil]*

*If it's only 10p a day that's quite a bit extra from everyone. 10p is good.  
[Vulnerable, Trowbridge]*

*Lots of the profit goes to shareholders. It's wrong.  
[Vulnerable, Yeovil]*

**Profits and shareholders raises concerns**

*To get a better service, you pay a little more don't you?!.  
[Vulnerable, Trowbridge]*

**Accepting of bill increases to future-proof service**

*It makes me think they are trying to put everything on us. It's their [Wessex Water] job to this stuff, why should we pay for something we've got no control over.  
[Vulnerable, Trowbridge]*

*They [Wessex Water] need to be doing their bit as well. I'm sorry, it's their job.  
[Vulnerable, Trowbridge]*


*The government should be paying for it, not us.  
[Vulnerable, Yeovil]*

*£33 is a little bit too much, especially when you add the others to it.  
[Vulnerable, Trowbridge]*

**Others responsible, not just the customer**

*They are a big company, they've got a lot of money...it should be on them too...not solely us..  
[Vulnerable, Trowbridge]*

**Cost-sensitivity kicks in earlier for economically vulnerable:**



**Communications: principles for using language and describing resilience measures**



## 'Resilience' is not a consumer term

- Not used at all in the preliminary depth interviews (which were designed to allow natural language to emerge)
- As a term, customers liked and understood *'future-proofing'*
- Future-proofing then adopted as the overarching term in the deliberative events (with no comprehension issues)

*Yes I like future proofing, it's managing risk, also planning ahead for new technology [Paired depth]*

## Key words

- Investing
- Planning
- Preparing
- FUTURE-PROOFING

## Language also explored with YPP:

Despite the context of the group discussions (i.e. in a water company) spontaneous associations of the word 'resilience' do not naturally relate to water or future-proofing

**'Extreme weather'** more immediate/meaningful than **'climate change'**





## Communication is always about appealing to hearts and minds



What is the message?

- We are not resilient enough
- We all face new risks
- We are responsible for safeguarding water environment...and we need your help
- Bills are rising to pay for future security
- We need you to change

Who is the messenger?

- Wessex Water
- Water industry voice
- Media
- Government/regulator
- Other influencers/ other sectors with similar messages

What is the purpose?

Business plan

Wider 'brand' communications

Behaviour change campaigns



**What risks resonate most...?**

- Environmental damage and pollution: emotional response to environment as living organism, irreplaceable, belonging to all
- Risks that relate to society as a whole rather than (albeit unfortunate) individuals
- Imminent/short-term risks to children/grandchildren (rather than far-off future generations)

- Population growth: credible and evidenced by significant housebuilding, pressure on services
- NOT infrastructure deterioration: assets seen to belong to and be managed by company – and are replaceable

**What strategies resonate most...?**

- Linking safeguarding the environment with future generations
- Catchment management examples (in tune with nature)

- Preventative: often lower cost, often relating to education and behaviour change
- Tangibly reduce risk e.g. doubling rate of pipe replacement

**What builds trust...?**

- Brand communications: efficient, modern, future-thinking, customer-first
- Convey Wessex Water in command of future risks (reassurance)
- Collaborations demonstrate shared responsibilities

- Future-proofing is part of BAU
- Clear (and credible) expression of future risk
- R & D: innovation and technological solutions

**What undermines trust...?**

- Low familiarity, low understanding
- Beliefs about self-serving corporate behaviours
- When the ‘messenger’ potentially stands to gain

- Existing beliefs about Wessex Water governance, leakage levels, inefficiencies

## Target audience: industry

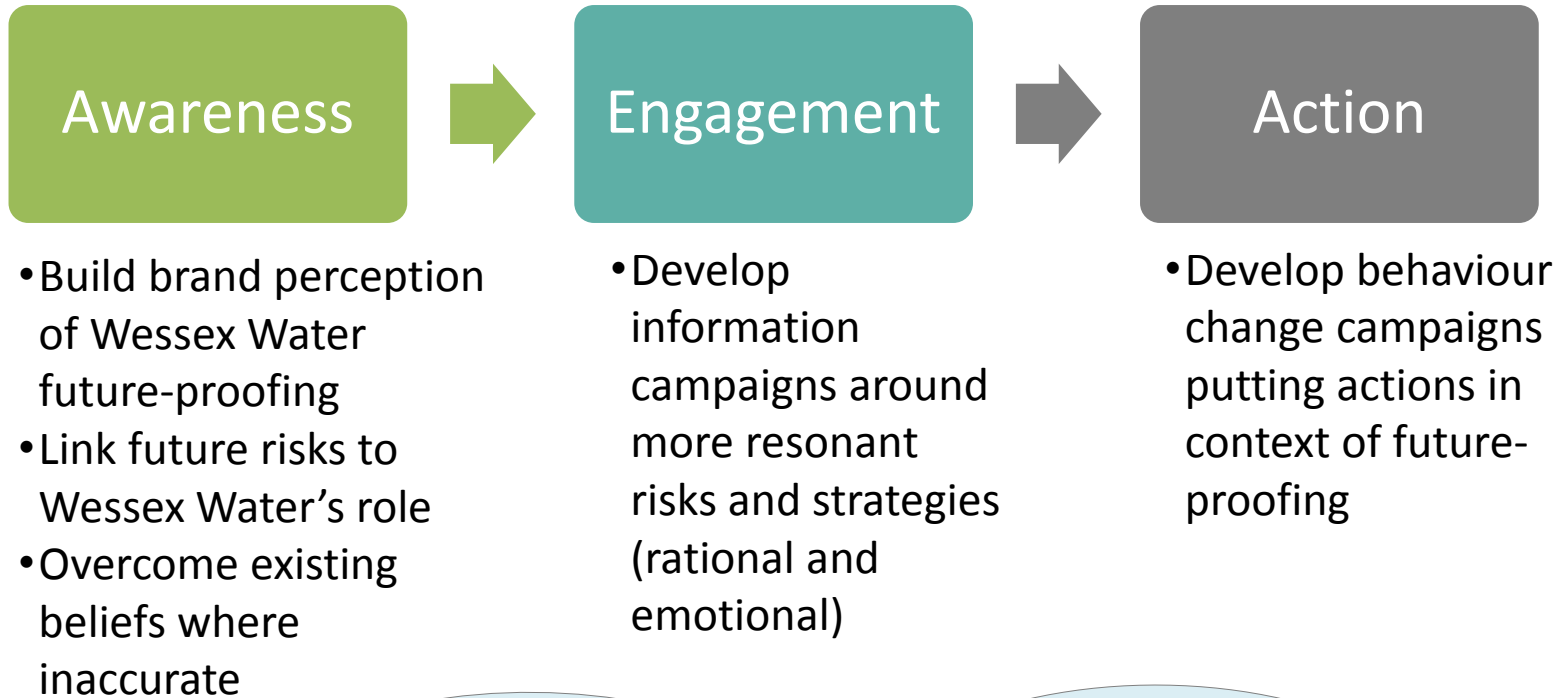
- Plan should distinguish between ‘business as usual’ future-proofing strategies and strategies that need to be implemented to mitigate new risks
- Plan should highlight behaviour and cultural shifts to meet new resilience challenges: customers are only willing to pay more once they are sure that both customer and company behaviours – as well as external forces such as developers – are sound
- Strategies should be described (and implemented) as packages of activities that acknowledge the responsibility chain
- Plan should link new investments that relate to the infrastructure with reinvesting profits (rather than increasing bills)
- Customers’ altruistic instincts to pay more now for future generations are tempered: altruistic acts usually have an element of reciprocation (feel good; future returns etc.). How will Wessex Water reciprocate customers for their altruism?
  - Bill increases are more palatable if linked to the areas that resonate more with customers’ sense of responsibility: i.e. resilience strategies that relate to environmental and societal themes
  - Enabling customers to link their water bills with their local environment will be an important strategy for communications

## Target audience: customers

- Build awareness of Wessex Water's wider environmental safe guarding role: this is a missing link for many customers and has many reputational benefits
- Customers need more help to visualise longer term risks (e.g. climate change): frame communications with clear expressions of the nature of the risk i.e. probability and potential impacts
- Develop a reputation for innovation, R&D and future-thinking and link to future-proofing strategies
- Link behaviour change campaigns more overtly to future-proofing water services
- Encourage participation as part of behaviour change campaigns where customer actions relate to environmental and societal resilience
- Communicate bill rises in the context of future-proofing that goes beyond 'business as usual' future planning (i.e. focussing on the areas that are higher priority for customers)



## Any behaviour change campaigns will need to start by building awareness



*I am generally accepting of price increases if there is an explanation  
[Paired depth]*



*Rivers are for beauty, walking along, hiring a boat to go along on days out and enjoying it and being at one with nature  
[Paired depth]*





## Conclusions

## Customer context

1. Customers, in general, have a low appreciation for future risks and the need to build resilience into the water infrastructure
2. This is in large part because they receive a trouble-free service from Wessex Water
3. Customers find it easier to engage with the impact of population increase as a potential threat to water services, than the less well understood impact of climate change
4. While asset deterioration is understood as a future risk, customers question their role in future-proofing infrastructure that is owned by the water company

## There are several factors that constrain willingness to pay for future-proofing strategies:

5. Customers do not see themselves (or their bills) as the primary means to future-proof water: the responsibility chain includes developers, planners, regulators, the government, other customers, other water companies, product manufacturers – as well as the water company
6. Willingness to pay is therefore not only a value judgement between the cost and customers' personal beliefs about the risk, but also relates to their beliefs about whether others in the responsibility chain have acted responsibly

7. While in principle customers believe today's customers should pay more to future-proof services for future generations, this is on the proviso that customers are not paying for the poor practices of others in the responsibility chain
8. There are also trend indications that customers are feeling more pessimistic financially which may also be constraining willingness to pay

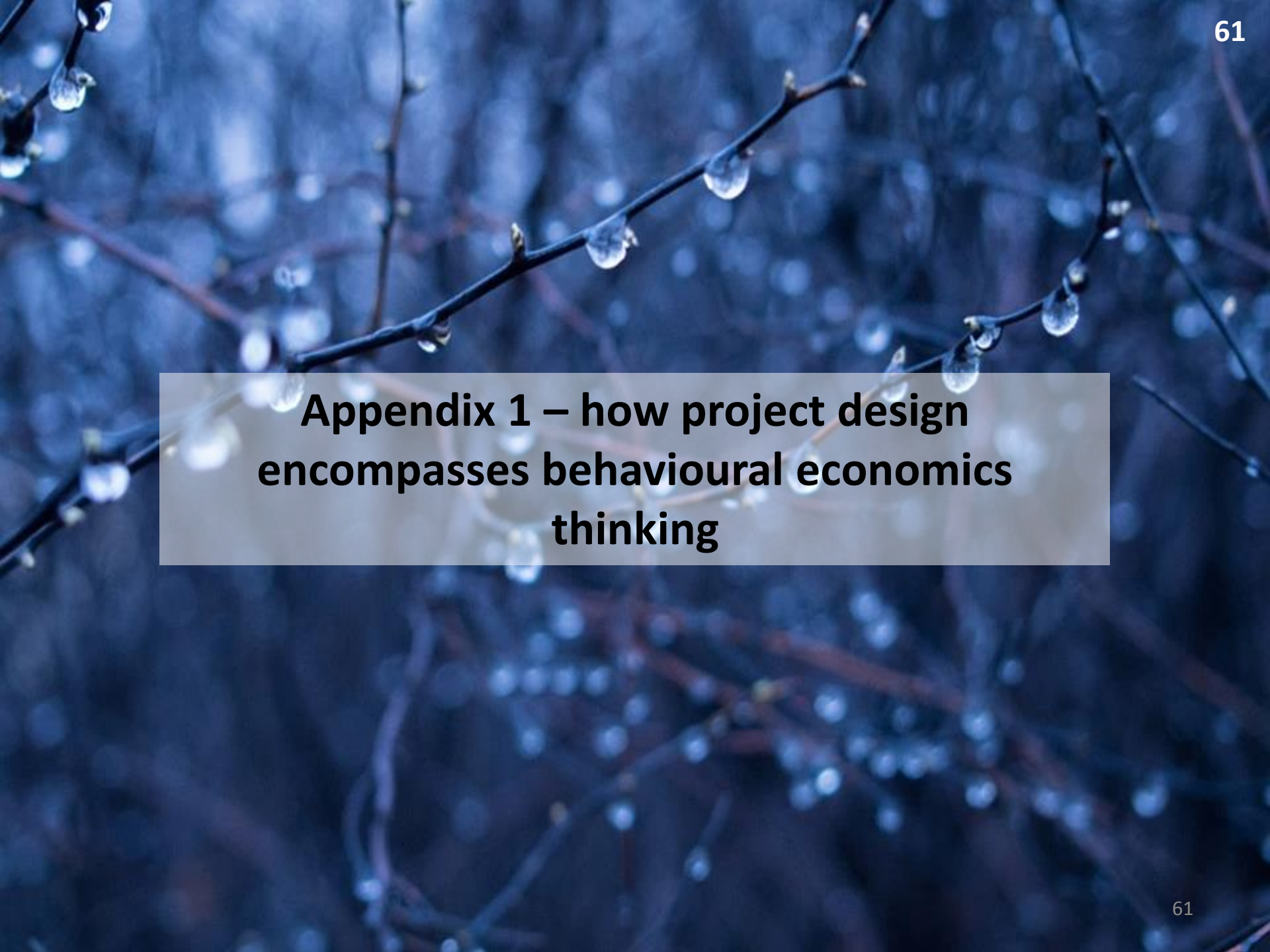
### **Different scenarios elicit different responses:**

9. Willingness to pay is greatest for mitigating against environmental damage: the perceived high likelihood of deterioration, and a shared responsibility to protect our environment both today and for future generations, is felt more keenly here than for other scenarios
10. Willingness to pay is lowest for mitigating against water restrictions: hosepipe bans are rare and seen to affect few customers (who use hosepipes). Furthermore, customers see the main responsibility lying with the water company to manage future demand via its assets – something bill payers are less happy to contribute towards.

**Implications for Wessex Water:**

11. Customer communications will need to build trust in Wessex Water as a business in command of the risks facing the region – and for putting customers' interests first (in part by demonstrating that the responsibility for mitigating risk is being shared).
12. Customers respond best to strategies that have a clear logic (e.g. doubling the speed of pipe replacement); are preventative not reactive; resonate emotionally (e.g. protecting local environments); and are low cost.
13. Customers demonstrate that they are prepared to do their bit to mitigate risk – but are not sure how. Seeing Wessex Water in action both educating and enabling 'good' behaviours will improve basic understanding of the risks and give Wessex Water a more convincing case for resilience investment.





**Appendix 1 – how project design  
encompasses behavioural economics  
thinking**



# Reflecting on behavioural economics

**Fundamental principle: consumers fail to behave rationally due to behavioural biases. Organisations can influence behaviour either by removing barriers (i.e. making life easier for customers); or capitalising on the natural biases of people**

**How does Wessex Water want to influence behaviour?**

## *Barriers*

- Knowledge
- Money
- Effort

## *Biases*

1. Loss aversion
2. Status quo /default effect
3. Social norms
4. Time-inconsistency
5. Mental short cuts
6. Incentives
7. Framing

## *Strategies*

- Emphasise what's to lose
- Change how choices are presented
- Highlight what others are doing
- Focus on present
- Influence choice
- Rewards or penalties
- Consider the messenger

Bias	Design	Response
<p><b>Status quo /default</b> People prefer to go with the flow rather than change</p>	<ul style="list-style-type: none"> <li>• Three scenarios and 3 investment options provided i.e. customers given choices</li> <li>• Not presented as low-med-high to avoid defaulting to the middle option</li> </ul>	<ul style="list-style-type: none"> <li>• Choices rationalised though debate</li> <li>• Default option (BAU/no impact on bills) not the most commonly chosen option</li> </ul>
<p><b>Loss aversion</b> People fear losing something more than the advantages of acquiring something</p>		<ul style="list-style-type: none"> <li>• Strong desire for 'no change': most relevant loss is bills going up</li> <li>• Respondent reluctance to use all allocated points may relate to 'loss aversion' bias</li> </ul>
<p><b>Time-inconsistency</b> People see the present as more important than the future and are led by short term urges more than long term interests</p>	<ul style="list-style-type: none"> <li>• Warm up 'pub quiz' to put respondents in mind of past resilience/infrastructure projects</li> </ul>	<ul style="list-style-type: none"> <li>• Low engagement with future risks (population growth more relevant than climate change)</li> <li>• Bill impacts relate to present: natural bias to minimise bill even if this to detriment of future</li> </ul>
<p><b>Social norms</b> People are strongly influenced by others</p>	<ul style="list-style-type: none"> <li>• Friendship paired (unmoderated) depths: new method based on 'Listening Project'</li> <li>• Private self-completion forms</li> <li>• Pre and post WTP exercise</li> </ul>	<ul style="list-style-type: none"> <li>• Research did hear views that would be unacceptable in a group (non recyclers, low interest in environment etc.)</li> <li>• 'Do my bit' strong motivations for people to recycle – also observed in this research</li> </ul>

Bias	Design	Response
<p><b>Framing</b> People are influenced by the messenger</p>	<ul style="list-style-type: none"> <li>Context stimulus included discover Water comparator information</li> <li>Immersion stimulus presented by independent researcher and couched in 3<sup>rd</sup> person (not 'we')</li> <li>Film included independent stakeholder voices and customers to provide broad</li> </ul>	<ul style="list-style-type: none"> <li>Customers still question legitimacy of private companies asking customers to pay for future investment</li> <li>Where information is vague, people question its validity</li> <li>Research materials – where customers are being informed - should present clearer business case for and against large investments</li> </ul>
<p><b>Incentives/ disincentives</b> People respond to games (points/rewards)</p>	<ul style="list-style-type: none"> <li>Respondents are incentivised to participate</li> <li>Private self-completion forms had a game element to help people show trade offs/priorities</li> </ul>	<ul style="list-style-type: none"> <li>Respondent reluctance to use all allocated points may relate to 'loss aversion' bias</li> </ul>



**Appendix 2 – stimulus materials**

## Appendix: stimulus and self-complete exercises

### *In order of use in the event*

- Pre-post self complete
- Table quiz
- Introduction to Wessex Water presentation
- Context film
- Post-film self-complete
- 4 x resilience scenarios (NB only 3 scenarios shown per event)
- Resilience game

# Self-complete, pre-post 1/2


Half completed at the start of the event, second half completed at the end of the event

## **EXERCISE 1 - *please complete at the start of the event***


- A. Water companies need to plan and prepare for the future. What are all the different things they need to think about in order to 'future proof' water services for the next generation of customers? Write down as many things as possible using the box below. Feel free to discuss this question with the people around you.**

Water companies need to prepare and plan for...

- B. On a scale of 1 to 10, how willing are you to pay more for your water bill - thinking about all the things a water company need to do when planning for the future? Please circle one number below**

  
Unwilling to pay more  
for future-proofing  
water services

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

  
Willing to pay more  
for future-proofing  
water services

STOP

STOP: DO NOT COMPLETE THE NEXT EXERCISE UNTIL THE VERY END OF THE EVENT

STOP



# Self-complete, pre-post 2/2

Half completed at the start of the event, second half completed at the end of the event

## EXERCISE 2 - *please complete at the END of the event*

- A. On a scale of 1 to 10, how willing are you to pay more for your water bill - thinking about all the things a water company need to do when planning for the future AND considering all of the things discussed today? Please circle one number below



Unwilling to pay more for future-proofing water services

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----



Willing to pay more for future-proofing water services

For the above question, please explain why you gave that score? **How, if at all, do you feel differently to when you answered this question at the beginning of the session?** What is it that you have heard this evening that has made you feel differently?

# Table quiz

*How many years did it take to build the M25?*

- A. 7
- B. 11
- C. 19

*The Channel Tunnel opened in 1994, how many years did it take to build?*

- A. 6
- B. 10
- C. 15

*When was the first iphone launched?*

- A. 2005
- B. 2006
- C. 2007

*When was the first ever email sent?*

- A. 1966
- B. 1971
- C. 1979

*When was Easyjet founded?*

- A. 1988
- B. 1992
- C. 1995

*St Paul's Cathedral was the highest building in London until what year?*

- A. 1925
- B. 1958
- C. 1967

*The new Severn Bridge opened in 1966 at a cost of £8.5m. How long did it take to build?*

- A. 5½ years
- B. 4½ years
- C. 3½ years

*Bristol Airport is currently undergoing a major expansion project to increase its capacity to 10 million passengers a year. How much is it costing?*

- A. £100m
- B. £150m
- C. £200m

# Introduction to Wessex Water presentation

# INTRODUCTION TO WESSEX WATER



**your say**  **your future**

# The English Water Market



## Wessex Water

- Supplies water to 1.3 million customers.
- Supplies sewerage services to 2.7 million customers every day

# Facts about Wessex Water



Wessex Water  
treats & supplies  
280 million litres of  
water a day



It employs 2,200  
people in the  
region



It removes & treats  
470 million litres of  
sewage a day



It looks after 7,200  
miles of water  
mains and 22,000  
miles of sewer  
pipes



# Water companies have 'assets'





# Water companies have 'partners'



ENVIRONMENTAL BODIES



HOUSEHOLDERS (LIKE YOU) WHOSE EVERYDAY ACTIONS IMPACT THE NETWORK



INDUSTRIAL SITES WHO MAY DRAW WATER FROM OR RELEASE WATER INTO RIVERS



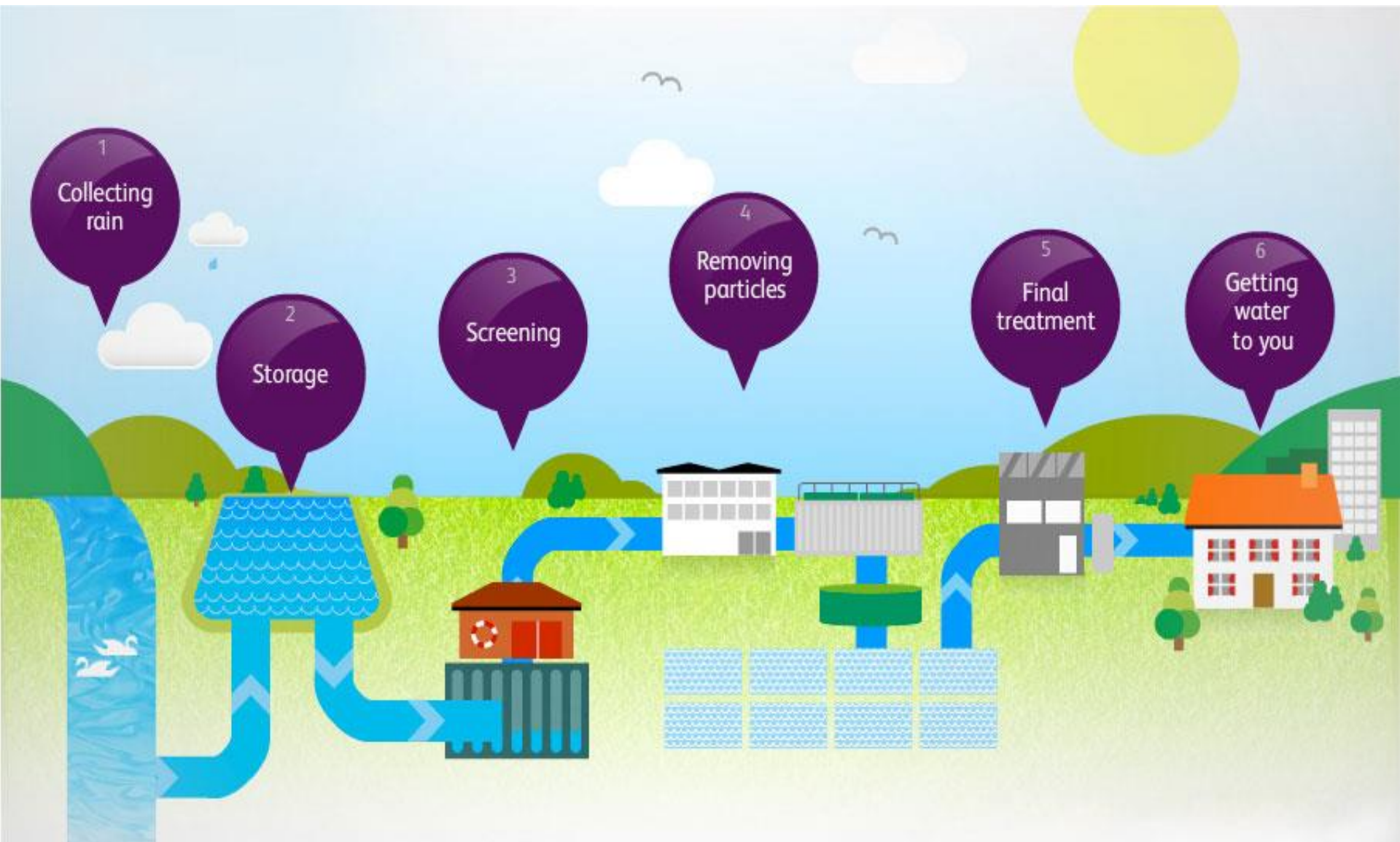
FARMERS AND LAND OWNERS WHOSE ACTIVITIES MAY CONTAMINATE RIVERS AND STREAMS



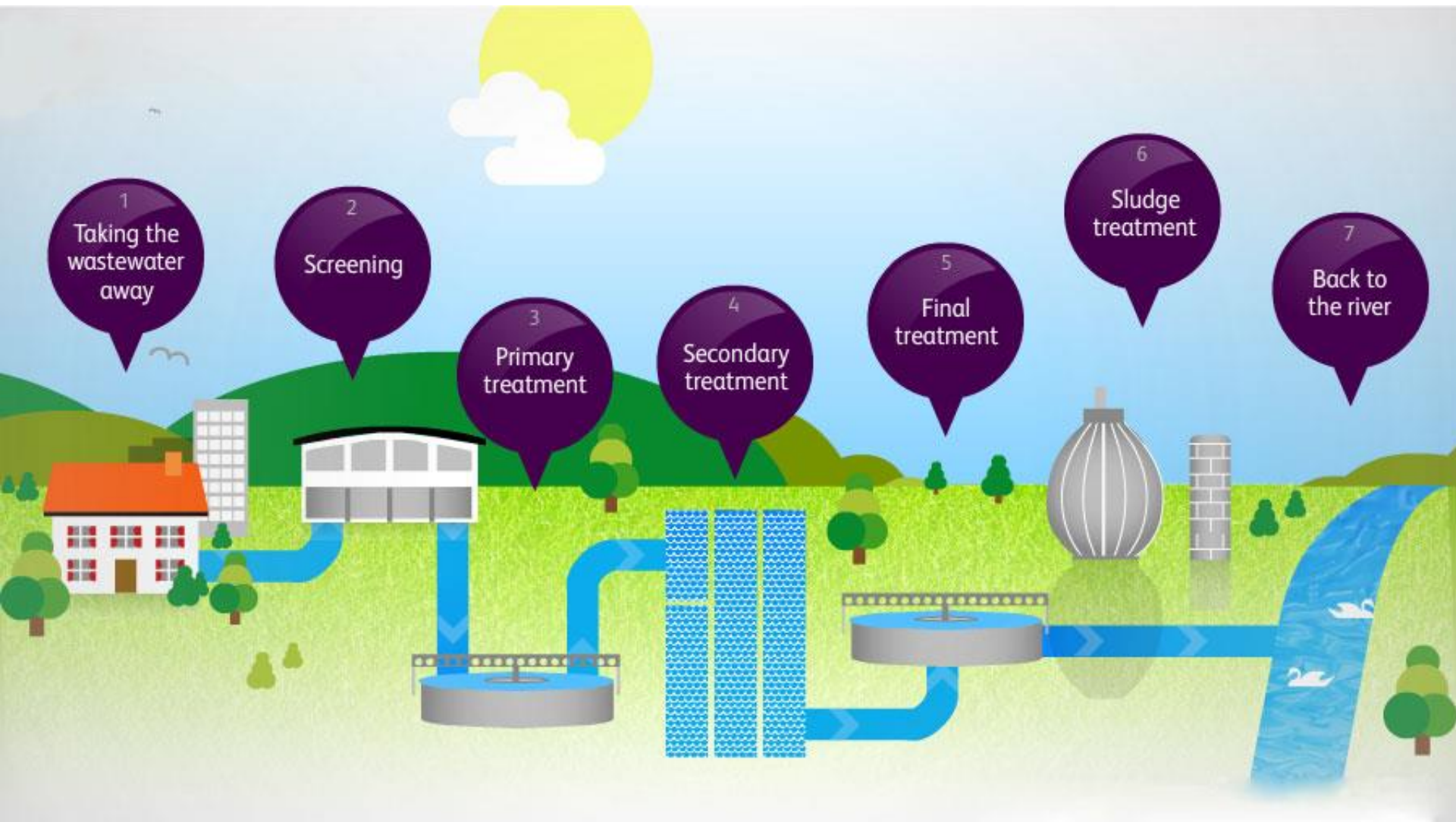
FLOOD PREVENTION AGENCIES



# Water treatment



# Wastewater treatment



# Regulating the water industry



- Regulates environmental impact of water industry



- Reviews company performance and sets bills



- Setting policy and law



- Ensures water is clean and healthy to drink



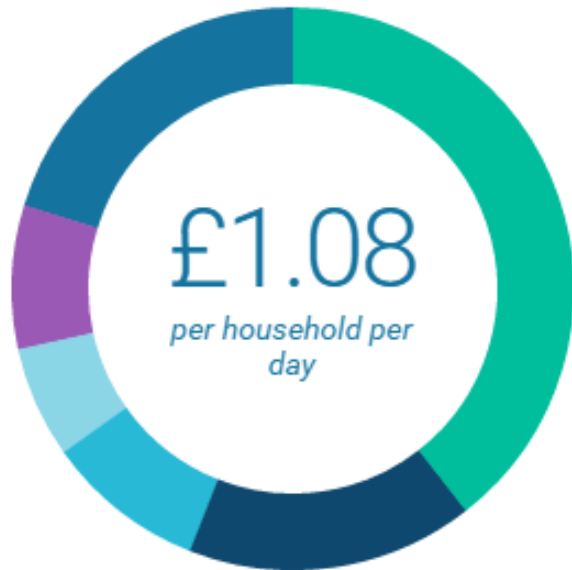
- Represents customer interests



- Regulates environmental impact of water industry

# Breakdown of a typical water bill

## How customers' money is spent



**43p** People and material

**18p** Maintaining our equipment

**10p** Building new assets

**7p** Energy

**9p** Paying taxes, rates and licences

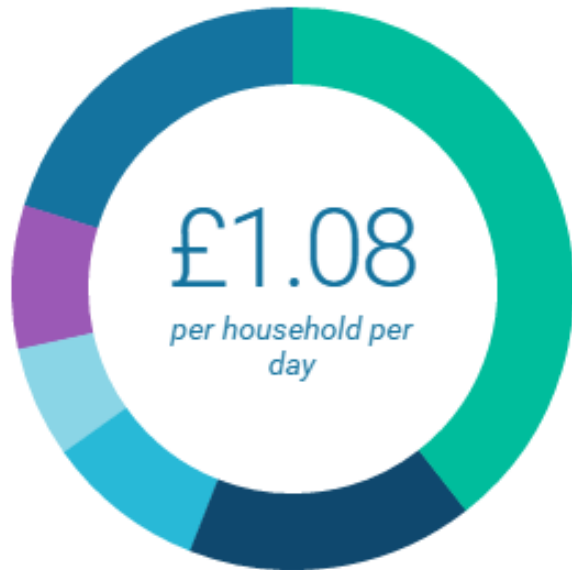
**22p** Paying for investment to improve services

*Source: Water UK (indicative split between categories based on Final Determinations in 2014 Ofwat Price Review and 2015/16 outturn data)*



# Breakdown of a typical water bill

## How customers' money is spent



43p People and material

18p Maintaining our equipment

10p Building new assets

7p Energy

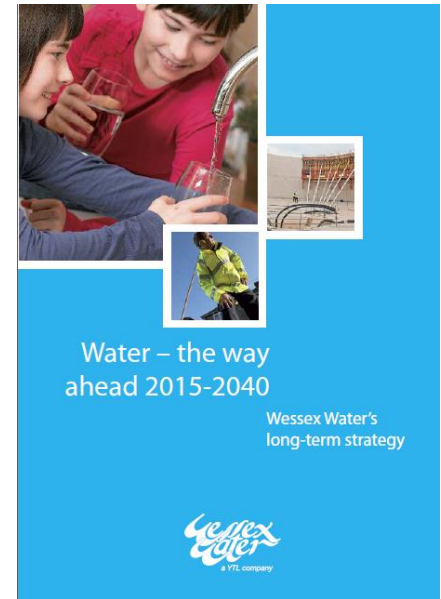
9p Paying taxes, rates and licences

22p Paying for investment to improve services

*Source: Water UK (indicative split between categories based on Final Determinations in 2014 Ofwat Price Review and 2015/16 outturn data)*

# Maintaining and future-proofing water services

- How much water will be needed – and where?
- How will changes to weather affect us?
- How will the needs of the local population change?
- **What do our customers expect from us?**
- How much do we need to charge customers in their bills?



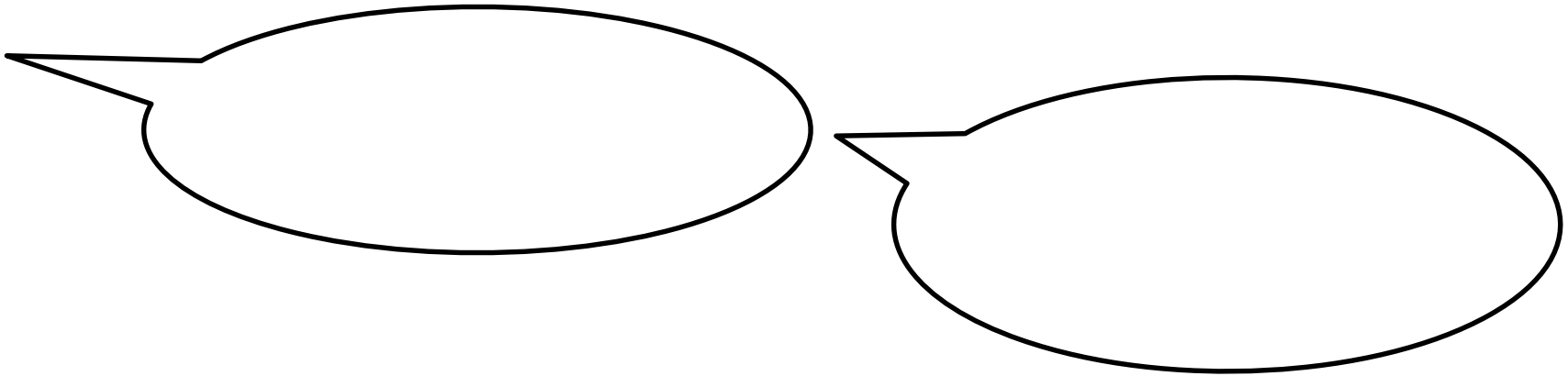
# Context film



# Post film self-complete

You've just watched the video...

*What 2 comments struck you most when watching the video, and why?*



*From what you've seen so far, what do you think is the most important issue that water companies should be planning for?*

# 4 x resilience scenarios

Environmental impacts

Sewer flooding

Water supply stoppages

Water use restrictions

# Fact sheet: Environmental impacts

1

## WHAT YOU NEED TO KNOW

Water companies can be the cause of environmental problems which is why their protection of rivers, streams and coastal waters is very important



Rivers are nature's water pipework and storage system



Malmesbury sewage treatment works



Sewer overflow on beach prevents sewer flooding in the town

2

## WHAT DAMAGES THE ENVIRONMENT?

- **Very high rainfall** if sewers are overwhelmed with storm water and about to flood into houses, pipe outlets are opened – but it is possible for these to temporarily pollute the coastal waters
- **Sewage plant failure:** e.g. if disinfecting machinery breaks down at a coastal treatment works, water at popular beaches nearby can become polluted
- **Taking water from rivers:** river ecology can be harmed if too much water is removed
- **Pollutants and nitrates getting into the rivers and streams:** animal manure and fertilizers wash into water courses and require a lot of cleaning at the treatment works

3

## INDUSTRY STATISTICS

Wessex Water named 2017 winner of Institute of Water's south west area innovation award for **catchment management** projects



**Catchment management** is a fancy term for working with nature to improve water quality. E.g. reed beds naturally clean water and winter cover crops reduce nitrate leaking.



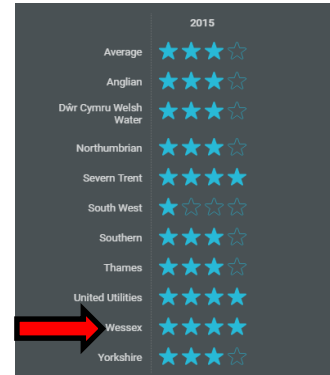
*“All water companies comply with strict environmental laws. We are one of the industry's leading companies for complying with the laws”*



beaver dams could help prevent flooding!



Environment Agency give star ratings to all water companies. Wessex gets 4/4



## WHAT WESSEX WATER IS DOING NOW

4

- Over the past 10 years we have invested **£180m** in upgrading our sewage treatment works to improve river water quality
- We have also invested **£80m** to improve the quality of bathing waters around the coast

### Partnership Working is key!

- For instance, we advise farmers on the optimum levels of fertilisers for their acreage. Farmers save money and we help reduce excess fertiliser getting into rivers and streams near farming land. A win win!



# SCENARIOS: ENVIRONMENTAL IMPACTS

**A**

**Meeting current environmental standards as set in regulations**

Currently compliant on all measures and have 4 star rating (highest possible)



- Previous decade has seen major investments to ensure Wessex meets water quality laws
- Improving partnerships with farmers reducing pollution in rivers
- New supply pipe grid means less water taken from rivers (so less stress on eco systems)

**B**

**Climate changes and extreme weather events increase**

Increasing sewer discharges into the sea near public beaches & rivers



- Environment spoiled for beach and river users
- Spills into rivers, kills wildlife (fish) and damages eco-systems

**C**

**Shock event e.g. a disinfecting plant at coastal treatment works fails; or malicious attack**

Popular beach is polluted



- Environment spoiled for local beach users
- Businesses relying on tourism see loss of revenues

# FUTURE PROOFING STRATEGIES – environment



**Meeting current environmental standards as set in regulations**

Investment to meet new environmental laws



- Further investment required to meet new legal requirements
- New requirements are phased over 10 years, but still require major investment in new treatment technology

**Environmental risks of sewage treatment works polluting rivers and seas are reduced**



£15 per year bill increase



**Climate changes and extreme weather events increase**

Investment to reduce number of sewer discharges into rivers and the sea



- Investment in the network where there are vulnerable areas
- Investment will achieving higher environmental benefits quicker
- Future generations will benefit from longer term

**Risk of environmental damage caused by gradual climate changes is reduces**



£5 per year



**Disinfecting plant at coastal treatment works fails**

Invest to improve standards across our 47 coastal bathing waters



- All 47 works meet government standards but shock events can occur
- Hence continual updating of technology to avoid failures and malicious attacks
- Back up systems and stand-by generators in case of failures

**Environmental risk of a shock event reduced & response preparation improves**



£20 per year

1

## Fact sheet: Sewer flooding

### WHAT YOU NEED TO KNOW

This year, 170 customers in the Wessex Water region experienced dirty sewer water coming into their homes. There are 1.2 million homes in the region.



Poole 2016

Bournemouth  
June 2013

'Superpond' scheme  
built in Weston-S-M

2

### WHAT MAKES SEWER FLOODING HAPPEN?

- 90% of sewer flooding incidents currently are due to blockages, and most of these are build ups of wet wipes or fats

**Extreme rainfall can overwhelm the rivers and sewers, especially:**

- In areas of increased population - around new housing developments where the sewer capacity can't cope with both the heavy rain and the increased loos and bathrooms!
- Where lots of front gardens are paved over so rainfall can't seep away into the earth

170 homes had sewer water inside their homes last year!! Yuk! That must be the worst thing that can go wrong for water customers...

“Right now, we're actually the best in the industry!”



Yes, but compared to the 90s, Wessex Water's customers are far less likely to experience this today...in fact 8 times less likely!

### INDUSTRY STATISTICS



3

4

### WHAT WESSEX WATER IS DOING NOW

**£5 million** is spent each year on cleaning sewer pipes, educating customers about wet wipes which block sewers, and cleaning up when blockages happen.

'Superpond' in Weston Super Mare is an example of Wessex Water working with The Environment Agency and North Somerset Council. A massive basin, it takes up to 4000m<sup>3</sup> of excess rainfall predicted to run off the roofs and roads from new housing developments - water that would potentially overwhelm the sewerage system during heavy rain storms.

**£20 million** per year is spent improving the size of the sewer pipes – and building additional pipework for new houses

# SCENARIOS: SEWER FLOODING

**A**

**Sewer pipes get blocked with baby wipes, cooking fat etc.**

**Around 170 properties experience sewer flooding in their homes each year.**



- Very distressing for householders
- Wessex has immediate response teams to unblock, repair and clean up
- Cost of redecoration met by householder's insurance

**B**

**Rapid population growth**

**Increasing risk: twice as many houses likely to experience sewer flooding**



- New development connections put pressure on main sewers
- New houses = more drives and patios so more rainfall goes into sewers (rather than seeping into earth)
- Steady increase over time

**C**

**Climate changes mean more rainfall.**

**Increasing risk: twice as many houses likely to experience sewer flooding**



- Storm water can quickly overwhelm the sewer network
- Dirty water can then flood into homes
- Storm water overflows into the sea – coastal waters are temporarily unfit for swimmers
- Unpredictable and extreme

# FUTURE PROOFING STRATEGIES – sewer flooding

**A**

Sewer pipes get blocked with baby wipes, cooking fat etc.

Assume existing investment will change behaviour in time



- 90% of incidents due to blockages: continue behaviour change campaigns
- Continue to put pressure on manufacturers of baby wipes, tampons etc. and Advertising Standards Authority

**Risk of flooding could increase as behaviour change alone may not protect against climate change and population growth**



No impact

**B**

Rapid population growth

Invest in additional capacity



- Increased investment in sewer capacity e.g. building huge storm storage tanks
- Working in partnership with local authorities to avoid housing developments in flood risk areas

**Risk is managed in the short term but future generations may see increased levels of sewer flooding incidents**



£13 per year

**C**

Climate changes = more extreme rain events in the long term

Invest in additional capacity for long term protection



- 10% of incidents due to inadequate sewer capacity: increase size of main sewer pipes – as in scenario B
- Targeted investment only: network is vast (33,000km) and pipes largely under roads

**Risk is managed to maintain current levels of sewer flooding now and for future customers**



£33 per year

# Fact sheet: Water supply stoppages

1

## WHAT YOU NEED TO KNOW

Last year, 9,000 Wessex Water customers had an unexpected supply stoppage. Most of these stoppages were of short duration, but a small number of households had no water for up to 12 hours.



Wessex replaces 50km of pipe every year



The Wessex supply pipe network is now more joined up. Water can even be transferred between water regions if needed

2

## WHY COULD WATER GO OFF UNEXPECTEDLY?

- Because of a burst main or similar problem – wear and tear on the network. This is usually resolved in a short time.
- Longer interruptions could occur when only one supply pipe goes to your area and that pipe fails (so there's no way of diverting water from another main pipe)...
- ...or if part of the supply system is hit by a catastrophe e.g. a criminal attack, or if our IT systems were infiltrated, and there is no way of diverting water from another source



Things get back to normal after a few hours. But there have been cases in the past when the water supply is down for much longer...

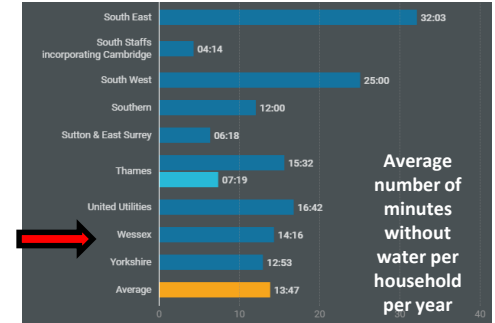
## INDUSTRY STATISTICS

3

Wessex sits just below average in the industry



“ There are over half a million households where we supply water. The vast majority have more than one water supply source serving them. The remaining 42,000 households are more at risk as they only have the one water supply source. ”



Average number of minutes without water per household per year

It's mainly burst pipes that cause the water to go off. I've seen it happen in front of my very eyes!

4

## WHAT WESSEX WATER IS DOING NOW

### We prepare

- **£220 million** has been spent over the last decade on building a better supply pipe 'grid'
- **£12m** per year is spent on continual improvement replacing the oldest areas of pipework
- **Cyber Tsars:** specialist staff are employed to protect Wessex Water from cyber crime which could bring down a treatment works or any of our computer systems

### We respond

In an emergency we are on the scene immediately and have enough bottled water to serve customers in the short term.



# SCENARIOS: WATER SUPPLY STOPPAGES

**A**

**Pipe network deteriorates at expected rate**

Supply interruptions experienced by 9,000 households per year



- Majority of households have two sources of supply so interruptions last no more than a few hours
- Wessex provides bottled water to households
- Vulnerable customers are given priority treatment (elderly, disabled etc.)

**B**

**Pipe network deteriorates faster than anticipated**

Increasing risk: supply interruptions are more frequent (average doubles)



- Customers notice more leakage incidents where underground pipes have perished
- More time and money is spent fire-fighting an aging pipe network

**C**

**Large treatment works fails**

The 42,000 homes who rely solely on this works lose water for 10 days



- Current risk actively monitored
- System failure is very unlikely but would require potentially lengthy repairs
- Residents and businesses will have to rely on bottled water and bowsers

# FUTURE PROOFING STRATEGIES – supply stoppages

**A**

**Pipe network deteriorates at expected rate**

Invest in network at same rate as in past



- Replace 50km of pipe per year (out of 11,500km)
- Recent network investment of the grid reduced risk of prolonged supply loss for all but 42,000 customers

**Risk is managed in short term but future customers may see increase in supply stoppages**



No impact on bills

**B**

**Pipe network deteriorates faster than anticipated**

Increase network investment to meet deterioration rate



- Increase the rate of investment (100km of pipe per year)

**Risk of stoppages improved for future customers who may experience at same frequency as today's customers**



£9 per year

**C**

**Large treatment works fails**

Invest in protection of remaining key site where 42k customers at risk



- Continually update technology to avoid system failures
- Have back up systems
- Have tested response plans to provide affected customers with water

**Risk of stoppages improved both now and for future customers**



£4 per year

1

## Fact sheet: Water use restrictions

### WHAT YOU NEED TO KNOW

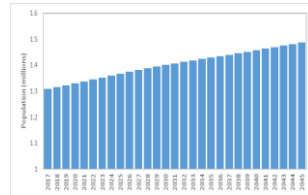
When water is in short supply water companies can ban the use of hoses. In very extreme circumstances water companies can restrict the supply from the mains and provide drinking water in other ways. Despite some very dry summers, the last hosepipe ban Wessex Water imposed was over 40 years ago.



Luxhay Reservoir in 2011



Last hosepipe ban was in 1976 (lasting 3 months)



15% population growth by 2045

2

### WHAT MIGHT MAKE WATER USE RESTRICTIONS HAPPEN?

- A long period of low rainfall, particularly in the winter months. Rainfall is needed to fill the reservoirs and underground water sources (aquifers).
- Many more people living in the region so the water supplies have to cater for more households
- More waste: people might be using more water than they need; pipes might be leaking more
- Changing climate patterns may affect our underground sources of water in unexpected ways.

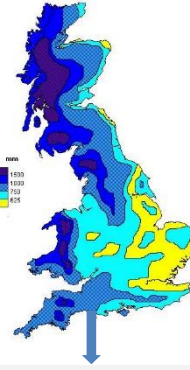
...but it never stops raining where I live!



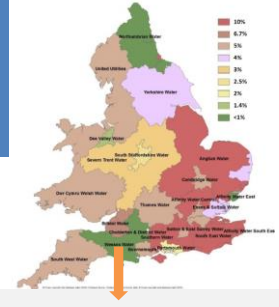
It feels like that sometimes. But water supplies run low when we have dry winters

### INDUSTRY STATISTICS

3



In the last 100 years there have been 3 critical years of low rainfall: 1921, 1936 and 1976



The Wessex area is not the wettest, but receives up to twice as much rainfall as the driest parts of the UK.

The Wessex Water region has a less than 1% chance of a hosepipe ban: that's lower than many other water company regions in England

4

### WHAT WESSEX WATER IS DOING NOW

We have halved leakage (by 70 million litres per day) over the past 20 years at a cost of £250m

We offer meters and provide home efficiency checks to help reduce water use

We constructed new mains pipes to move water to where it is most needed at a cost of £220m



“Our job is to manage supplies so that everyone can use what they need – even in very dry periods like 1976. We also need to plan for a bigger population in our region.”

# SCENARIOS: WATER USE RESTRICTIONS

Climate change may lead to increased incidences of dry weather. Along with population growth this may lead to an increased chance of water shortages during periods of low rainfall

**A**

**Keep current levels of investment the same**



**B**

**Future proof by investment in water efficiency**



**C**

**Future proof by investment in assets**



- In dry summers, customers encouraged to save water
- Water restrictions may occur: only once in a lifetime on average.
- Commercial water use will not be restricted

- Customers encouraged and assisted to use water wisely at all times.
- Greater certainty that water restrictions occur only once in a lifetime
- No restrictions on commercial use

- In very dry summers customers encouraged to save water.
- Restrictions imposed very rarely, once in two lifetimes on average.

# FUTURE PROOFING STRATEGIES – water use restrictions

Climate change may lead to increased incidences of dry weather. Along with population growth this may lead to an increased chance of water shortages during periods of low rainfall



**Keep current levels of investment the same**



- Maintain existing supply system.
- Promoting water saving
- More meters (currently 60% households metered).
- No need to increase amount of water from reservoirs and rivers

**Risk assumptions may prove wrong and future customers experience more frequent restrictions**

**No impact on bills**



**Future proof by investment in water efficiency**



- Increasing the number of customers with meters
- Proactively assisting customers to use water more efficiently
- Provide tailored information about household water usage

**Increased bill reduces risk of more frequent water restrictions for future customers**

**£5 per year**



**Future proof by investment in assets**



- Investment in the water supply system – e.g. improving connectivity of the supply grid; building new bore holes and reservoirs

**Increased bill pays for significantly reducing risk of water restrictions**

**£21 per year**

# Resilience Game



Q1

**In principle, which of the following you agree with most strongly?**

	Tick one only
A water company should be prepared for <b>today's risks</b> : we don't know what the future holds	
A water company should be prepared for <b>predictable future risks</b> such as population growth, climate change, pipe deterioration	
A water company should be prepared for <b>unpredictable future risks</b> such as malicious attacks, major weather events – however unlikely	

Q2

**In practice, decisions are more complicated and there are costs attached... you have 100 free points to spend on managing different risks. Anything over 100 points could involve an increase in bills. How many points will you spend?**

What I would spend to...	The risk of my water being restricted in dry rainfall periods		The risk of my home having no water when the system breaks down/wears out		The risk of sewer flooding at home when the system can't cope		The risk of my local rivers/streams/beaches deteriorating	
		✓		✓		✓		✓
Reduce today's risks	10		10		10		10	
Reduce predictable future risks caused by population growth, climate change, pipe deterioration	20		20		20		20	
Reduce unpredictable future risks caused by malicious attacks and major weather events – however unlikely	50		50		50		50	
<b>Total:</b>								

Q3

Is there anything you personally would be prepared to do to reduce some of these risks?

		✓
Install a water butt (they cost around £25 to buy)	5 points	
Fit water saving devices such as showerhead flow limiters throughout your house (these are free from Wessex Water)	5 points	
Guarantee not to use a hosepipe or outside tap from June to August each summer	5 points	
Have a water meter so you pay for what you use	5 points	
Guarantee not to flush 'unflushables' (have bins by your toilets for wipes, tampons etc.)	5 points	
<i>How many points have you gained?</i>		

Q4

If you have earned more points you can now add these to the original 100 and repeat the exercise of allocating points to reduce risk. You can still spend more than your new total but it may mean bill increases...

What I would spend to...	The risk of my water being restricted in dry rainfall periods		The risk of my home having no water when the system breaks down/wears out		The risk of sewer flooding at home when the system can't cope		The risk of my local rivers/streams/beaches deteriorating	
	✓		✓		✓		✓	
Reduce today's risks	10		10		10		10	
Reduce predictable future risks caused by population growth, climate change, pipe deterioration	20		20		20		20	
Reduce unpredictable future risks caused by malicious attacks and major weather events – however unlikely	50		50		50		50	
<b>Total:</b>								

Q5

Here is the set of possible investments – many of which you have already seen during the session. There is a mandatory investment of £15 to reduce environmental risks; what other investments would you be willing to pay for?

	The risk of my water being restricted in dry rainfall periods	The risk of my home having no water when the system breaks down/wears out	The risk of sewer flooding at home when the system can't cope	Environmental impacts because of more extreme weather or malicious attack	
Reduce today's risks	£0	£0	£0	£15 mandatory investment	✓
Reduce predictable future risks caused by population growth, climate change, pipe deterioration	£5 (Increased water efficiency measures)	£9 (bigger pipe replacement programme)	£13 (sewer improvements)	£5 (sewer improvements)	
Reduce unpredictable future risks caused by malicious attacks and major weather events – however unlikely	£21 (new water supply assets)	£4 (site security and back up systems)	£33 (greater sewer improvements)	£20 (sewer improvements and back ups)	
Total:					
<b>The average Wessex Water bill is £470: please add the investments you support to this figure to see the possible bill impact</b>	<p style="text-align: center;"><b>£470 + £_____ = £</b> <input style="width: 150px; height: 25px;" type="text"/></p> <p>Tick here if you would like to see a £10 reduction in your bill on account of water trading in drier regions...but remember it might increase the risk of <input style="width: 60px; height: 25px;" type="text"/></p>				

# Blue Marble Research

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## Wessex Water – Resilience – 1 hour paired depth

**Objective:** to broadly explore customer understanding, perceptions and attitudes towards the concept of resilience/preparing for possible long term eventualities. The sessions will capture customers’ everyday use of language when talking about matters relating to resilience, aiding the development of stimulus for the main stage of research.

All paired depths to be filmed with footage being used to create stimulus in the main stage of research.

The paired depths have been recruited to know one another, either as friends or family members. This document is a skeleton guide highlighting the broad topic areas we wish customers to talk about between themselves – the pair will initially be left alone to discuss the topics. The session is intended to be fairly unstructured, allowing people to talk about what really matters to them spontaneously. The final section will give the moderator the opportunity to probe areas of interest captured during the spontaneous (unmoderated) discussion.

### Session set-up (10-15 minutes)

*To explain the purpose and process of the research and to create a relaxed and comfortable environment*

.....

- *Purpose of the project:* Blue Marble introduction, research on behalf of a utilities company who are interested in understanding how people feel about the future
  - **Moderator to explain what will happen during the 1 hour session...**
  - Firstly, participants will be left alone to discuss a range of different topics provided to them on cards – the moderator will not be present for this and so they will be expected to talk freely amongst themselves. They will be provided with some questions to consider but the purpose is for their conversation to be open and unstructured.
  - A Blue Marble moderator will then return to the room asking them a series of follow up questions.
- *Reassurances:*
- **No right or wrong answer:** moderator to reassure participants that there is no right or wrong answer. The purpose is for them to speak openly, honestly and spontaneously.
  - **Filming:** Moderator to remind all that the duration of the session will be filmed. Clips may be used to make a short film that will be shown to other customers (but not in Chippenham)

#### First short conversation as a warm up (with moderator in the room):

- **Envelope 1:** ‘How do you know one another – what is your relationship? How are you alike/unalike? What do you agree on and disagree on?’
- *Moderator doesn’t interject but draws to a close after 5 minutes*

### Listening Project

*To explore spontaneous reactions to a range of topics* (20-30 minutes)

.....

For this part of the session the moderator will leave the room allowing the pair to talk through the 5 remaining topics one by one talking spontaneously about each. Moderator to provide the pair with 5 envelopes. Starting with ‘number

2', all other envelopes to be blank – blank envelopes to be rotated across the sample to stimulate different discussion paths. The first and second envelopes are the introduction / warm up topics and hence always opened first.

The pair will be given 5 minutes to talk about each topic. At the end of every 5 minutes moderator will signal they need to move on to the next envelope. If the pair are struggling, moderator to provide a crib sheet of generic questions to think about when discussing each topic. Moderator to observe the discussion from another room, making notes of areas to probe later on in the session.

## STIMULUS:

**Envelope 2:** 'The year is 2042 (25 year from now), in what ways do you imagine life will be different?'

- What do you imagine everyday life to be like in the UK in 2042, thinking about our homes, the way we travel, the technology we use etc.

### **Remaining topics to be rotated across the sample.**

**Envelope topic:** Newspaper headline related to flooding scenario: '100 families in Chippenham experienced sewer flooding in last week's storm. Water company says new housing developments and exceptionally heavy rainfall are putting strain on the sewage system – and problems could increase in the future.'

- Imagine this was a headline in your local paper...what conversations would it spark between you?

**Envelope topic:** Newspaper headline related to low rainfall and drought scenario: 'Water company warns that water may need to be rationed if no significant rainfall in the next 2 weeks'

- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What would you feel if you were affected by this incident?

**Envelope topic:** Newspaper headline related to supply stoppage scenario: 'Residents in West Chippenham lost water supplies for 18 hours. Local Councillors say water pipes not future-proof'

- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What would you feel if you were affected by this incident?

**Envelope topic:** Newspaper headline related to environment scenario: local rivers and streams are not proving the best habitats for local wildlife. Pollution and low river levels are having a detrimental effect.

- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What would you feel if your local rivers and streams were mentioned in this article?

## Moderated discussion

*To further understand customer attitudes when it comes to resilience*

**(20 minutes)**

Moderator to return to the room and explain how interesting the pairs discussion was. Moderator to explain that for the rest of the session they would like to ask some specific questions based on what the pair discussed.

- Overall, what are your thoughts on what you just discussed?
  - Allow for spontaneous response



- Has anything surprised you from what you just discussed?
  - How, if at all, do you feel differently from when you first walked in the room?
  - Are there any topics you feel to be more important than others? Please explain
- *Moderator to probe specific areas of interest noted down whilst listening to the pairs discussion*
  - Who is **responsible** for planning for future events like the ones you just discussed...?
    - *Allow for spontaneous response and then probe government, companies, communities, people*
  - What **action** should be taken to avoid future events like the ones you just discussed...?
    - What needs to be changed or put in place to ensure future events like this don't occur?
    - Who should be taking this action? *Allow for spontaneous response and then probe government, companies, customers*
  - If you were to tell friends/family about what you've talked about today, what will you tell them?
  - What words or phrases describe what we've been discussing here today?
  - If 'resilience' mentioned: probe fully on what this means, why they use it etc.
  - If not mentioned: is resilience a word you would use? Why/why not? What does it conjure up in your mind?
  - Finally, reassure that none of the headlines are real...there is no intention for water services to deteriorate in the region!

**Thank and close**

***The year is 2042 (25 years from now),  
in what ways do you imagine life will  
be different?***

What do you imagine everyday life to be like in the UK in 2042, thinking about our homes, the way we travel, the technology we use etc.

# WiltshireTimes

***100 homes in Chippenham flooded with dirty sewer water in last week's storm. Water company says new housing developments and exceptionally heavy rainfall are putting strain on the sewage system – and problems likely to increase in the future.***



Imagine this was a headline in your local paper...what conversations would it spark between you?

# WiltshireTimes

***Drought warning: Water company urges customers to use water more wisely. Restrictions on water use are imminent if no significant rainfall in the next 4 weeks.***



- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What would you feel if you were affected by this incident?

# WiltshireTimes

***Residents in West Chippenham lost water supplies for 10 days. Local water company supplied bottled water. Local Councillors seek answers: why did the treatment works fail? Are water companies investing enough in future proofing the network?***



- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What would you feel if you were affected by this incident?
- What questions would you ask your water company?



# WiltshireTimes

***Sewage treatment works failure leads to major pollution incident in the River Avon. Many fish and other wildlife have died.***



- Imagine this was a headline in your local paper...what conversations would it spark between you?
- What other knock on effects might this have to the wider community?



Timing	Activity	Moderator probes	Stimulus required
	Arrival & Registration		Respondents complete pre-task question
5 mins	Welcome & introduction to the workshop	<ul style="list-style-type: none"> <li>Objectives for evening</li> <li>Confidentiality</li> <li>Introductions to research &amp; client observers</li> <li>Table naming... average age of respondents (to make the age differentiation obvious)</li> </ul>	n/a
5 mins	<p><b>Section 1: ice breaker – projective time line exercise</b></p> <p><i>Aim: to contextualise deliberations as long term decision making – consulting you on decisions affecting future customers</i></p>	<p>Quick 10 question table multiple choice quiz: when did the following happen...? E.g.</p> <ul style="list-style-type: none"> <li><i>Years from start to finish building M25?</i></li> <li><i>Channel tunnel open?</i></li> <li><i>Pauls Cathedral was the highest building in London until what year?</i></li> <li><i>When was the new Severn Bridge built?</i></li> <li><i>When was the M4 opened?</i></li> <li><i>By how much has Bristol Airport's capacity increased in the recent refurbishment?</i></li> </ul> <ul style="list-style-type: none"> <li>Tables to reflect on quiz: what do we take for granted now that we didn't have 20/30/40 + years ago</li> <li>Also reflect on pre-task...what long term investments do you imagine water companies have to make?</li> </ul>	<b>Quiz sheet for each table</b>
20 mins	<p><b>Section 2: immersion</b></p> <p><b>Further project and industry background</b></p> <p><i>Aim: to inform customers of water regulator and focus discussion on future spend and planning</i></p>	<p>Lead moderator to introduce the below</p> <ul style="list-style-type: none"> <li>Brief background to Wessex Water</li> <li>Role of regulator within water industry</li> <li>Pie chart of where bill money is spent (sourced from Discover Water website), highlighting the discussion will be focused on the 'maintain equipment' and 'building new assets' part of the spend</li> </ul>	<b>Immersion stimulus slides (presented to room by lead moderator)</b>
	<p><b>Video</b></p> <p><i>Aim: to set up the themes for deliberation – and to show different viewpoints</i></p>	<p>We are going to be talking about water services both now and in the future... the quiz exercise reminds us that we are surrounded by technology and infrastructure that was once part of the future...but is</p>	

		<p>now very much part of today! All of which required lots of deliberation...much like tonight.</p> <p>This video that will introduce some of the things we are going to be talking about tonight: introduced to you by customers we met a few weeks ago - who agreed to be interviewed on camera. Also, some expert voices who will help us to understand the background to some of the decisions water companies have to make.</p> <p>Tonight, is about asking what you the customers would like your water company to be doing in terms of its future planning.</p> <p>Self-completion: note 2 comments that struck you when watching this video – and why? What. For you, is the most important issue for the water company to be considering?</p> <ul style="list-style-type: none"> <li>• Brief table discussion to capture initial responses to video</li> </ul>	<p><b>SHOW VIDEO</b></p> <p><b>Self-completion sheet</b></p>
<p><b>50 mins</b></p>	<p><b>Section 3: deliberate 3 scenarios</b> <i>Aim: to explore levels of severity for a set scenarios to debate customer impacts then arriving at a position of what is acceptable now and in the future for a water company to prepare for</i></p>	<p><b>Context board (10 minutes for each)</b></p> <ul style="list-style-type: none"> <li>• Read sheet individually then group to respond to information: what's new, unexpected, familiar?</li> <li>• What are the impacts that come to mind?</li> <li>• As a group, from what you can glean, how big a risk is [e.g. sewer flooding]</li> </ul> <p><b>Scenario stimulus (5 minutes for each)</b></p> <ul style="list-style-type: none"> <li>• Here are 3 possible scenarios of what could happen in the future – they each relate to [e.g. sewer flooding] but would have different impacts</li> <li>• We all have to weigh up risks we are prepared to take and those that we could not tolerate...which are reasonable levels of risk...and which are intolerable</li> <li>• What would you like to see Wessex doing in relation to planning for a future which could bring more [e.g. sewer flooding]</li> <li>• Where does responsibility lie to manage this particular risk? [probe: companies, regulators, customers, local authorities, businesses etc]</li> </ul>	<p><b>For each:</b> <b>Context sheet (1 per respondent)</b></p> <p><b>Scenarios slide 1</b></p>

		<p><b>Future-proofing strategies (10 minutes for each)</b></p> <ul style="list-style-type: none"> <li>• Now you have to decide which approach Wessex should take: we'll have to debate this with each other</li> <li>• Remember you are representing your towns and villages and the wider community...the choice you make has to be right for the many, not the few...</li> <li>• In a sense, you are deciding what level of risk customers are insuring against...because there are cost implications for each option</li> <li>• Pros and cons of each future-proofing strategy</li> </ul>	<p><b>Scenario slide 2: investment/cost strategies</b></p>
15 mins	Group feedback	<p><b>Each table</b></p> <ul style="list-style-type: none"> <li>• Was it an easy deliberation; did you agree as a table</li> <li>• What is your advice to Wessex Water</li> </ul> <p>How does each table differ... is generation altering response</p>	
20 mins	BREAK		n/a
20 mins	Section 4: deliberate third scenario	As above	
15 mins	Group feedback	As above	
20 mins	<p><b>Section 5: Game and final choices</b></p> <p><i>Aim: to introduce the idea that increased preparation (resilience) will require trade-offs (bill price, effort and/or new laws)</i></p>	<p><b>This will be designed with the materials</b></p> <p><b>Self-completion exercise with trade off element</b></p> <p><b>Focus on balance of responsibilities</b></p> <ul style="list-style-type: none"> <li>• <b>Personal</b></li> <li>• <b>Company</b></li> <li>• <b>Regulator/law</b></li> <li>• <b>Other?</b></li> </ul>	Self-completion
10 mins	<p><b>Section 6: Summary &amp; Close</b></p> <p><i>Aim: to understand how views have changed over course of evening</i></p>	<p><b>Summing up</b></p> <ul style="list-style-type: none"> <li>• How have your views changed?</li> <li>• 3 things you have learned/will tell others</li> <li>• What should WW tell its customers about what it is doing to future-proof</li> </ul>	Post-group completion

Wessex Water - Resilience  
3-hour deliberative event



# Customer & Stakeholder Engagement: Resilience

Proposals for research prepared for Wessex Water

7<sup>th</sup> February 2017



These proposals recommend an approach that will provide Wessex Water with an analysis of how customers expect Wessex Water to plan for future risks that could undermine the resilience of water services. Here we highlight a number of features of this proposal:

## Avoiding assumptions



- We have included a small preliminary element to establish the consumer language around resilience and to pilot the materials for the deliberative events

## Demonstrating iterative planning



- We recommend that Wessex Water documents its expectations for the research outcomes: this will provide a clear analysis of how the engagement has influenced the planning process

## Arriving at clear conclusions



- We outline our approach to addressing the (complex) objectives with customers. The design involves a process of informing followed by deliberation in order to arrive at a set of clear outputs

## Innovation



- We have incorporated the production of a video as part of the stimulus to present customers with a rounded understanding of resilience issues
- We propose to develop a game (described here in outline) to help respondents extend their deliberations to encompass the needs of future generations of water customers

## Collaboration



- This proposal assumes close working with the team at Wessex Water, primarily in the development of stimulus materials.

### Costs and timing:

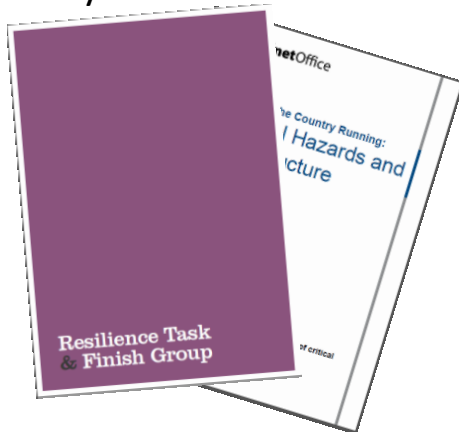
- We provide a breakdown of the fees: the core method as proposed has a fee of **£40,000** ex VAT
- Additional options are also described and are priced separately
- We can complete the core research with domestic customers with initial findings by w/c 3<sup>rd</sup> April (requiring additional time for the optional elements and full reporting)



## Background

Although drought and water resilience have been high on the government and water industry agenda since 2006-7 when water-use restrictions were in place in several parts of England, it has recently taken on a renewed importance and focus. Ofwat now has a duty to promote resilience of water and waste water services (as laid down in the 2014 Water Act); and providing evidence of how companies are ensuring resilience is a core element of the PR19 process.

In 2016 Defra published *Creating a great place for living* and Water UK commissioned the *Water resources long-term planning framework*. These significant studies have highlighted that the issue of resilience of water resources is even more pronounced than had been previously thought, highlighting the need for both partnership working (including with customers) and increased water efficiency.

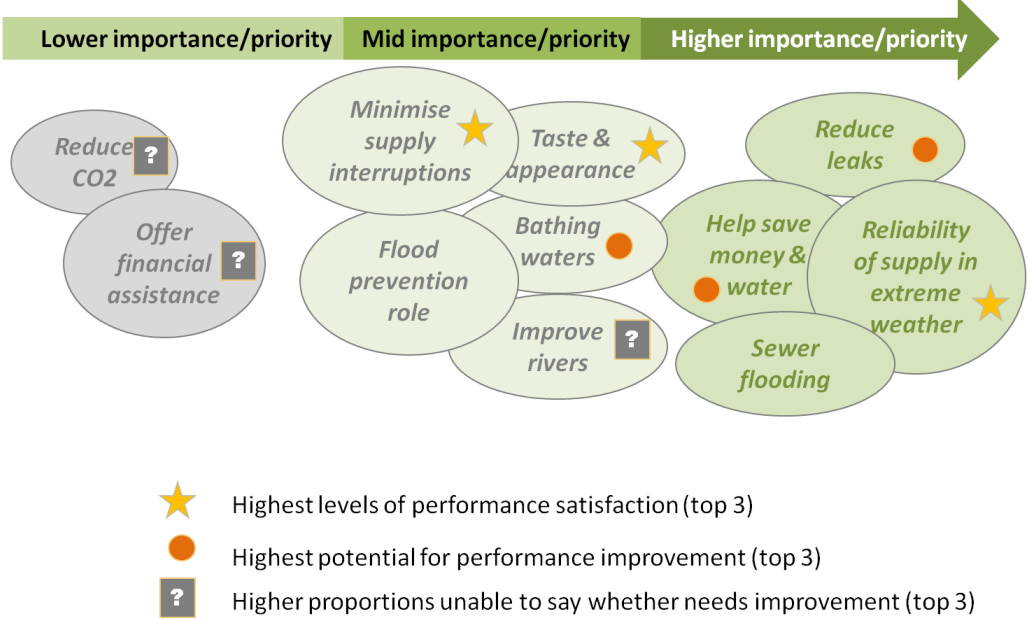


The brief highlights other relevant documents, notably the work of the Resilience Task and Finish Group: an independent panel established to provide guidance to Ofwat and the industry and to inform the resilience policy landscape. A key recommendation is to increase public engagement and education to support the need for ‘softer infrastructure solutions’. Ultimately, through partnership working and enhancing public understanding of the water systems, this report puts the public’s role at the heart of future resilience strategies.

Wessex Water has completed the first phase of its PR19 engagement programme (Customer priorities/SDS research - 2016) and has understood both the current economic mood and service priorities for its customers. This phase covered a very wide range of topics including resilience.

In this broad context, and when customers are ‘uninformed’, future reliability is an expected and important part of what a water company does, but there is very limited comprehension of what this actually involves. Furthermore, very few people have experience of loss of supply or water restrictions making it hard to evaluate the implications and size of this risk. Without the benefit of information, the majority of Wessex Water’s customers are satisfied with the current performance in terms of reliability of supply into the future – with no perceived need for any improvement.

**Summary of ‘uninformed’ priorities showing reliability of supply as important (and perceived to be an area in which Wessex Water performs well).**



This research will spotlight the theme of resilience, encompassing several of the themes that were explored in the priorities research (e.g. sewer flooding, supply interruptions etc.) and provide Wessex Water with customers’ expectations of future plans. Importantly in this research, customers will be helped to give an *informed* viewpoint.

**The business objective for this project is to provide a robust evidence base for Wessex Water to develop its business plan, specifically;**

- To explore customer understanding and expectations of Wessex Water in terms of resilience
- In doing so, to shape the overarching principles for resilience planning
- To inform the development of potential ODIs for resilience

Specific research objectives fall into three areas which will be addressed in the research design and materials:

**To explore customer views on resilience:**

- What do they associate with resilience in the context of a water company?
- What types of resilience are relevant to customers?
- What expectations do they have regarding resilience? (including willingness to pay for resilience strategies)

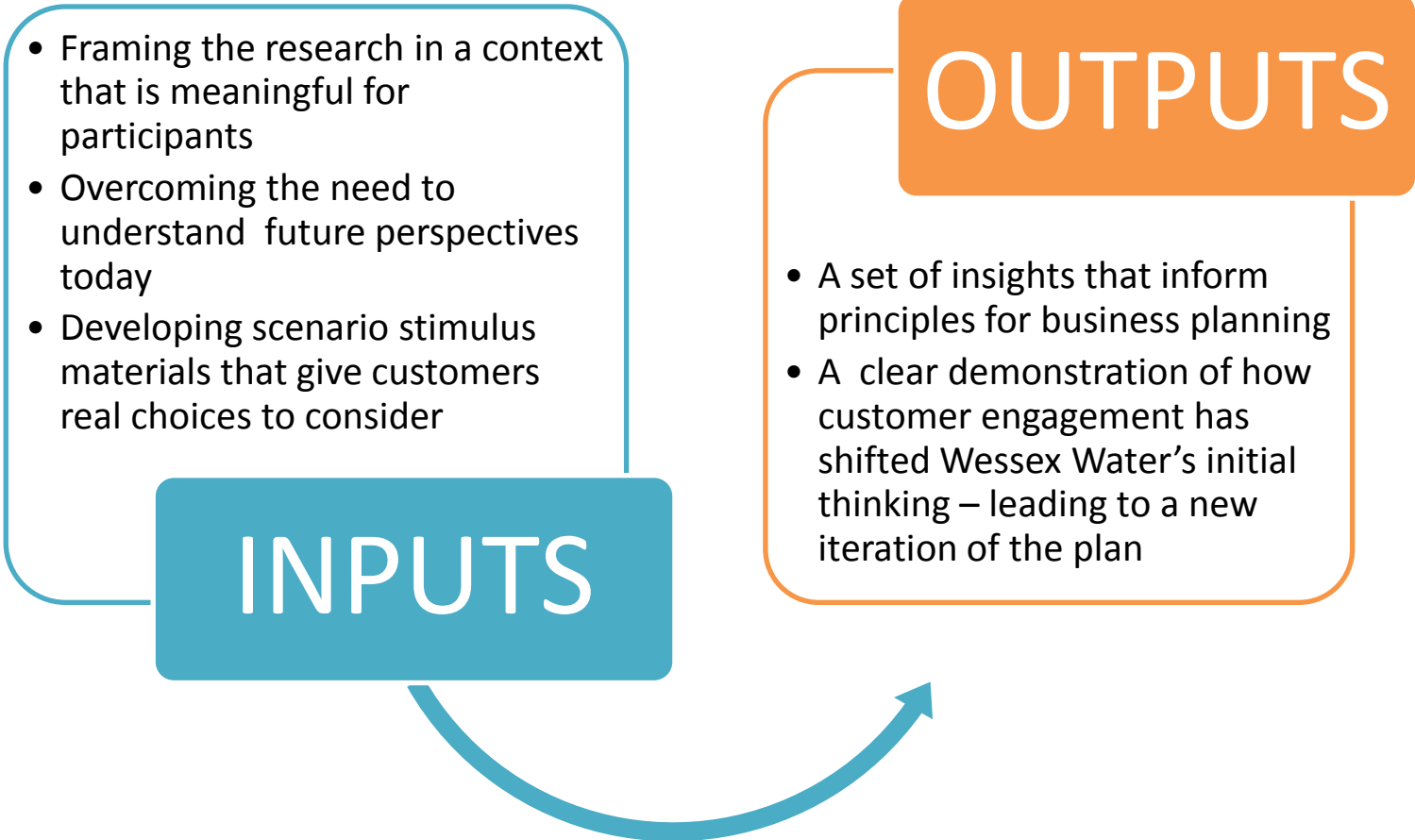
**Explore acceptability of different resilient scenarios:**

- What type of situations should Wessex Water be resilient to in a 10-15 year timeframe
- To prioritise the type of activities (and the investment each would require)
- To identify willingness to pay for resilience strategies once informed

**Identify how to communicate messages relating to resilience:**

- Language and examples that are most helpful for customers
- Principles for communicating risk, future events and mitigation/preparation strategies
- Appropriateness of describing resilience measures to customers

Here we highlight what we consider to be the success factors for this project – and therefore the principles underpinning the design.



This is a complex subject for engagement: customers are being asked to consider events/scenarios that are largely unknown; people find it difficult to weigh up risk (and so resort to heuristics and generalisms in the absence of personal experience); and imagining future circumstances can be abstract. We need to think differently about how to overcome the well-documented challenges of bringing customers into the resilience conversation.

## Framing the research in a context that is meaningful

- We propose that a core piece of video stimulus is developed to support the objectives and make the research meaningful: this will be an engaging ‘video short’ setting the research in context. (We will work with a specialist film maker.)
- Producing the video will involve input from Wessex Water as well as comment from other perspectives e.g. an industry body, a consumer representative body and from water customers themselves. We describe the type of content and editorial style we recommend on p15.

## Overcoming the need to understand future perspectives today...

- Time is abstract and future-gazing even 5 years ahead – let alone 15-20 years ahead – will not result in good evidence: none of us know what our needs and priorities will be at a future stage in our lives.
- Instead we need to put research respondents into the role of providing the citizen’s viewpoint and considering the priorities of others
- This is achieved through the deliberative methodology: presenting customers with conflicting viewpoints to arrive at the best solution for all: now and in the future

## Developing scenarios to give customers real choices

- We have identified four scenarios that will form the basis for different levels of risk. Respondents will be encouraged to consider the direct and indirect impacts on their lives and from this, what level of risk is acceptable for customers
- Importantly, an exercise (or game) will allow respondents to allocate resource (money, effort etc) to build resilience for each scenario. We will design the mechanics of this game and work with Wessex Water to create realistic choices within it

## Insights that inform business planning principles

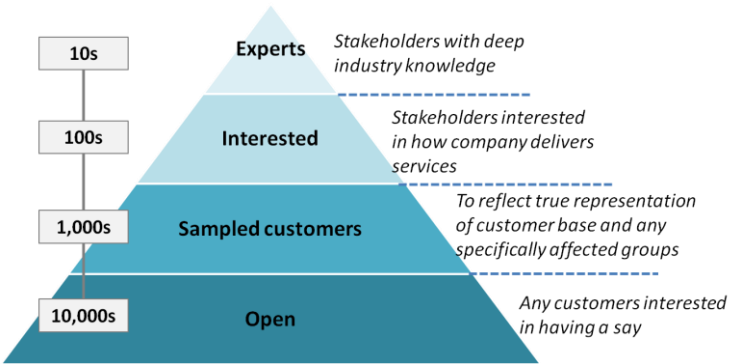
- Our method includes initial exploratory work to ensure we make no assumptions about how customers naturally think and talk about resilience (for instance, we won't be using language such as 'resilience' but observing the language that arises in open conversations). This will inform how resilience is communicated in both engagement and future customer campaigns
- The deliberative events and the exercises within them will be designed to ensure customers are making *real choices* – however difficult - as a means to understand what lies behind customer attitudes

## Demonstrating how customers have shifted initial thinking

- We recommend that Wessex Water sets out some broad assumptions prior to the research commencing ('Assumptions document'). This will provide a point of analysis and inform conclusions about how Wessex Water's starting point has been challenged or confirmed
- We also recommend a follow-up deliberative event (but included as an option) to refine and test the choices as a means to demonstrate how Wessex Water is taking an iterative approach to planning in response to its programme of customer engagement



## Audiences for inclusion in the research



- In Blue Marble’s review of Wessex Water’s PR14 customer engagement, we segmented audiences according to their relationship with the industry and the potential sample sizes appropriate in the context of the ‘universe’ of each.
- For example, industry experts such as civil servants responsible for water policy or heads of industry bodies/regulators are important stakeholders and very few in number. There are many more stakeholders who could be termed interested in Wessex Water’s activities but who are not industry experts e.g. consumer representative bodies, environmental charities, local authorities etc.
- In term of customers, engagement can include representative samples of all or certain types of customers as well as open consultation giving the opportunity for anyone to have their say.



- The emphasis of this research will be **domestic customers**, sampled to ensure that a broad cross section of customers are included. While uninformed initially, respondents will be informed as part of the methodology.
- The sampling will be designed to include seldom heard customers too: this is described on p11
- We have also included the option to include two further audiences:
  - **Non domestic customers:** focusing on businesses where water is critical - therefore likely to be larger organisations
  - **Stakeholders representing consumers:** e.g. CAB, charities supporting the needs of vulnerable groups, environmental charities/NGOs – in other words *interested but not expert stakeholders*
- Our proposal shows both of these additional audiences as optional elements that can either be incorporated into the project timeframe or conducted at a later date
- We have assumed that Wessex Water will be taking account of the views of its ‘expert’ stakeholders in developing its resilience plans i.e. those who understand the environmental, infrastructure or policy impacts via direct engagement (rather than intermediated by a research agency).

## What is the most appropriate methodology



### Deliberative research definition (AQA):

*Deliberative research usually takes the form of an extended workshop, to present a range of information and encouraging differing points of view and perspectives to be presented, before considered decisions are finally sought. It can be a useful approach for policy consultations as it allows the public to be involved in decision-making that incorporates a wide range of viewpoints and ideas.*

- **Qualitative research:** this project requires exploration of ideas; both informing and explaining activities and providing the research environment in which customers can debate and deliberate. We therefore concur that the research should use qualitative methods.
- **Deliberative techniques:** the core purpose of this research is to involve people in decision making. It is not just about understanding customer views and feeding them back – it's about giving customers ownership of the problem and how it should be resolved. Hence the primary method will be deliberative events.
- The design of the events will incorporate the following:
  - Presentation of information from several perspectives (company, industry body, consumer etc.)
  - Wide range of customer types: this helps people think about other points of view
  - Specifically, table groups defined by age: different age cohorts will feedback to their younger/older counterparts
  - Stimulus materials that enable groups to deliberate different options

## Ensuring research stands up to external scrutiny



- The research design will be robust in terms of sample design (qualitatively, the emphasis is on ensuring we have a good representation of customers – rather than pure numbers)
- We recommend two features of the design to support Wessex Water's reporting of its engagement - and importantly how the business plan is being shaped by customers:
  - Providing clear (and real) options for customers to deliberate
  - Convening an (optional) second stage deliberative event with refined stimulus: this will be used to demonstrate the iterative nature of the planning process

In line with our paper (July 2016) on how to include vulnerable/seldom heard customers we recommend the following approaches:

## Seldom heard



- **Economically vulnerable:** customers falling into this category are critical to the business plan process however we know that their voices can get lost in larger deliberative events. Hence we propose to canvass their views in separate sessions – a more sensitive approach which will result in deeper understanding of the needs and expectations of the poorest customers
- **Isolation/connectivity** (e.g. no digital access, living in rural/remote communities/living alone): we can incorporate customers who fall into this category within the main deliberative events by setting minimum quotas for customers e.g. with no internet – as well as conducting a proportion of the fieldwork in more rural locations
- **Disability/health:** the recruitment process will include minimum quotas of customers from households where disability or chronic illness is present.
  - A full exploration of resilience from the perspective of seldom heard customers across a range of circumstances will be achieved through interviews with stakeholders who represent consumer interests

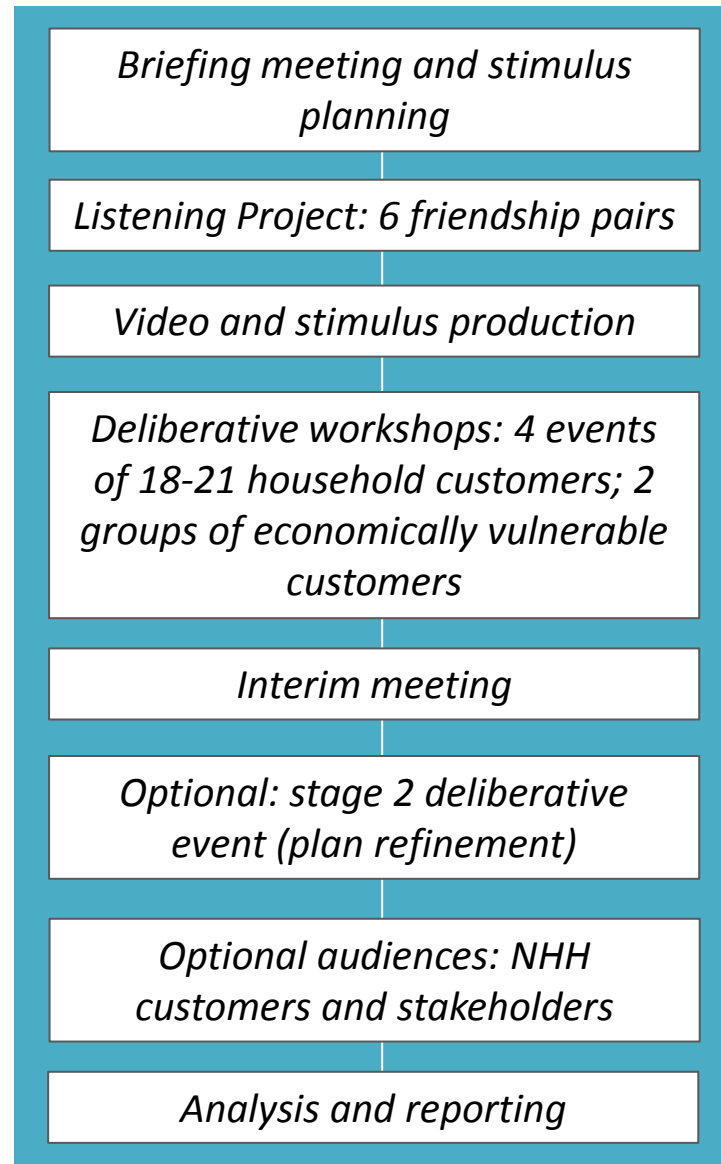
In our previous work (PR14 Priorities) Wessex Water executives participated in the events both by presenting information and answering questions throughout the evenings. This worked very well, however for this project we aim to present customers with a wider set of viewpoints and therefore we propose to develop a video that incorporates commentary from e.g. academics and industry bodies, customers and Wessex Water.

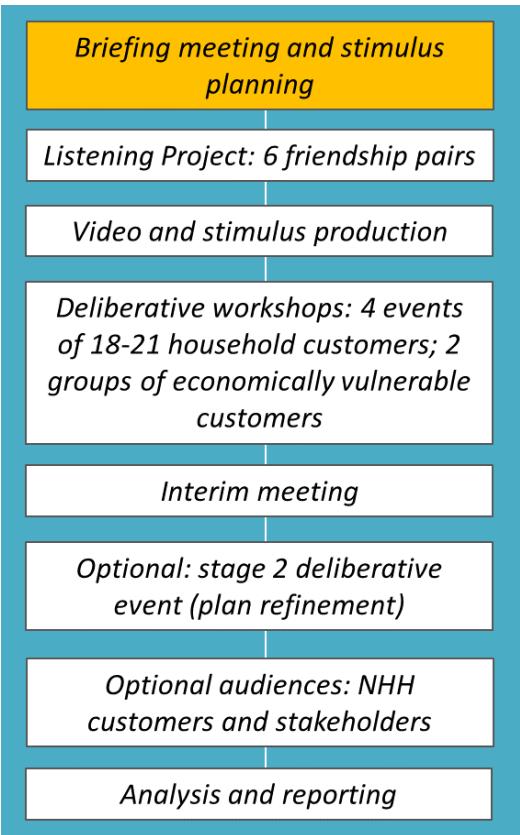
## Client participation



- The video will be produced by Blue Marble to inform respondents of a rounded set of viewpoints
- The use of this and other stimulus will take the pressure off Wessex Water's diaries (6+ evenings of fieldwork are planned)
- We welcome Wessex Water staff participating as observers and hope that this will include thanking participants and answering any questions at the end of the sessions (this has all the positive benefits of customers feeling they have been heard, without any risk that the research is being led by meeting senior executives from the client team.)

The diagram below outlines the overall structure of the proposed workplan. Each of these is discussed in turn on the following pages.



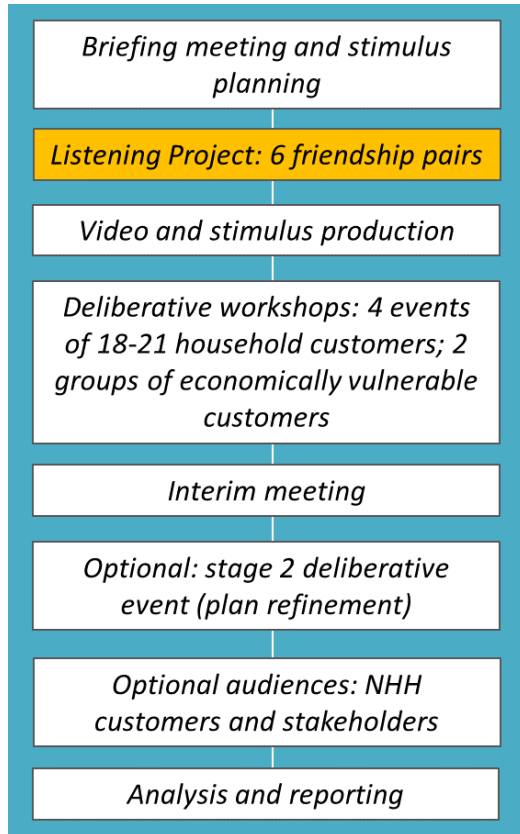


- We propose a working briefing meeting that should involve the key internal stakeholders
- This meeting will be pivotal for a number of reasons:
  - For the Blue Marble research team to understand the brief in detail and the decisions Wessex Water will need to take following the research
  - To collaborate on the design of the stimulus materials
  - To agree project practicalities

**Briefing meeting agenda:**

- Project background and context, review of its purpose for Wessex Water and what decisions the outcomes need to enable
- Review project objectives and scope
- Review and revise proposed sample structures
- Agree project plan and responsibilities (particularly when involvement needed from Wessex Water)
- Wessex Water to set out assumptions/draft plan to provide a framework for analysis

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10



We have proposed that the project kicks off with a small-scale piece of qualitative research that serves three purposes:

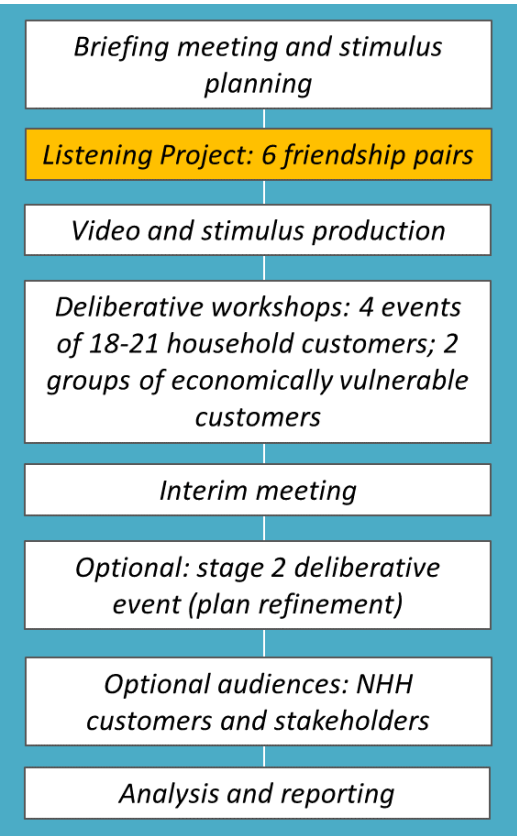
1. To ascertain the use of language used by everyday customers in exploring and understanding issues relating to ‘resilience’ – the learning from which will be fed in to the main stage fieldwork stimulus
2. To explore comprehension and interpretation of a range of scenarios, that will then be developed in greater detail for the main stage of fieldwork
3. To provide an opportunity to take video-footage, that will be used to create a short piece of video stimulus with the intention of presenting a diverse range of views and considerations to deliberate in the main stage of fieldwork

We have recommended conducting interviews with 6 friendship (or family) pairings for this stage of the project – and draw on the method of ‘The Listening Project’ (unstructured discussions between participants with very little moderator intervention):

- Friendship/ family pairings provide the time and space to explore individuals’ understanding and interpretation of the issues or scenarios they are presented with whilst providing the reassurance of the social context and presence of a friend.
- They also present the perfect opportunity to ask participants to put the information presented into their own words which is a powerful method for uncovering deeper understanding of the materials
- We propose to stimulate discussion between the pairs with light-weight stimulus – for instance, leaving the pair to discuss “What will life be like in 25 years time?”, “To what extent should companies be planning ahead?”, “Front page headline: water rationing to be implemented if no rainfall in the next fortnight” as well as basic versions of scenario stimulus (e.g. presenting a scenario with 4 options of severity)

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10





We recommend that the paired depths need to ensure representation of different social grades and/or educational achievement - and different age groups, but aside from this can be kept relatively loose. (A more robust and representative sample structure becomes more relevant in the main stage of fieldwork).

We propose to structure the sample as follows. This structure means we can be flexible in allowing friendship or family pairings.

Each paired interview will last approximately 1 hour.

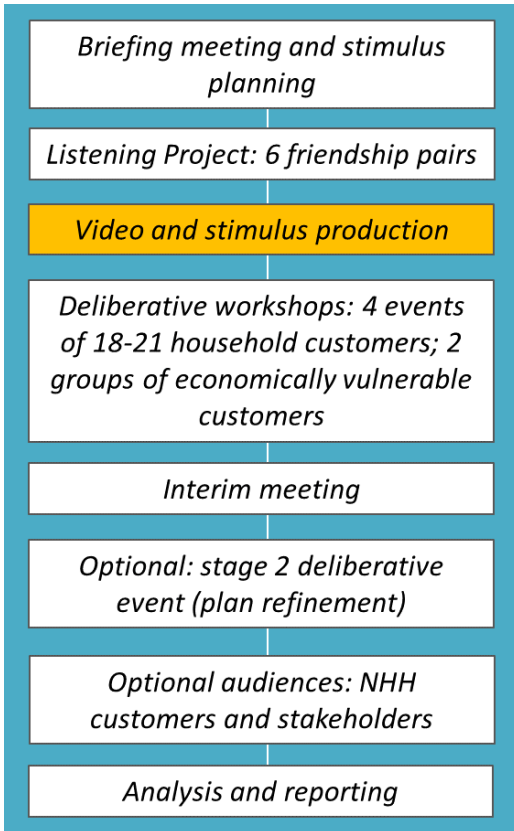
Pair	SEG	Age
1	Min 1 = A	
2	Min 1 = B	
3	Min 1 = C1	Min 3 = 25-40
4	Min 1 = C2	Min 3 = 41-55
5	Min 1 = D	Min 3 = 56-75
6	Min 1 = E	

**In addition:**

All participants must be water bill payers  
 Minimum of 5 to be on a water meter.

**Venue:**

These interviews will take place either in a viewing facility or with video link up to an adjacent room. This allows the moderator to observe the initial part of the conversation (and client viewing will also be possible)



Because of the nature of the research, it will be imperative that we prepare a strong set of materials to stimulate and generate discussions – these will play an important role in the deliberative nature of the sessions by:

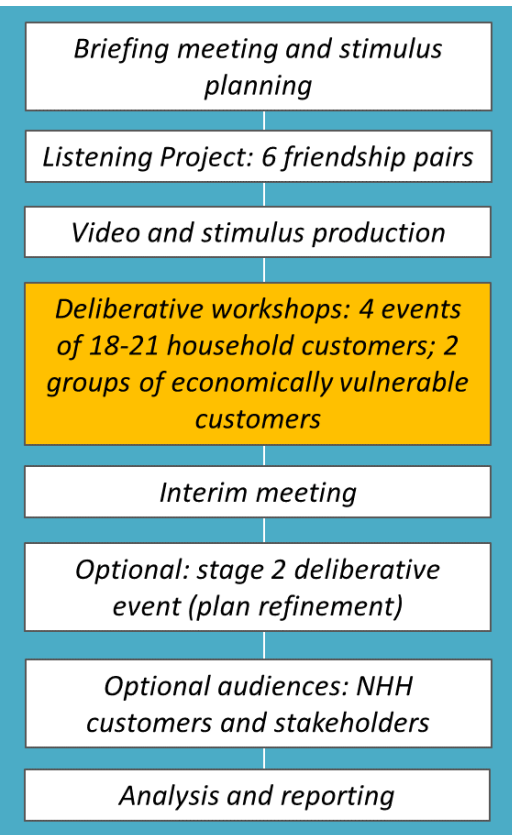
- **Making it real** – bringing the issues and potential events to life in the minds of participants
- **Informing** participants of the background to the issues, the options and trade-offs that they need to consider in deciding the best way forward
- **Presenting a diverse range** of different people who have a stake in the decisions to be made – enabling participants to reflect on the broader needs of others and not just their own perspective

### Video production

We plan to produce a short video containing clips from a range of different stakeholders used to inform customers of the need for the research and the complexity of what they are being asked to consider. We will agree an outline script with Wessex Water and propose the content includes short clips on:

- Why is resilience an issue (ideally voiced by Jacob Tomkins of the Resilience Task & Finish Group)
- Population projections and implications (perhaps Penny Johnes from the Catchment Management Partnership acting as an independent expert/academic)
- Environmental aspects of managing water – EA representative in the Wessex area?
- Why is Wessex involving customers? (Sue Lindsay)
- Regulatory context (Phil Wickens)
- Managing demand (Amy Shaw)
- Customers imagining scenarios (edited clips from the Listening Project) - to illustrate that it is very hard to imagine what the world might be like, that people have differing needs and perspectives

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10



As per our research considerations, we recommend a deliberative research approach that provides customers with the opportunity to act as your decision-makers. This requires participants to be equipped with the tools they need to take a citizen’s or societal view of the issues they are being presented with – via an in-depth and prolonged consideration of the issues, options and viewpoints of others. However, there are also pragmatic research considerations to take in to account in the design of the main-stage of fieldwork:

- Bringing together a larger number of customers in one session provides the opportunity to share different viewpoints. However, we also need to ensure that these sessions are set-up in a way that makes customers feel comfortable in exchanging their views and are not inhibited by others
- We need to ensure good geographical coverage of the Wessex Water region

As such, we recommend the following:

- Convening **4 x medium-sized workshops of 18-21 participants**, across 4 different locations in the Wessex Water region - and to include a coastal region which may have a different perspective on resilience issues. Each **lasting 3 hours**
- Locations selected to cover a mixture of rural and urban areas
- The workshop events will be diverse both in terms of social grade and age-group: each workshop will consist of three tables, each representing a different age-group (younger, middle, older) – whose views will be exchanged throughout the sessions
- 2 separate sessions with people in economic vulnerability (social grade E) to ensure the voices of these more ‘seldom heard’ individuals are given sufficient coverage. We recommend these sessions are slightly truncated in timing (2 hour extended groups) to account for the fact there will be less deliberation between different groups at the session

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10

## 3 hour workshops

### Salisbury (inc.rural )

ABC1C2D

6-7 x 25-40 years

6-7 x 41-55 years

6-7 x 56-75 years

### Bath (urban)

ABC1C2D

6-7 x 25-40 years

6-7 x 41-55 years

6-7 x 56-75 years

### Yeovil (rural)

ABC1C2D

6-7 x 25-40 years

6-7 x 41-55 years

6-7 x 56-75 years

### Poole (urban, coastal)

ABC1C2D

6-7 x 25-40 years

6-7 x 41-55 years

6-7 x 56-75 years



## 2 hour extended groups

### Poole

Economically vulnerable (E)

6-7 x <45 years

### Bath

Economically vulnerable (E)

6-7 x >45 years

### All participants:

- All water bill payers

### Within each workshop:

- Even mix of males and females
- Minimum of 8 on a water meter

### Across the sample

- Mix of participants from households in rural/ urban areas
- Min 10 from households with no internet access (reflecting 15% of population of bill payers without - this is heavily skewed to older and lower SEG)
- Min 3 individuals with a physical impairment
- Min 3 participants who have recently experienced personal crisis/difficult life event

### Community venues

We propose to conduct the groups in community venues (village halls, Civic centres, leisure centres) rather than corporate hotel settings as we find this reinforces the idea of local consultation and sets the context for representing the wider community view.

# Recruitment and moderation

Blue Marble has a wealth of experience in conducting qualitative research and understands the challenges that successful recruitment involves. This process would be undertaken in collaboration with our partner BEAM who have years of experience recruiting qualitative groups.

- To aid the process of recruitment, in consultation with Wessex Water, we will design a detailed recruitment questionnaire/ screener to ensure a spread of individuals are recruited in accordance with the sample structure.
- As part of this we will ensure that participants are provided with sufficient information about what to expect as a participant of the project, being offered reassurances where necessary. As a thank you for their participation they will be paid on the evening of the group; this incentive helps to reduce last minute drop outs.
- When choosing locations and venues we will ensure they are easy to access (e.g. available parking, good transport links, disabled access) and to be well known venues within the community. This will provide an extra layer of familiarity and reassurance to participants.
- 21 respondents will be recruited for each event to ensure a minimum of 18 attend. Similarly, 7 financially vulnerable customers will be recruited for 6 to attend. If we have a low turnout of less than 88 out of our target of 98 respondents (i.e. 10% down) we will replace with an additional group discussion and discuss the composition of this group with Wessex Water based on attendance



**With regards to moderation, we will implement a number of things to ensure successful and quality groups are run**

- All researchers working on this project are experienced moderators and known to Wessex Water
- A detailed discussion guide and flow to be developed and signed off by Wessex Water. All moderators will follow this to ensure consistency across the groups
- All groups will be digitally recorded for use in analysis – we don't rely on memory, we always return to the data!



The following is a very brief outline of each deliberative event – designed to illustrate the shape of the sessions and how the 3 hours will be used. We will develop a full design on commission and in consultation with Wessex Water. Stimulus production will be a key part of the design as there will be supporting information produced for each of the scenarios.

Timing	Activity
	Arrival & Registration
5 minutes	Welcome & introduction to the workshop
10 minutes	<b>Section 1: ice breaker – projective time line exercise</b> <i>Aim: to contextualise deliberations as long term decision making – consulting you on decisions affecting future customers</i>
15 minutes	<b>Section 2: Video</b> <i>Aim: to set up the themes for deliberation – and to show different viewpoints</i>
50 minutes	<b>Section 3: deliberate 2 scenarios</b> <i>Aim: to explore levels of severity for 2 scenarios to debate customer impacts then arriving at a position of what is acceptable now and in the future for a water company to prepare for</i>
15 minutes	<b>Group feedback</b>
20 minutes	<b>BREAK</b>
20 minutes	<b>Section 4: deliberate 1 further scenario</b> <i>Aim: as before</i>
15 minutes	<b>Group feedback</b>
20 minutes	<b>Section 5: Game and final choices</b> <i>Aim: to introduce the idea that increased preparation (resilience) will require trade offs (bill price, effort and/or new laws)</i>
10 minutes	<b>Section 6: Summary &amp; Close</b> <i>Aim: to close the discussion and agree or summarise where there is consensus/disagreement</i>
180 minutes	



- Our recommendation is to focus on 4 scenarios reflecting risk to the service because of *drought; flood; cyber crime* and the *increasing demands* on the system. (Each event allows time to cover 3 scenarios hence we will need to rotate.)
- For each, we will develop different levels of severity (example shown overleaf for flood scenario).
- By exploring the different levels of likelihood and impact, customers can anticipate how their life – and wider society – would be impacted and therefore what they expect from their water company.
- We do not propose to ask customers to directly evaluate the potential resilience measures as these are clearly internal metrics. However, they may form part of the stimulus to explain the types of activities Wessex Water would employ to increase preparation/reduce risk.



Drought



Flood



Cyber crime



Increasing demand  
(population)

Each scenario will be introduced with a **‘current context’** stimulus board to show Wessex Water’s current performance/commercial context for each scenario – and where available to include comparisons with other water companies. We will need to work closely with the Wessex team to develop this material:

- Incidences in e.g. last 10 years and performance metrics where appropriate (in context of other water companies)
- Trend data and future projection data for UK and Wessex Water region
- Investment and other activities to improve performance (including % of bill spent on mitigation/preparation)
- Comparison: indications showing whether Wessex Water region has lower/same/higher risks than other regions; indications whether its investment is lower/same/higher than other water companies

## 1

### Introduce **CURRENT CONTEXT STIMULUS** for each scenario

- Response to current context
- Perceive level of risk

## 2

### Introduce **SCENARIO STIMULUS:**

- Perceived personal impact of each event
- Perceived impact for others in society e.g. vulnerable groups and businesses
- Perceived implications for future customers
- Expectations of Wessex Water

## 3

### **STIMULUS: POTENTIAL MITIGATION/PREPARATION STRATEGIES TO IMPROVE RESILIENCE (WITH COST INDICATIONS)**

#### **Deliberation:**

1. Decide what event type should water companies prepare for?
2. Decide which strategies you support?
3. Decide which type of events customers should be prepared to contribute to (via bills or behaviour change)

FLOOD SCENARIO	High risk   Low impact (Probable)	Medium risk   Medium impact (Possible)	Low risk   High impact (Unlikely)	Extraordinary
EVENT	1 in 10 year major rainfall event	1 in 50 year major rainfall event	1 in 100 year major rainfall event	Terrorism: sewer system rendered unusable
IMPACT FOR WESSEX WATER	Increased incidence of CSO spills	Sewer system overwhelmed	Treatment works flooded: xxx homes without water services	Urgent rebuilding of infrastructure
IMPACT FOR CUSTOMERS	x days when popular beaches unsafe for bathing	xxx homes experience internal sewer flooding	xxx homes without water services Xxx homes flooded	xxx households evacuated for x days/weeks
IMPACT FOR ENVIRONMENT	Temporary low water quality metrics	Low: cleaning and repairs	High: cleaning and repairs	High: cleaning and repairs
IMPACT FOR ECONOMY/ SOCIETY	Minimal Some tourist areas affected	Low	Significant: Health/mental health impacts Insurance and repairs	Significant: loss of life, homes, businesses Insurance and repair costs

## 4

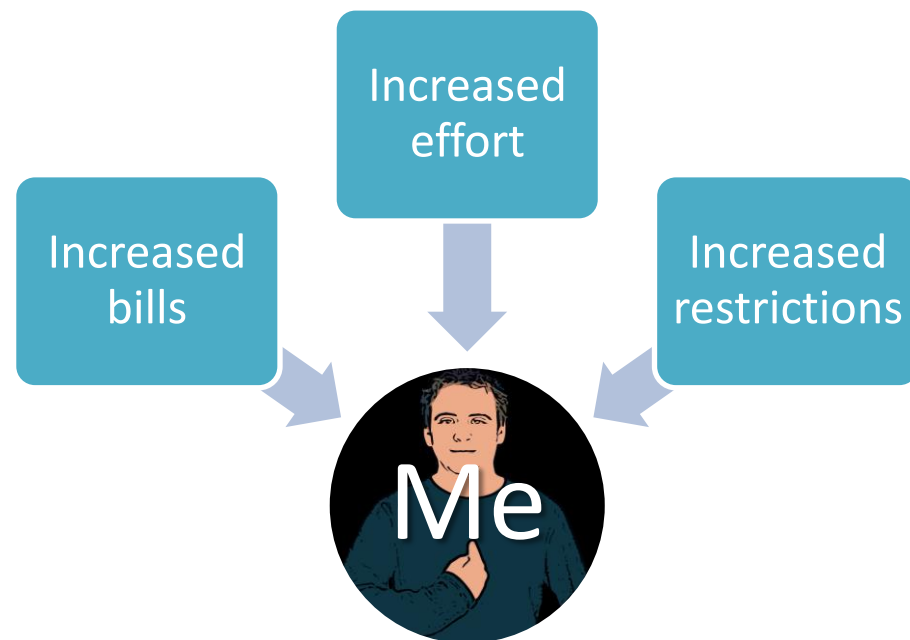
### Once all scenarios discussed: introduce **GAME STIMULUS:**

- Game used to trade off choices and consider future customer needs
- Example given on next slides

# Game to introduce trade offs and generational

We propose to develop a game that explores the types of trade offs customers are prepared to make to secure a more resilient water service.

The aim of the game will be for the customer to decide how they want to deploy resources to ensure an acceptable level of risk is achieved. The game can include different types of resilience strategies e.g. increasing bills to enable companies to invest in better resilience; changing behaviour to reduce pressure on the system and/or be personally prepared; or to accept new laws or restrictions as risks increase.

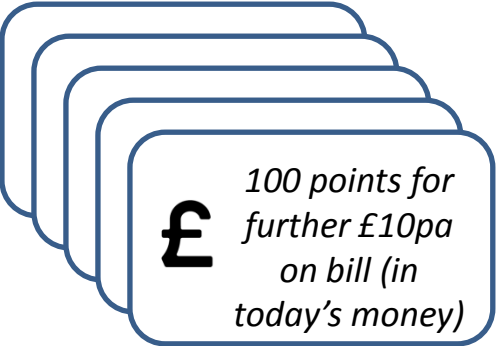


We envisage giving customers points that they can spend to achieve acceptable levels of risk. Clearly we will need to establish the principles of the game with the Wessex Water team but envisage for example that points will have different values e.g.

- points relating to increased bills will buy more resilience than points related to changing behaviour
- the number of points needed to achieve resilience today increases to achieve the same level of resilience in 10 years/20 years and so on

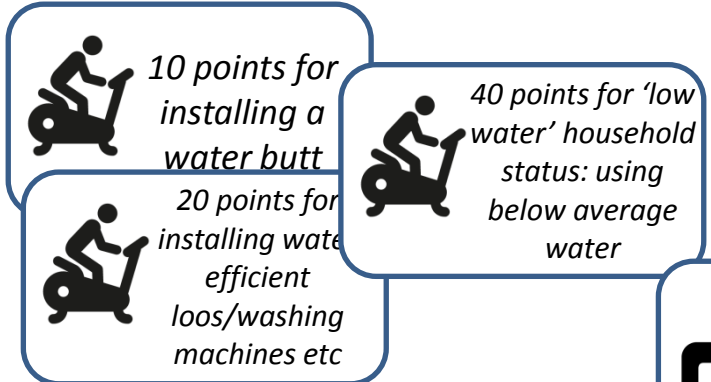
## Increased bills

500 points = Extra money I am prepared to pay for future-proofing



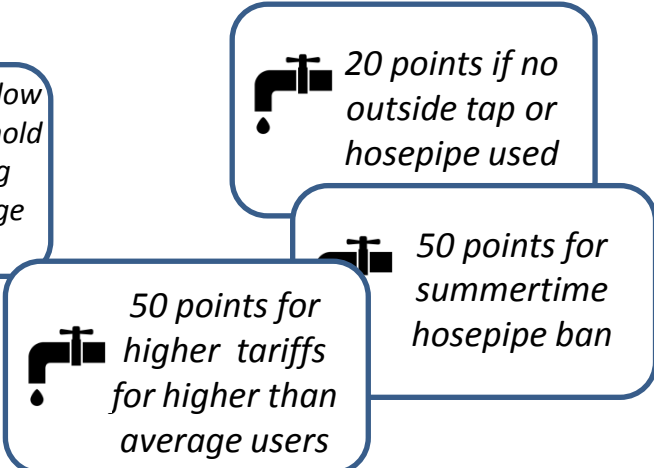
## Increased effort

100 points = Extra effort I am prepared to make to use less water



## Increased restrictions

200 points = Restrictions I am happy to accept e.g. banning types of water use

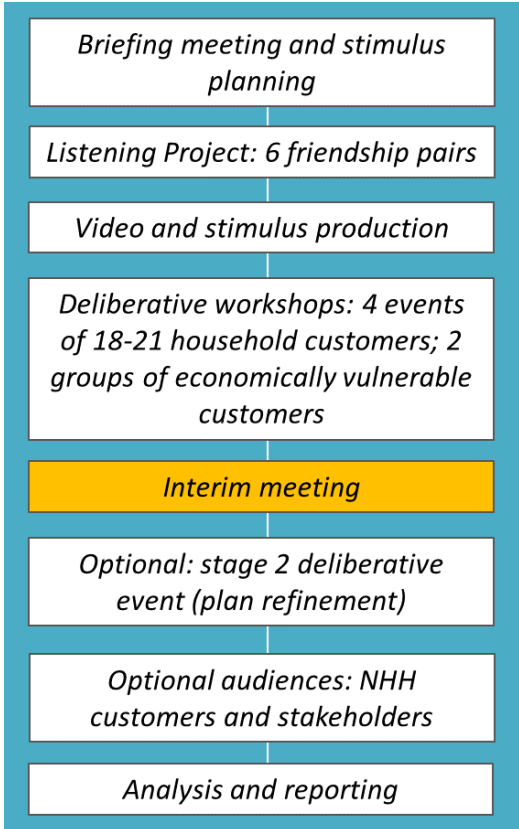


Customers decide how they would like to deploy the resources they have to meet their resilience needs



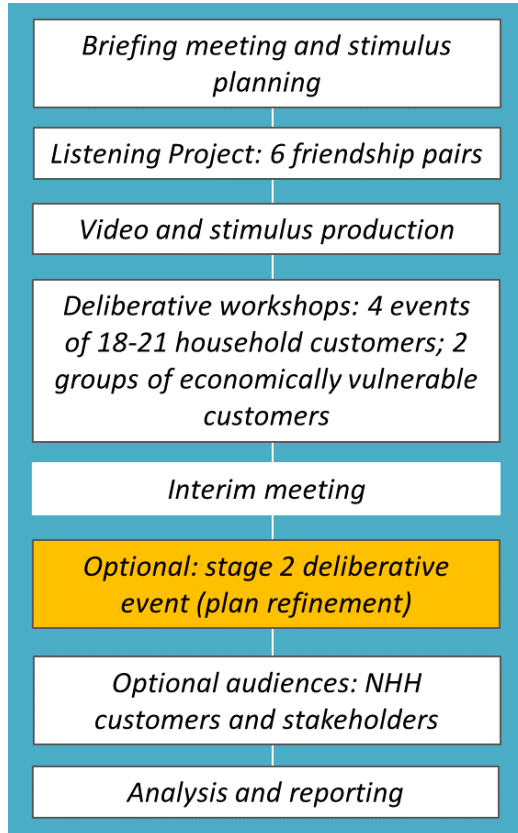
How many points you need to spend to achieve acceptable service from Wessex Water

<b>Extraordinary</b>	200 points	300 points	400 points
<b>Low risk   High impact</b>	150 points	225 points	300 points
<b>Medium risk   Med impact</b>	100 points	150 points	200 points
<b>High Risk   Low impact</b>	50 points	75 points	100 points
	<b>TODAY</b>	<b>2020-2025</b>	<b>2026-2036</b>



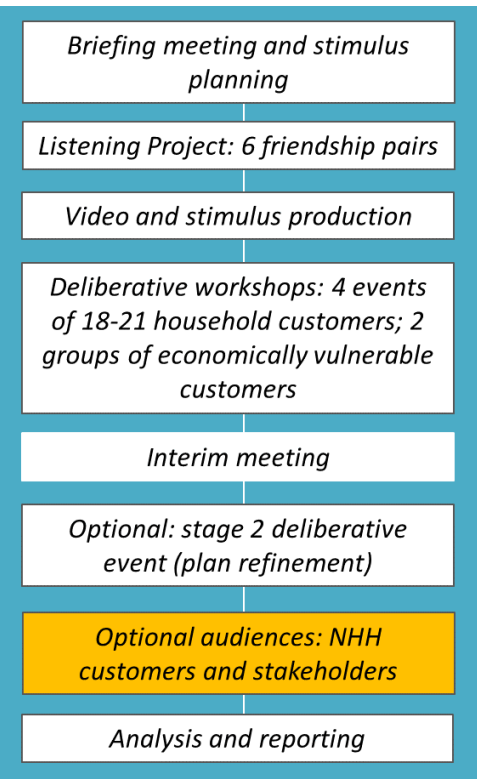
- We propose an interim meeting to discuss the initial findings of the deliberative events
- Assuming that either of the optional research elements are commissioned, the purpose of this meeting would be to reframe the stimulus materials
  - We would use the ‘Assumptions document’ as the starting point to conclude where the plan will need to move to meet customer expectations
  - We will advise on stimulus revisions for the following research elements
  - We will agree on the sampling and location strategy for the further deliberative event
- NB if the optional elements are not undertaken at this time we will use the meeting as sharing topline findings prior to the formal analysis process.

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10



- The purpose of this additional event will be to test whether the refined stimulus materials result in a strong consensus amongst customers – providing evidence that learning from the first stage has had a tangible impact on the planning process
- Decisions about the sample and location will be made with the Wessex team (however we anticipate that once again the event should include a broad representation of customers)
- Costs have been provided based on the same assumptions as the first stage deliberative events
- This fieldwork will require extending the project beyond Q1 (as shown in the timetable on p28)





There would be value in including the views of non-household customers and stakeholders as part of this project. We would look to discuss the timing of these elements as they could run alongside the initial deliberative events or sit within the second (refinement) phase.

### Non-household customers

- We propose to concentrate the focus on businesses for whom water is integral to processing/cleaning/animal welfare etc. as this will bring a distinctly different perspective from the household customer work
- We propose face to face depth interviews at their place of work. This will allow us to work through stimulus material while holding the meeting on site provides deeper insight about what the future scenarios could actually mean in practice
- Discussion guides and stimulus materials would be adapted to this audience. We also anticipate asking these participants to view a link of the video as preparation for the interview.

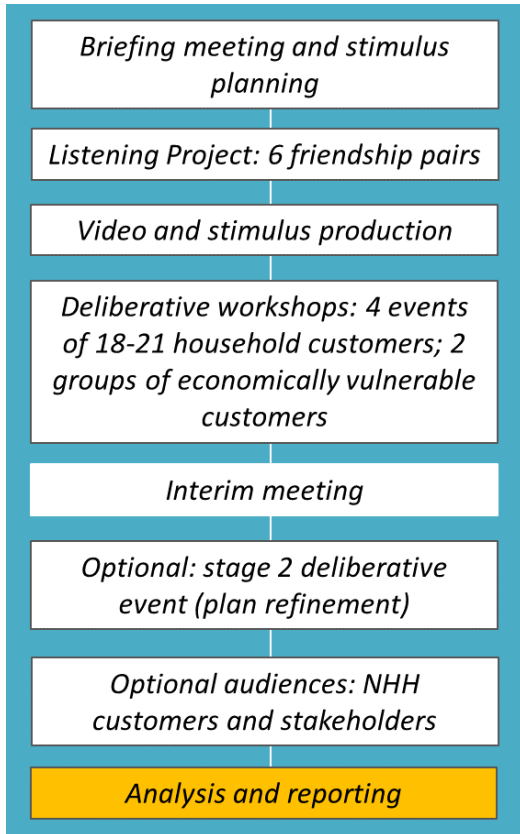
### Proposed non-household sample

<i>Spend £5-£15k; water integral to business/significant cost to business e.g. hospitality, leisure centres, sports clubs, garages, light manufacturing, agriculture</i>	4 depth interviews
<i>Spend £15k-£100; water integral to business operation e.g. leisure and hospitality, healthcare, entertainment, manufacturing, education, heavy industry</i>	4 depth interviews

### Stakeholders

- As discussed, we envisage convening ‘interested’ stakeholder groups to participate in a similar process that customers experience in the deliberative events
- Our costs assume that Wessex Water would invite its regional stakeholders to attend a 2 hour meeting held at its offices
- Blue Marble would plan, facilitate and analyse the sessions, incorporating the stakeholder view into the full research analysis.





## Thematic framework analysis

When analysing qualitative data we take a structured approach, based on the principles of thematic framework analysis. This will be particularly important given the large numbers of customers involved in the workshops.

- All roundtable discussions will be digitally recorded and each moderator will make notes following each event based on these recordings;
- The researchers will develop an analysis grid based on the discussion guide for the deliberative events, covering the key topics;
- Using this analysis grid, each moderator will go through their notes and transcripts manually noting key themes, issues and patterns for each topic area, and identifying key quotations;
- Each researcher will then begin to develop their own overall hypotheses;
- The researchers come together for a brainstorming session to compare key findings, hypotheses, thoughts, and ideas and develop conclusions and recommendations;
- Each researcher will return to their data to ‘test out’ or validate the conclusions and recommendations developed as a result of the brainstorming session.

## Reporting

We will prepare two documents as outputs of the research:

- A slide deck (in PowerPoint) accompanied by a face to face debrief – this will be developed so that it can also act as a stand-alone report of the research findings
- A written executive summary

Wk1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10

# Timetable

The table below provides an outline schedule: a more detailed timetable (including sign-off dates) will be provided once commissioned. We are happy to discuss the timescales and can be flexible about making necessary adjustments to the timetable to meet your internal deadlines.

			February 2017			March 2017				April 2017				May	
			1	2	3	4	5	6	7	8	9	10	11	12	13
	BM	WW	6 <sup>th</sup>	13 <sup>th</sup>	20 <sup>th</sup>	27 <sup>th</sup>	6 <sup>th</sup>	13 <sup>th</sup>	20 <sup>th</sup>	3 <sup>rd</sup>	10 <sup>th</sup>	17 <sup>th</sup>	24 <sup>th</sup>	1 <sup>st</sup>	8 <sup>th</sup>
Project commissioned	✓														
Briefing meeting with Wessex Water	✓	✓													
Set up friendship paired depth interviews (sign off screener, guide etc)	✓	✓													
Friendship pairs – pilot Brief video	✓	✓													
Video production & sign off Preparation of deliberative guides, stimulus	✓	✓													
Deliberative fieldwork	✓														
Interim meeting to discuss findings	✓	✓													
Analysis and reporting	✓														
<b>Optional audiences</b>															
NHH and stakeholder fieldwork	✓														
Deliberative event	✓														
Analysis and reporting	✓														



# Truth.



*“We'd like to confirm, from the crew of Apollo 17, that the world is round.”*

**Eugene Cernan,  
Commander**

## Contact

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