

# Customer engagement programme 2016

Scottish Water

Prepared for Stuart Edgar & Louise Bannerman

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# BACKGROUND AND OBJECTIVES

To understand what the term 'Resilience' and 'Resilience of Service' means to customers

How Scottish Water should communicate matters of resilience to customers

## Putting the customer first

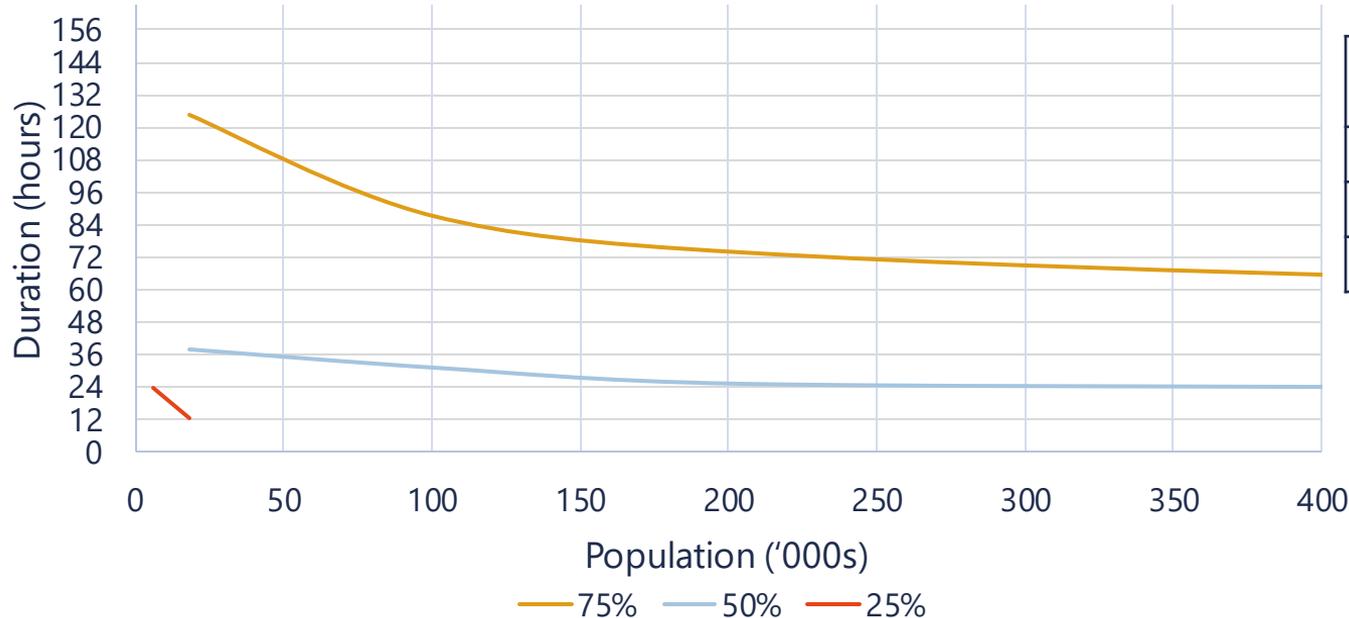
- The customer engagement programme aims to deliver a definitive view of what customers want from the services Scottish Water deliver
- It is a vital research project, feeding into 2015-21 business planning and strategic projections to 2040
- This project explored perceptions of resilience amongst domestic and business customers, exploring:
  - Interruptions to water supply
  - Water quality issues
  - Surface water flooding
- A key requirement of the research was to develop a model to understand **how domestic customers would cope in the event of a water supply interruption** - this report showcases a model trading-off duration size of area affected
- Today will focus on **interruptions to supply** – findings on quality and surface water will be shared at a later date
- We will focus mainly on **domestic customers**



# OUR GOAL: GENERATING INDIFFERENCE CURVES

Developing a model trading-off duration and size of area affected to help SW investment decisions

**Based on advice from our statistician, analysis is based on a coping level of 50% - beyond this threshold only a minority of customers say they would be able to cope. This provides a robust dataset from which to visualise the trade off**



Can't cope level	5 mile radius	24 hour duration
25%	N/A	N/A
50%	25.0 hrs	7.4 miles
75%	73.4 hrs	N/A

# METHODOLOGY OVERVIEW

An in depth research programme blending qualitative and quantitative methods

## 1. Workshops with domestic customers

**What:** 6 x 1.5 hour workshops with domestic customers

**Where:** Glasgow, Perth and Elgin

**Who:** Mix of gender, life stage and SEG, property ages and types

## 2. Tele-depths with seldom heard customers

**What:** 12 x 45 minute interview with seldom heard customers

**Where:** Across Scotland

**Who:** Those with disabilities, visual impairments, financially restricted and future customers

## 3. Tele-depths with businesses

**What:** 12 x 45 minute interview with businesses

**Where:** Across Scotland

**Who:** mix of business sizes, industries and core functions and reliance level on water

## 4. Online survey with domestic customers

10 minute online survey with a nationally representative sample of 1000 Scottish adults

- Quantifying reactions to an interruption event
- Trade off exercise to generate indifference curves for resilience

## 5. CATI survey with businesses

10 minute CATI survey with a nationally representative sample of 300 Scottish businesses

- Robust understanding of attitudes and behaviours
- Quantifying reactions to an interruption event

April 2016

June – July 2016

# Surface water & water quality overview

## Surface water

- Of all the scenarios people **fear internal home flooding** the most – this was the worst case scenario in terms of long term impact, likely damage and stress
- The **media has educated** the general public about its increasing prevalence and impact
- There was limited awareness/understanding of **SUDS**: customers were open/positive once they developed an understanding
- SUDS should be aesthetically pleasing and fit closely with the surrounding environment
- There was limited appetite for making personal sacrifices or installing mitigation schemes on your own property

## Water quality

- Water Quality events raised more serious concerns than interruptions to supply – **contamination sources** and the long term **health implications** drive concern
- Respondents with children had concerns over their children drinking water when out of eye sight and the associated health implications
- Customers want to know how the situation has come about rather than a scientific explanation of what is occurring within the water supply
- A large scale hydrocarbon quality event was perceived as the most severe scenario; boil notices were perceived to be least severe



DOMESTIC CUSTOMERS

# Summary of qualitative findings

# RESPONSIBILITIES & IMPORTANCE

Once they have thought about it, customers have a good grasp of Scottish Water's responsibilities - their own responsibilities are more ambiguous

## SCOTTISH WATER RESPONSIBILITIES

Once they had thought it through, most customers had a good grasp of what SW's responsibilities were

### Spontaneous impressions included:

- / Providing safe, clean water
- / Taking away sewage

Most important

- 
- / Maintaining the infrastructure / network / water cycle

### Limited spontaneous mentions of:

- / Flooding & reservoirs
- / Environmental responsibilities
- / Removing toxins

Communication is the least important responsibility but priorities change when problems occur (e.g. interruption)

Younger & lower SEG customers have more limited awareness of responsibilities

## HOMEOWNER RESPONSIBILITIES

Customers had limited knowledge / awareness of householder responsibilities

### Most mentioned actions included:

- / Managing what goes down drains
- / Not wasting water
- / Very limited awareness of personal responsibilities relating to pipework / drainage boundaries



Widespread awareness of advertising on what not to put down drains informed customers of their responsibility and some claimed it changed their behaviour



# SCENARIO VARIABLES & PERCEIVED SEVERITY

Scenarios that impact 'me' are considered most severe - frequency and duration are most important factors

LESS IMPACT	GREATEST IMPACT ON PERCEIVED SEVERITY	
SIZE OF AREA AFFECTED	DURATION	FREQUENCY
<ul style="list-style-type: none"><li>• People realise the more people affected the more severe the event</li><li>• In general however are most concerned about their own household</li><li>• The greater the scale the less personal help is expected – customers are more flexible &amp; pragmatic</li><li>• Large scale scenarios can prompt real concern around causes e.g. terrorism</li></ul>	<ul style="list-style-type: none"><li>• The longer a scenario the greater the cost implications and the less able customers are to maintain normality</li></ul>	<ul style="list-style-type: none"><li>• Customers express concern about recurring scenarios, prompting serious questions around cause and more severe actions</li></ul>

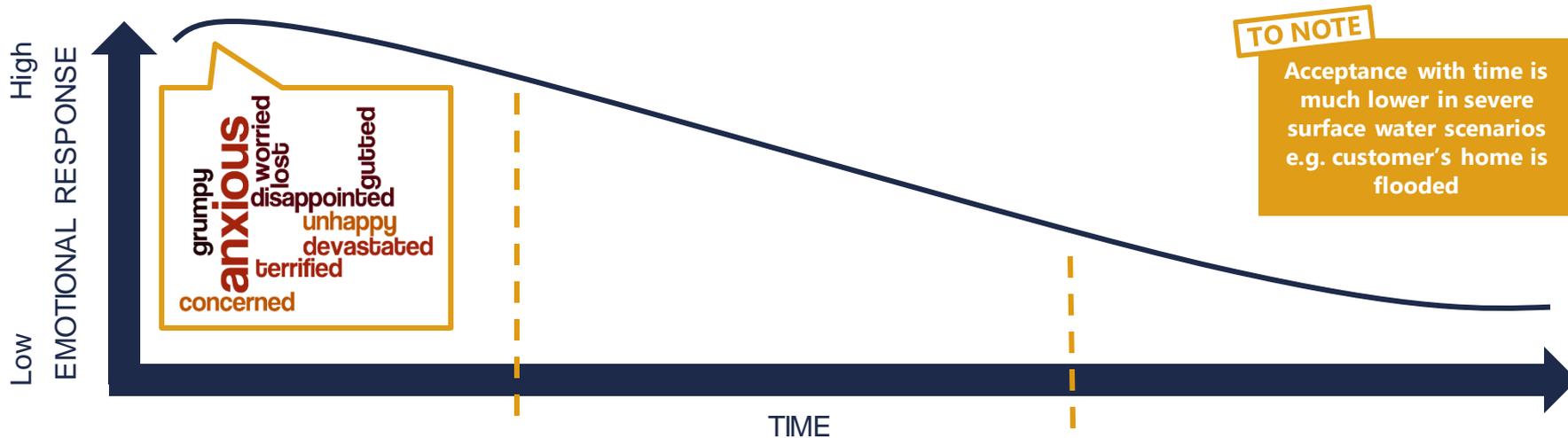
*"It becomes a joke after a week. You can't just disappear or cope on takeaways for that amount of time"*

*"The worst would be if it was all the time. I'd want to know why, I'd be so angry. I'd be outside Scottish Water's office if I didn't get answers"*

*"I know it's awful but I'd choose someone else over me. I just don't want it to affect me"*

# THE LEARNING CURVE

Immediate reactions to scenarios are often highly emotional. With time to think about the situation, customers become more flexible and pragmatic



- Emotive language
- High levels of self-concern
- Demand for information

*"I'd be helpless, frustrated, absolutely gutted...we'd be lost without tap water"*  
[Water quality]

- Consideration of actions & coping strategy
- Slowly become more flexible and pragmatic

*"Once the water had gone my friends and family would help. It'd be a nightmare but we'd sort it eventually"*  
[Surface water]

- Feeling of resilience
- Actions may even become routine

*"It's a huge inconvenience but we'd get used to it after a while. We'd be prepared - it'd become normal"*  
[Interruptions to supply]

# INTERRUPTIONS TO SUPPLY: SUMMARY OF ACTIONS

Customers find it easy to assign blame during interruptions to supply, often expecting it to be Scottish Water's responsibility



**CUSTOMER ACTIONS**



**SCOTTISH WATER ACTIONS**

**PRIORITY ACTIONS**

- Speak to neighbours/check if they are affected
- Contact Scottish Water and/or council for information
- Make a plan alone or with neighbours
- Buy bottled water

**OTHER ACTIONS**

- Buy food that doesn't require water to prepare
- Arrange help with friends and family e.g. using their showers if urgent or interruption is more than 24 hours

**PRIORITY ACTIONS**

- Information is key – it gives customers control and the ability to plan a solution**
- Provide broadcast and household information
  - Provide bottled water/water tankers in the local area
  - Provide portaloos
- Bottled water preferred to water tankers due to hygiene and ease.**

**Other authorities are only expected to help during large scale & duration scenarios**

*"I don't think anyone else would get involved unless it was the whole city for quite a while. Then I can imagine the emergency services handing out water and the council looking into why it's happened what Scottish Water are doing to fix the problem"*

*"Be honest... if you know what is happening and why then you can plan for it. You can probably cope with it... if you don't know why or what, you get really angry... information is important."*



BUSINESS CUSTOMERS

# Summary of qualitative findings

# WHO WE SPOKE TO

Interviews were conducted with a broad range of Scottish businesses split by business size

Interview	Business size (no. employees)	Sector	Topic 1	Topic 2
1	0-4	Retail/beauty/hospitality/Leisure	Surface Water 1	Surface Water 2
2	0-4	Retail/beauty/hospitality/Leisure	Water Quality 1	Water Quality 2
3	0-4	B2B – mix of industries	Surface Water 2	Surface Water 3
4	5-25	Retail/beauty/hospitality/Leisure	Interruptions 1	Interruptions 2
5	5-25	Manufacturing/house builder etc	Water Quality 3	Water Quality 1
6	5-25	B2B – mix of industries	Interruptions 1	Interruptions 2
7	26-50	Public sector/education/health	Surface Water 3	Surface Water 1
8	26-50	Manufacturing/house builder etc	Surface Water 2	Surface Water 3
9	26-50	B2B – mix of industries	Water Quality 1	Water Quality 2
10	51+	Public sector/education/health	Interruptions 1	Interruptions 2
11	51+	Retail/beauty/hospitality/Leisure	Water Quality 1	Water Quality 2
12	51+	Manufacturing/house builder etc	Interruptions 1	Interruptions 2

# Surface water & water quality overview

Many saw scenarios lasting more than 2-3 days as so unlikely that they found it hard to predict what would happen. Flooding is tangible.

## Surface water

- Surface water flooding was scenario taken **most seriously**: it is tangible and people could place themselves in it most easily
- The main concern was **their staff and their premises**, rather than the wider area/community
- As with domestic customers in a flood a **coordinated response** would be expected from the local authority, licensed providers, Scottish Water, insurance companies and potentially emergency services depending on seriousness
- Resilience to internal flooding was limited: any internal flooding is a **critical event**, would mean **trading would have to pause indefinitely**

## Water quality

- Businesses had better perceived resilience for water quality scenarios - based on the assumption that there would be bottled water available for drinking and that staff would still be able to come into work
- In theory smaller businesses could go on using bottled water or boiling kettles for 1-2 weeks
- Larger companies would likely encounter more issues obtaining water and looking after staff due to quantities involved

# CHARACTERISTICS AFFECTING RESPONSE

Use of water / sector, past experience and business size were all key issues

## USE OF WATER (SECTOR)

**Businesses that use water to make a product/deliver a service**

- Fundamental input e.g. construction, fabric dyeing, care home
- Very important e.g. transport - washing fleet on a day-to-day basis to meet contractual quality standards
- Day to day use e.g. all staff require drinking water & waste water services onsite hourly

## KNOWLEDGE ECONOMY

**Service based or non-client facing businesses**

- Service sector businesses are flexible – staff can work from home/other locations
- Quality and interruption are manageable for a prolonged period and flooding can be managed with agency support and compensation

## RELEVANT PAST EXPERIENCE

**Relevant experience of a quality, interruption or flooding event in a work context**

- Increasing knowledge of the process and potential timelines to solution

## CONTRACTUAL OBLIGATIONS

**Larger businesses tend to work for larger clients - who are more likely to demand resilience planning**

- Businesses working to agreed contractual terms may have considered issues, or have disaster recovery or resilience plans in place
  - These may address issues other than water however they mean people may have considered resilience in some regard before

## BUSINESS SIZE

- Medium / large businesses are more likely to have multiple sites
- This affords resilience – staff and equipment can be moved between sites in an emergency

## URBAN / RURAL STATUS

- **More rurally located businesses are likely to have a defined support network / safety net**
- This however may be geographically concentrated

# KNOCK ON EFFECTS ARE POTENTIALLY SEVERE

Many would have to cease trading in the event of an interruption, quality or surface water scenario – with clear financial impact

*"Our shops turn over £50,000 a month...it's a loss of income issue"*

*"Lots of people come through the door.... We don't want to lose more business to the internet... we could lose a £30,000 cruise booking. Every customer is a surprise"*

*"Building sites can use lots of water, especially your traditional bricks and blocks builds. They need lots of plaster and cement... this wet trade work would cease and this part of the business would come to a standstill depending on the stage of construction... The shelf life of mortar is short as it will dry. Other than that you've got unsatisfactory health and safety issues with a lack of toilet facilities"*

*"In a design and build contract the onus is more on us... we're holding the can if things go wrong... if there was a prolongation of the critical path which extended the end date by 1 week, that would mean £5,000 just for the overheads, not including materials"*

# WATER INTERRUPTIONS VARY IN IMPACT

Businesses dependent on water would be most affected – most have limited contingency to continue operating

	HIGH DEPENDENCE ON WATER	MEDIUM DEPENDENCE ON WATER	LOW DEPENDENCE ON WATER
WHO?	 <p>Clothing manufacturer</p>  <p>Construction firm</p>	 <p>Construction supply</p>  <p>Bus company</p>	 <p>Estate agent Pharmacy</p>  <p>Solicitor</p>  <p>Travel agent Tobacconist</p>
CONCERNS	<ul style="list-style-type: none"> <li>/ Production</li> <li>/ Supply chain</li> <li>/ Employees – drinking water and toilets</li> </ul>	<ul style="list-style-type: none"> <li>/ Low level production</li> <li>/ Running &amp; washing vehicles</li> <li>/ Employees – drinking water and toilets</li> </ul>	<ul style="list-style-type: none"> <li>/ Clients</li> <li>/ Employees – drinking water and toilets</li> </ul>
IMPACT & DURATION OF RESILIENCE	 <p>24h</p> <p><i>"In a design and build contract the onus is on us. We're holding the can if things go wrong"</i></p> <p><b>Financial loss, stress &amp; worry</b></p>	 <p>48h</p> <p><i>"We're used to constantly changing plans - closed roads, snow. We're a big company, we could probably cope with it"</i></p> <p><b>Inconvenience - unprofessional but can put contingency plan in place</b></p>	 <p>72h</p> <p><i>"Water is not a critical part of our processes, we don't manufacture, but we'd have to close after 48 hours"</i></p> <p><b>Client facing – embarrassing, reluctant to rely on e.g. neighbours' toilets</b></p>

# WATER INTERRUPTIONS

The first instinct is to keep the business operating - by day 3, formal support and solutions are expected

## First thoughts

- Toilets for staff
- Drinking water

## First actions

- Inform staff
- Purchase bottled water
- Phone licensed provider
- Start contingency planning

DAY 1

## Contingency plans in place

- Alternative working arrangements for staff
- Use other sites/neighbouring businesses for toilets and water to continue operation
- Inform clients / customers
- Seek updates from licensed provider on progress
- Potential to use neighbour toilets

DAY 2

## Agency support and solution

- Targeted information sought
- Timeline to solution expected
- Insurance claim/compensation
- Supply of portaloos and drinking water
- Visible engineers onsite working on the problem

DAY 3

## Financial impact

Thought quickly turns from 'nuisance' to loss of profit & compensation if the business cannot operate

*"Our shop turns over £50k a month. It's a loss of income issue"*

## Information and comms

Direct link between paying for and receiving a service (the licensed provider) plus the potential financial impact results in high level need for timely information

**Updates:** on LP & SW website, radio, email and leaflets

## Solution responsibility

As a paid-for service, businesses expects a quick and speedy solution

*"I'd expect an engineer out ASAP. We're paying for the service!"*

# SUMMARY (1) – REACTIONS TO SCENARIOS

The average domestic or business customer has never thought in detail about an interruption, quality or surface water event before

## Domestic customers

- People found it difficult to envisage the implications of the scenarios. There was a significant learning curve. People often had an emotional reaction then became more considered over time.
- Scenarios that have a direct impact on a person / household are considered most severe
- Virtually all domestic customers said they had a 'safety net' they could rely on in a severe event
- Interruption events were seen as serious, especially beyond 48 hours or affecting a large area with severe knock-on effects

## Business customers

- Businesses would first turn to their licenced provider followed by Scottish Water
- Many saw scenarios lasting more than 2-3 days as so unlikely that they found it hard to predict what would happen. They found it particularly difficult to envisage the effect on staff / staff not being able to work
- Many would have to cease trading – with clear financial impact. Compensation was spontaneously mentioned by most respondents
- Businesses dependent on water (e.g. clothing manufacturer) would be most affected – most have limited contingency and think they could operate for 24 hours. Even those with low dependence on water think they could only operate for around 72 hours

# SUMMARY (2) – DOMESTIC RESILIENCE

## Key differences by subgroups

### Resilience

- After considering the issues any interruption, quality or surface water event lasting 2-3 days would be perceived as a “severe event” affecting people’s routines and well being
- Rural participants thought they would have more resilience; they were more likely to have experienced e.g. adverse weather events requiring the community to pull together
- They recognised larger the size of the area affected, the greater strain on the community, and the slower the help from authorities. This creates an increased expectation the community would have to help each other

### Groups with less resilience

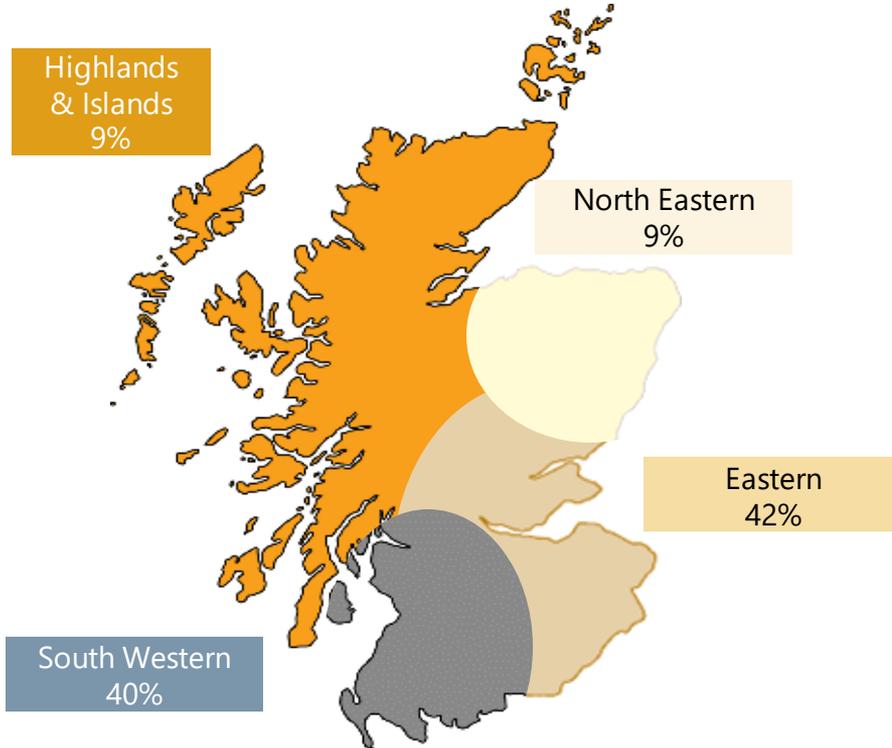
- **Lower SEG participants:** were more likely to live closer to their ‘safety net’ and want to avoid being a burden / causing an inconvenience. Their friends and family may also have smaller houses / less money available to support them. They had less money to pay for expenses (e.g. transport, takeaway food, laundry, clothes)
- **Elderly / those with health problems / disabled:** less able to evacuate, move. May be reliant on medication and regular care. May suffer from health issues that reduce strength or mobility or increase need for cleanliness (e.g. post surgery)
- **Those with children / dependents:** hygiene (washing nappies/keeping clean); availability of clothing, school work & entertainment; childcare if off school
- **Lack of transport:** can’t leave area or reach safety net



DOMESTIC CUSTOMERS  
**Summary of quantitative  
findings**

# WHO WE SURVEYED

An online survey of 1,002 Scottish Adults 18+ weighted to a nationally representative profile



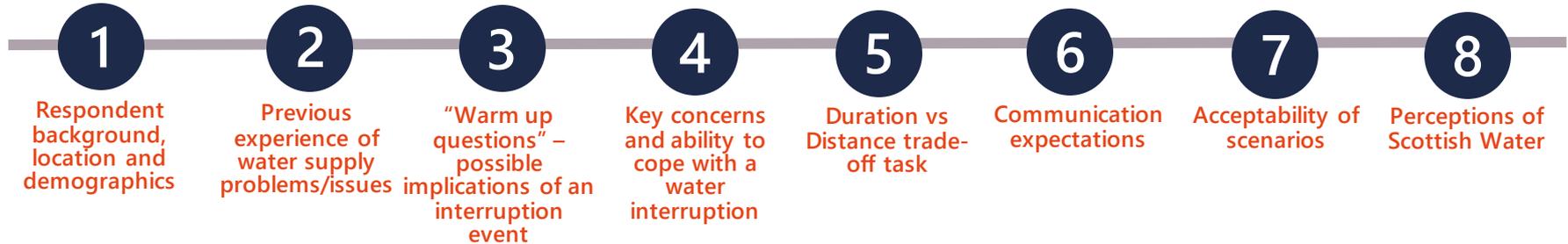
	n.	Unweighted	Weighted
Female	521	48%	46%
Male	481	52%	54%
Urban	638	64%	64%
Rural	353	34%	34%
34 and under	236	24%	26%
35-54	364	36%	36%
55+	402	40%	38%
ABC1	672	67%	50%
C2DE	330	33%	50%
Pre-family	388	39%	38%
Family	264	26%	28%
Post-family	350	35%	35%

Data was weighted to ensure representativity of the Scottish population in terms of gender, age, urban rural & socio-economic status, and lifestyle

# SURVEY APPROACH

The 10 minute survey focussed on how customers would cope in the event of a water interruption

## QUESTIONNAIRE FLOW



# CONCERNS IN THE EVENT OF AN INTERRUPTION

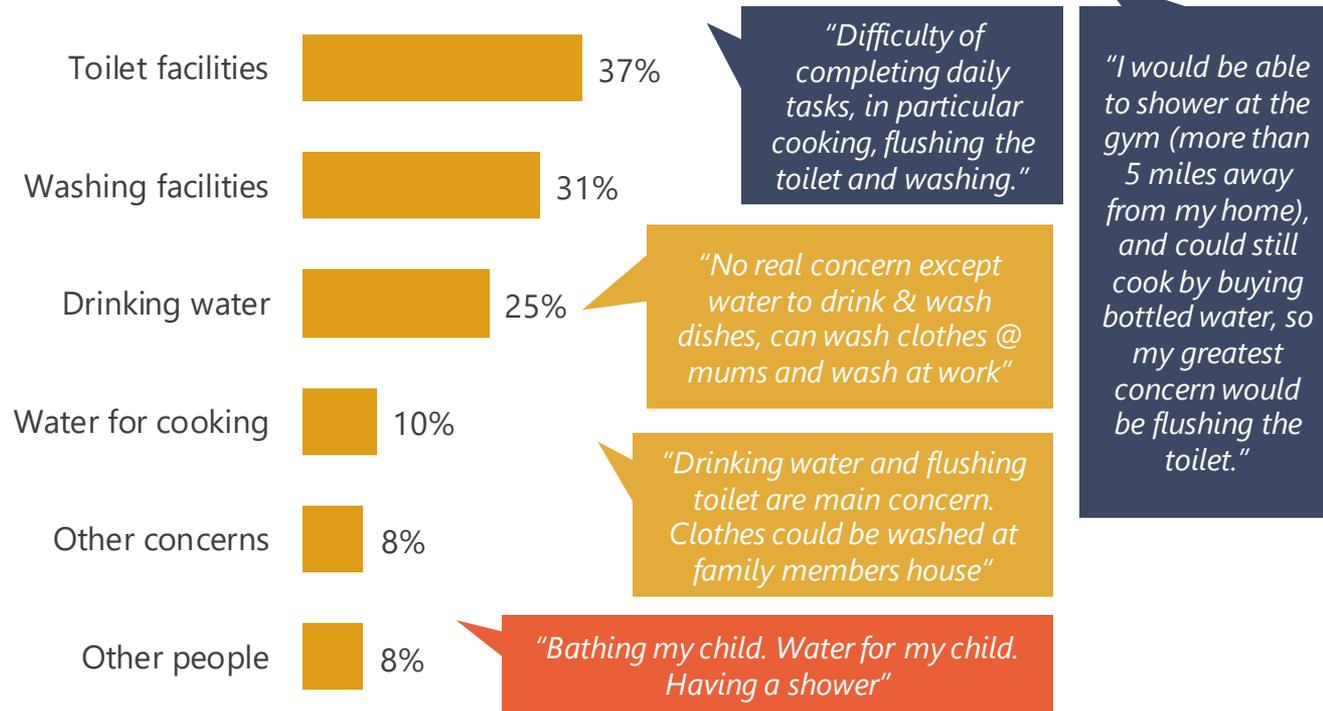
Concerns tended to be practical: drinking water, washing and toilet facilities

## Scenario:

*It is 1pm on a Monday afternoon. You turn on the tap and no water comes out. As a result you are unable to gain access to tap water in your property for drinking or cooking. You cannot wash yourself or the clothes in your home and once you have flushed your toilet the cistern will not refill*

*This situation lasts 48 hours and affects a distance of 5 miles from your home*

*What would cause you greatest concern in this situation?*



# COPING WITH A WATER INTERRUPTION

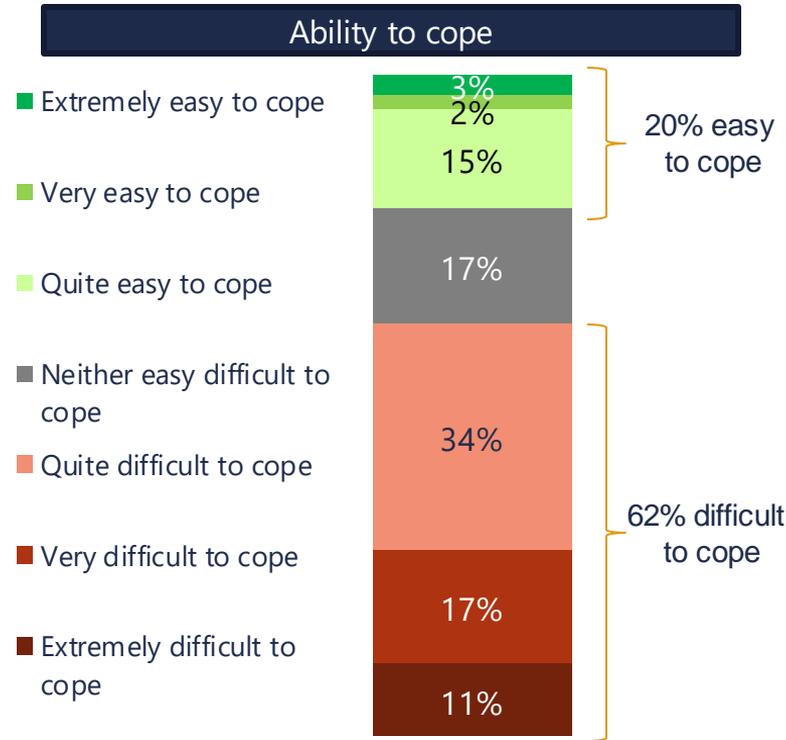
The majority would find it difficult to cope without water for 48 hours

## Scenario:

*It is 1pm on a Monday afternoon. You turn on the tap and no water comes out. As a result you are unable to gain access to tap water in your property for drinking or cooking. You cannot wash yourself or the clothes in your home and once you have flushed your toilet the cistern will not refill.*

*This situation lasts 48 hours and affects a distance of 5 miles from your home.*

*To what extent would your household find it easy or difficult to cope in this situation?*



## Sub-groups who find it easier to cope

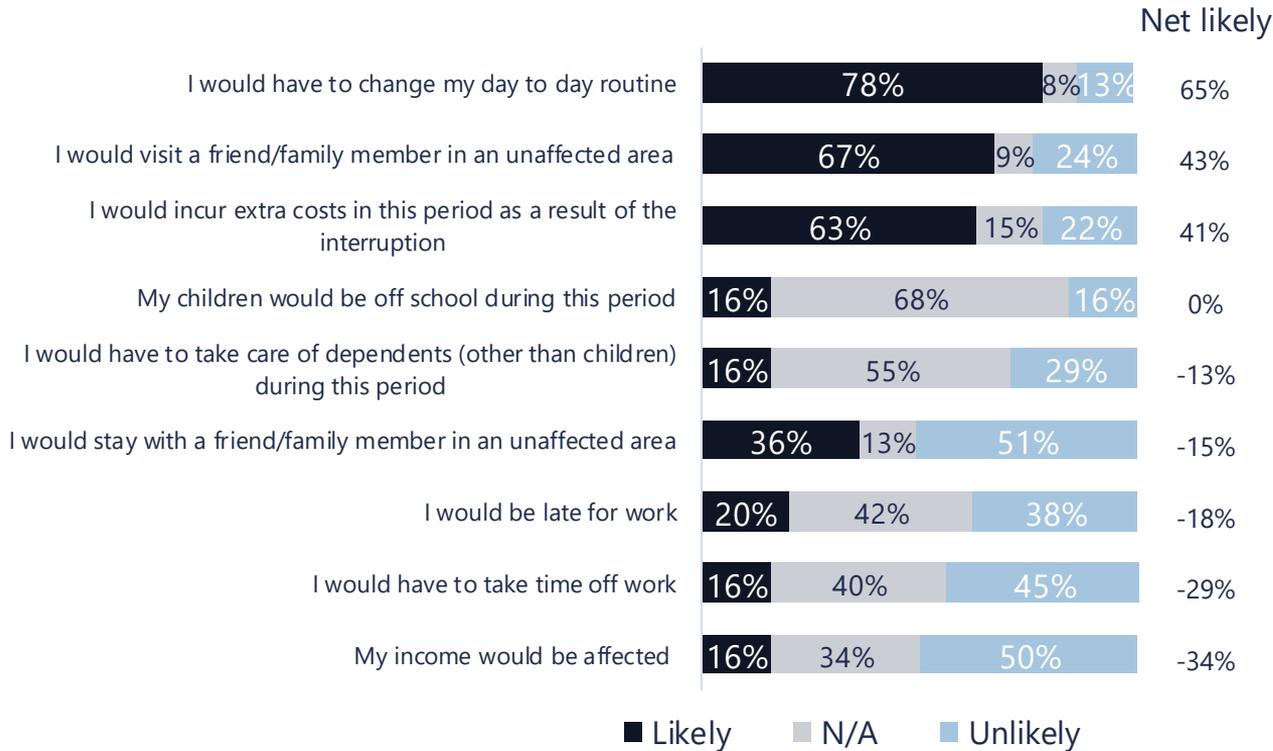
- Have own car 60%
- Fewer than 3 in household 59%
- Member of a gym 58%
- Work from home 57%
- Empty nesters 56%
- Males 56%

## Sub-groups who find it harder to cope

- Baby in the household 83%
- Care for someone else 80%
- Someone with a disability in household 79%
- Females 67%
- Non-car owner 67%
- 3 or more in household 67%
- Children live at home 66%
- Have family within 30 miles 65%
- Pre-family 65%

# EFFECT ON DAY TO DAY PLANS

A 48 hour interruption would mean changing daily routines, visiting friends/family in unaffected areas and incurring extra costs



Females tend to be significantly more likely than males to feel that the situation would impact upon them

Younger age groups, those with families and those without a car also expect the greatest disruption

# TRADE-OFF APPROACH

A conjoint trade-off technique in the survey was used to develop a model of consumer preferences

The trade-off task presented participants with three water interruption scenarios, of varying durations and distances

Participants were then asked to select which scenario they felt would be the hardest to cope with and the extent to which they would or would not be able to cope with that scenario

Their responses were used to develop a resilience model relative to the duration of a water supply interruption and the distance/radius affected. These are referred to as "indifference curves"

Respondents completed 12 iterations of the trade-off task in order to build the model

## Screenshot of trade-off exercise

Which of these scenarios would your household cope with least well?

	Option 1	Option 2	Option 3
How large an area is affected including your home	10 miles	20 miles	1 mile
How long your home is without water	7 days	5 days	12 hours
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Trade-off attributes used in model

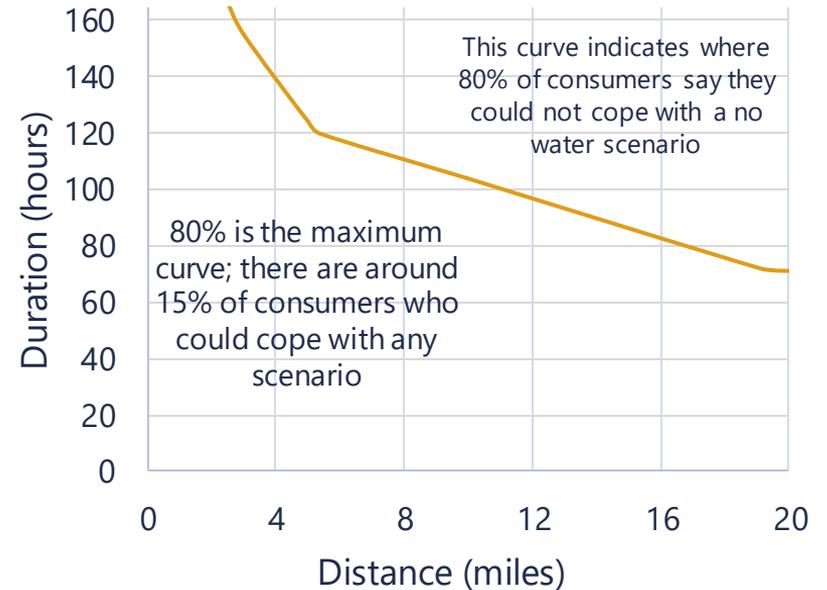
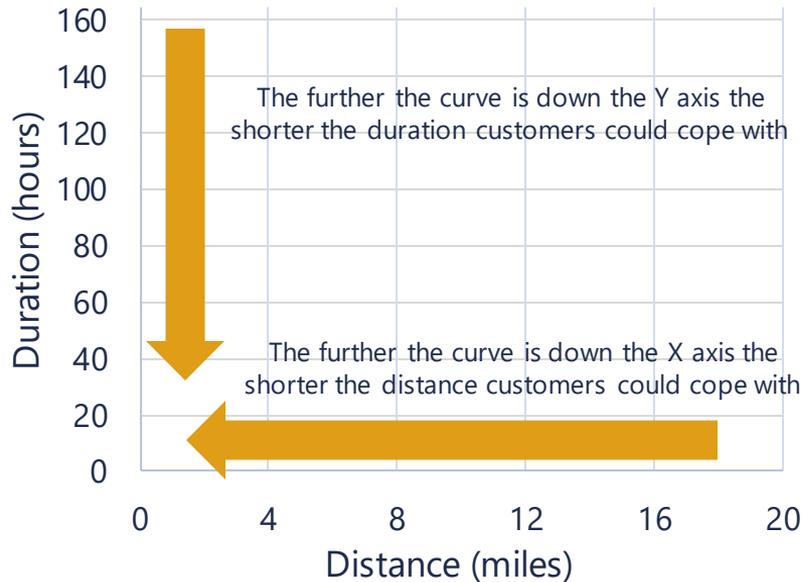
Distance from your home	Duration
0.5 mile	12 hours
1 mile	24 hours
3 miles	2 days
5 miles	3 days
10 miles	5 days
20 miles	7 days

# INDIFFERENCE CURVES – AN EXPLANATION

Indifference curves represent the proportion of customers who could cope with different interruption scenarios

Trade off models will be shown on the following slides. The charts show the proportion of consumers who say they could cope with different scenarios.

Each line shows what proportion of consumers could not cope with a water interruption scenario



We collected respondent postcodes during the research. Postcode data has been used to generate population data for each respondent, which has then enabled us to extrapolate the population within different radii and overlay it on relevant charts

# DISTANCES AND POPULATIONS

Contextualising distances and population can be difficult, the maps below differences in population for 5 mile radii

## Urban area



5 mile radius of EH2 has a population of 450,000

## Mixed area



5 mile radius of ML9 has a population of 56,000

## Rural area

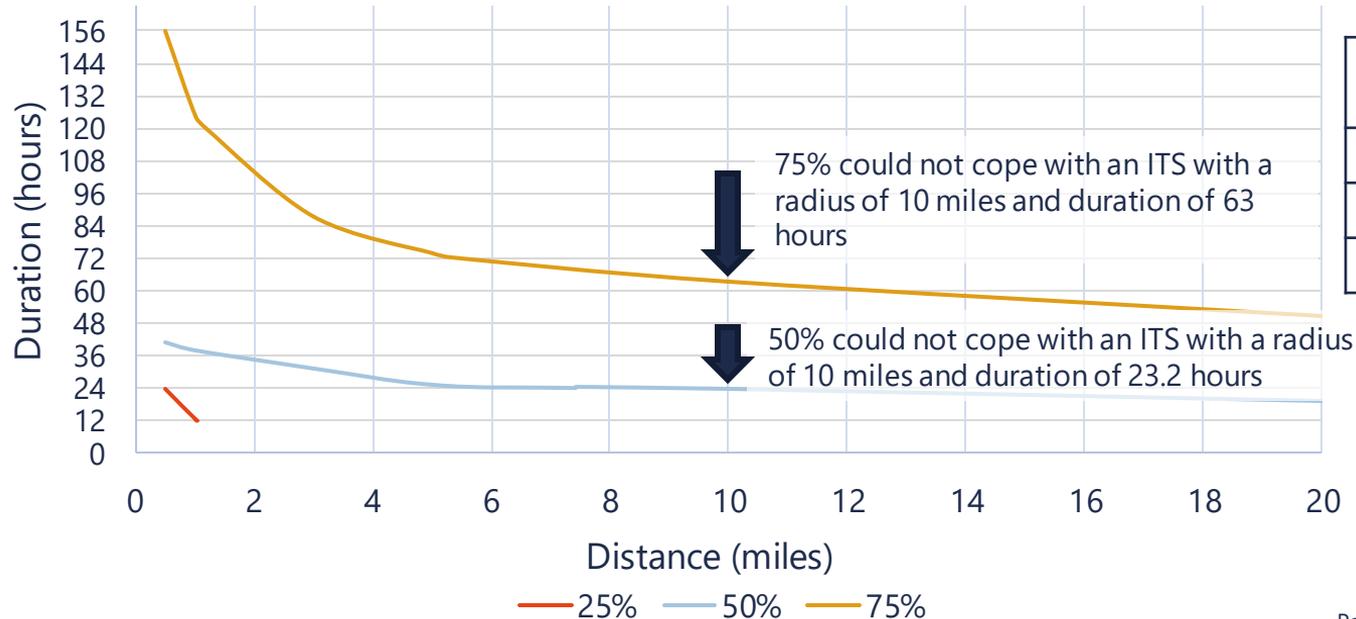


5 mile radius of AB42 has a population of 8,000

# INDIFFERENCE CURVES OVERVIEW

As the duration of an interruption increases, the percentage of customers able to cope decreases

**Based on advice from our statistician, analysis is based on a coping level of 50% - beyond this threshold only a minority of customers say they would be able to cope. This provides a robust dataset from which to visualise the trade off**

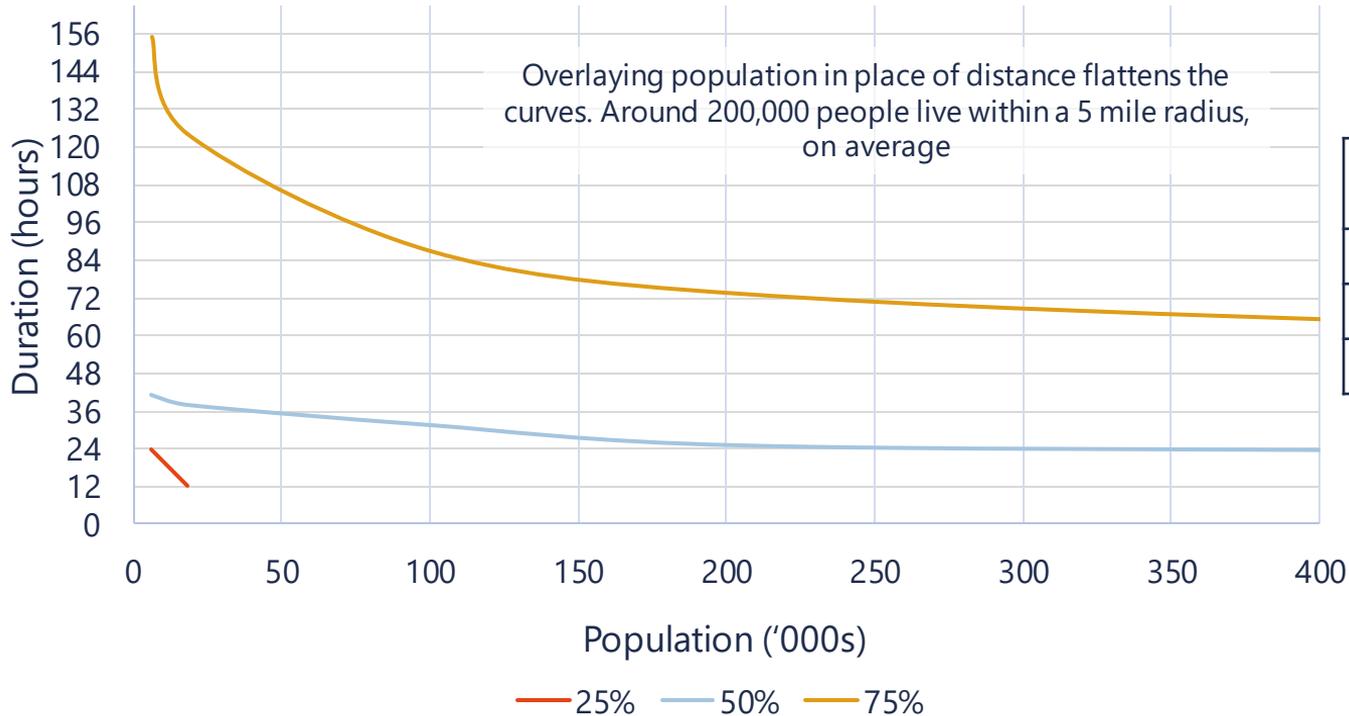


Can't cope level	5 mile radius	24 hour duration
25%	N/A	N/A
50%	25.0 hrs	7.4 miles
75%	73.4 hrs	N/A

Percentage of customers who could not cope

# INDIFFERENCE CURVES OVERVIEW

Duration is the key factor influencing ability to cope



Can't cope level	5 mile radius	24 hour duration
25%	N/A	N/A
50%	25.0 hrs	7.4 miles
75%	73.4 hrs	N/A

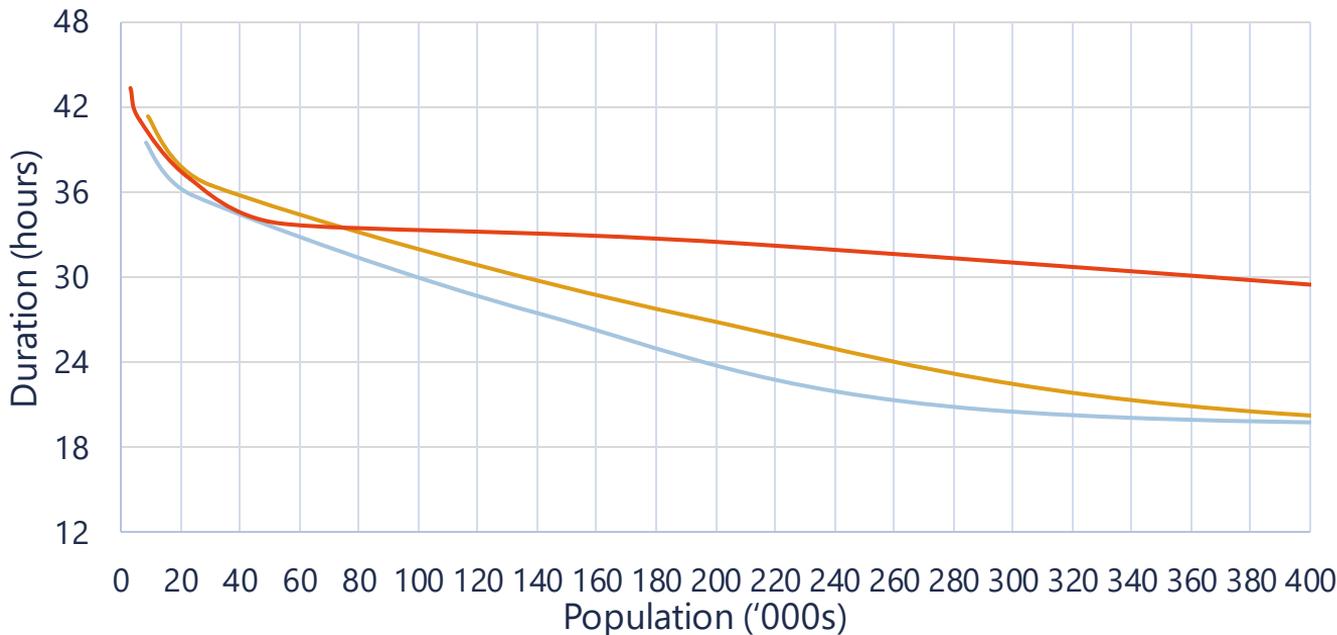
# RURAL vs. URBAN DWELLERS (vs. CITY CENTRE)

There is little variance between those living in city centres and those in other urban areas

**Those in city centres have a very similar profile to urban dwellers as a whole**

Urban: Average population within 5 miles = 288,136

Rural: Average population with 5 miles = 53,946



50% can't cope level	5 mile radius	24 hour duration
City centre	20.4 hours	3.6 miles
All urban	20.7 hours	3.7 miles
Rural	33.7 hours	+20 miles

City centre

All urban

Rural

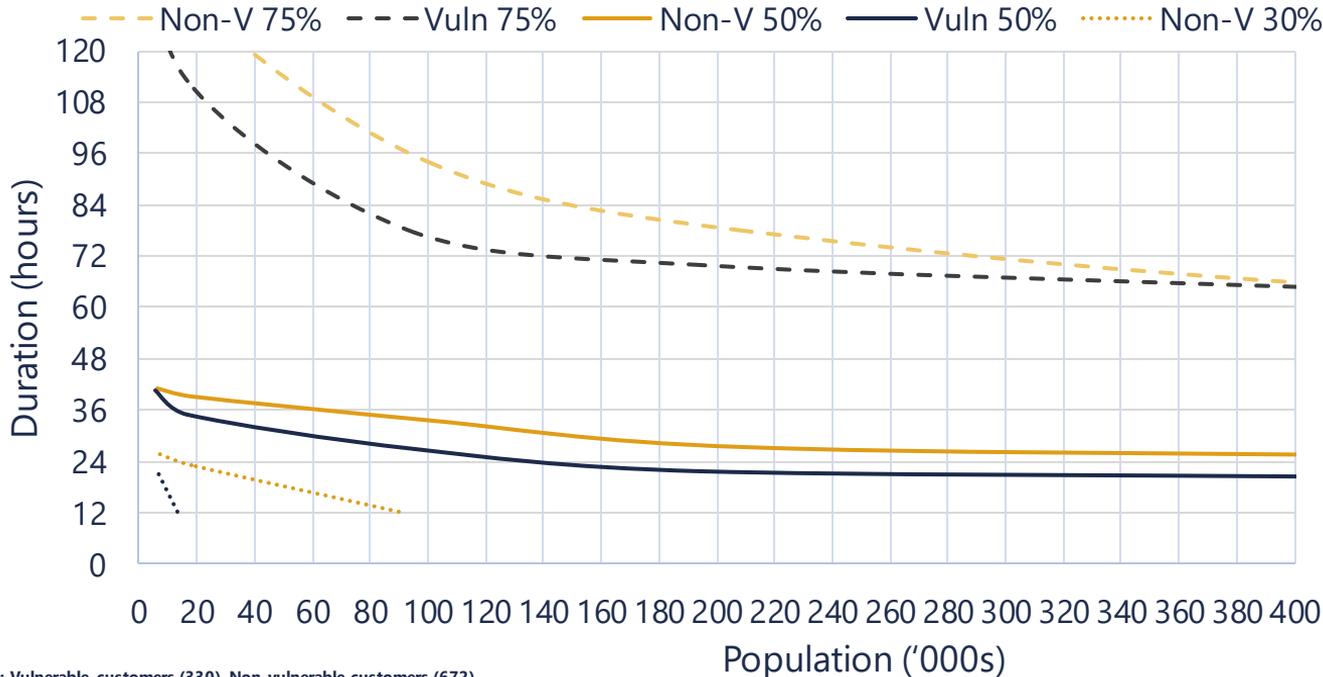
Sub-group data shows where 50% could not cope

# VULNERABLE CUSTOMERS

Vulnerable customers are less able to cope - they may find it easier to travel outwith an affected area

Vulnerable customers defined as: have someone in the household with a disability, a visual impairment, over 75; care for someone else; or are in the DE socio-economic group

Vulnerable groups: Average population within 5 miles = 194,122  
 Non-vulnerable groups: Average population with 5 miles = 208,920



75% can't cope level	5 mile radius	24 hour duration
Vulnerable	69.7 hrs	N/A
Non-Vuln.	78.1 hrs	N/A
50% can't cope level		
Vulnerable	21.7 hrs	4 miles
Non-Vuln.	27.2 hrs	11.4 miles
30% can't cope level		
Vulnerable	N/A	N/A
Non-Vuln.	N/A	1.6 miles

There are no data points to create a curve where 25% of vulnerable customers could not cope, Data has been included at 30% instead

Percentage of customers who could not cope

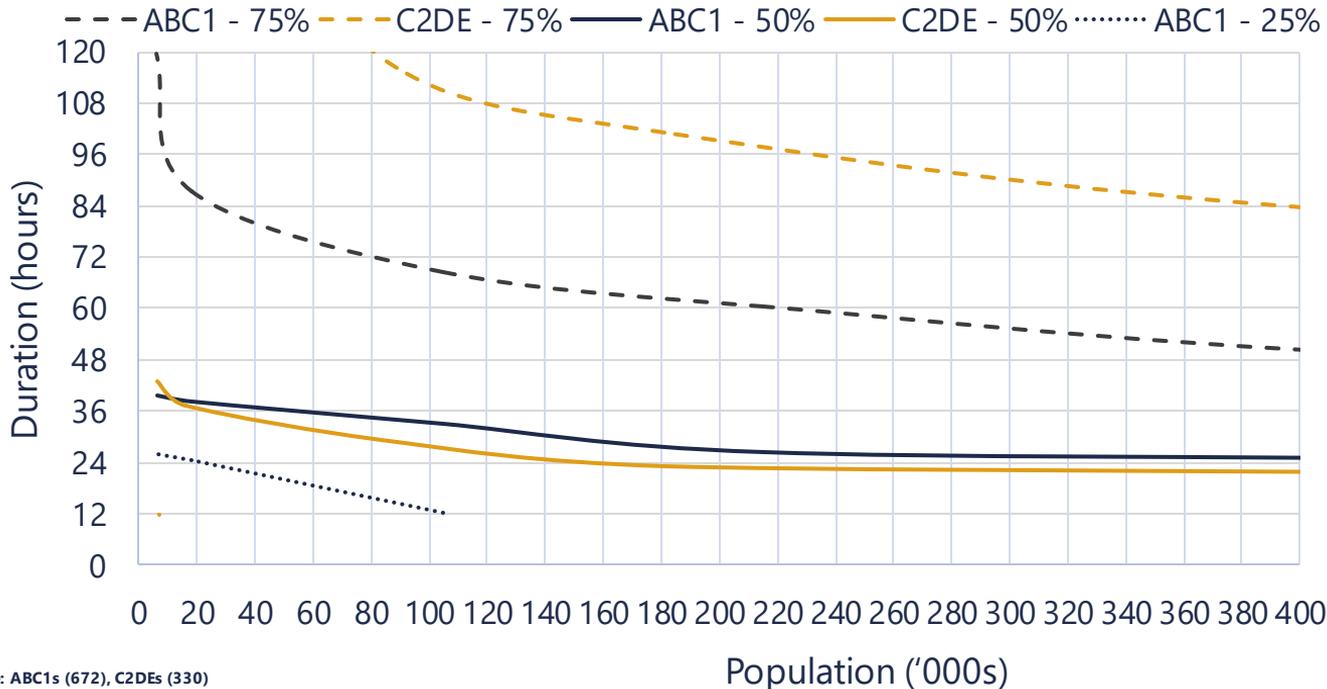
Base: Vulnerable customers (330), Non-vulnerable customers (672)  
 Average confidence interval of all data points: Vulnerable customers +/- 4.2%; Non-vulnerable customers +/- 3.0%

# SOCIO-ECONOMIC GROUPS

Other background factors, such as rural/urban location, or vulnerability of customers, appear to be more influential

Interestingly, after around 40 hours there is no longer a difference. Both groups would find it equally difficult to cope beyond this point

ABC1: Average population within 5 miles = 215,035  
C2DE: Average population with 5 miles = 181,045



75% can't cope level	5 mile radius	24 hour duration
ABC1s	60.4 hrs	N/A
C2DEs	101 hrs	N/A

50% can't cope level		
Group	Duration (hrs)	Radius (miles)
ABC1s	26.2	10.5
C2DEs	23.3	4.6

25% can't cope level		
Group	Duration (hrs)	Radius (miles)
ABC1s	N/A	1.1
C2DEs	N/A	N/A

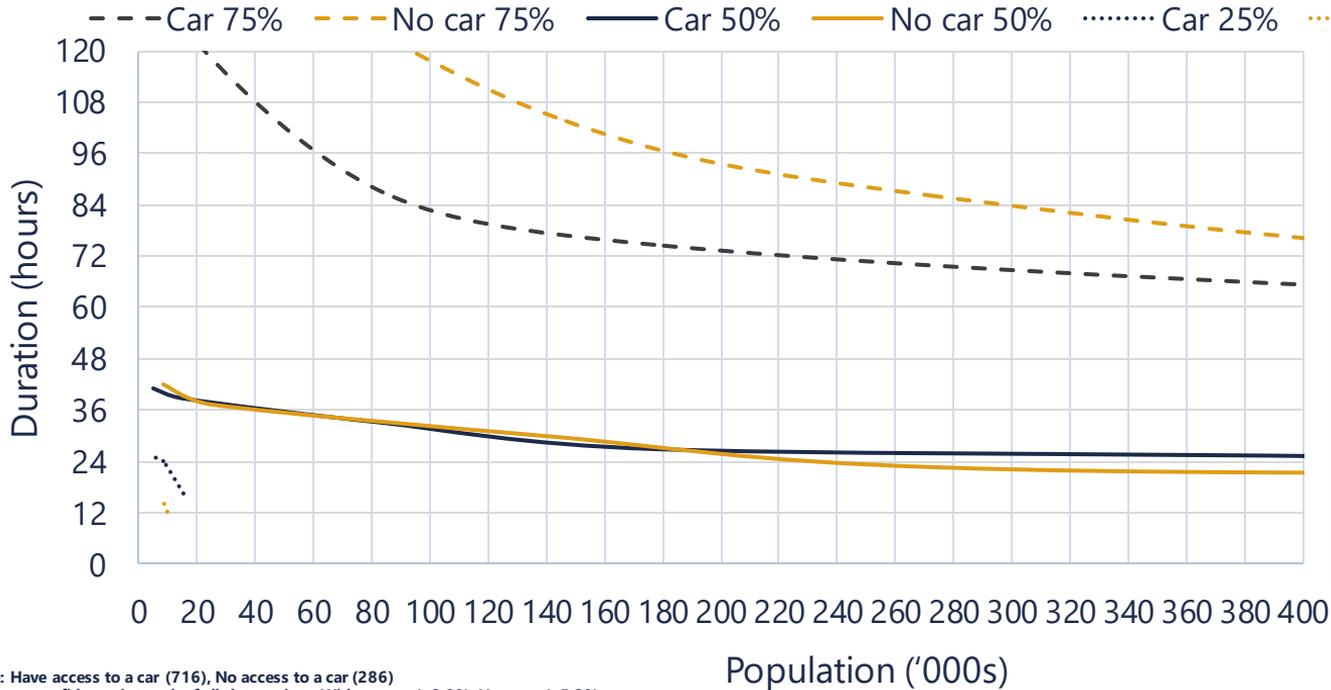
Base: ABC1s (672), C2DEs (330)  
Average confidence interval of all data points: ABC1s +/- 2.7%; C2DEs 4.1%

Percentage of customers who could not cope

# ACCESS TO A CAR

At the 50% level, those without a car appear less able to cope. This variation doesn't hold across all coping levels, however

Drive own car: Average population within 5 miles = 177,034  
 No car access: Average population with 5 miles = 274,128



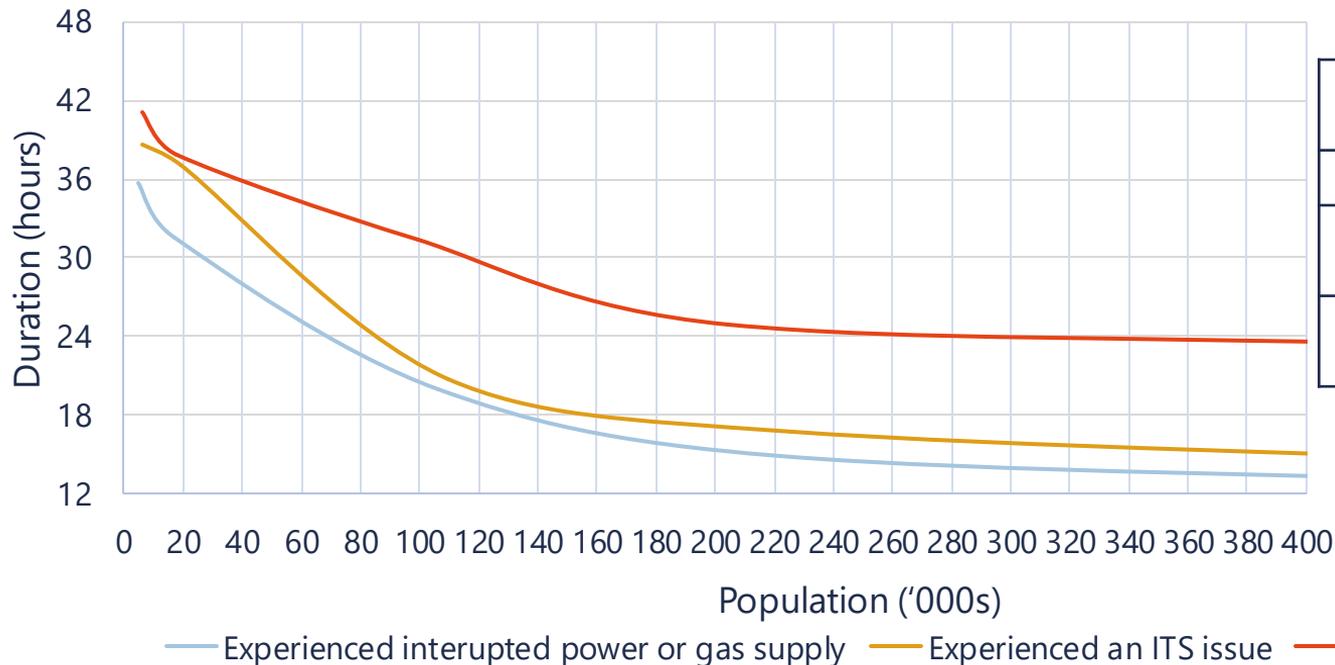
75% can't cope level		
5 mile radius	24 hour duration	
Car	74.8 hrs	N/A
No car	86.2 hrs	N/A
50% can't cope level		
Car	27.0 hrs	11.7 miles
No car	22.5 hrs	4.4 miles
25% can't cope level		
Car	N/A	N/A
No car	N/A	N/A

Base: Have access to a car (716), No access to a car (286)  
 Average confidence interval of all data points: With a car +/- 2.9%; No car +/- 5.2%

# PRIOR EXPERIENCE OF A WATER SUPPLY ISSUE

Those with prior experience of an ITS have a coping limit with a much smaller radius than customers with no prior experience

Experienced no water issue: Average population within 5 miles = 226,192  
 No prior experience: Average population with 5 miles = 201,181



50% can't cope level	5 mile radius	24 hour duration
All	25.0 hrs	7.4 miles
ITS Experience	16.8 hrs	2.8 miles
Power/Gas outage	14.9 hrs	2.5 miles

Base: Experienced a no water issue (117), Experienced a power/gas interruption (79); All respondents (1002)  
 Average confidence interval of all data points: Experienced an ITS +/- 7.2%; Experienced power/gas interruption +/- 9.2%; All customers 2.5%

Sub-group data shows where 50% could not cope

# RESILIENCE SUMMARY

The most vulnerable customer would be a vulnerable person living in an urban area, of lower SEG and without a car

The table below shows resilience by customer group for an interruption of 10 miles / 24 hours

Customer group	5 mile radius	24 hour duration
All	25.0 hours	7.4 miles
Urban	20.7 hours	3.7 miles
Rural	33.7 hours	22 miles
ABC1s	26.2 hours	10.5 miles
C2DEs	23.3 hours	4.6 miles
Vulnerable groups	21.7 hours	4.0 miles
Non-vulnerable groups	27.2 hours	11.4 miles
Car owners	27.0 hours	11.7 miles
Non-car owners	22.5 hours	4.4 miles
Experience of a no water issue	16.8 hours	2.8 miles

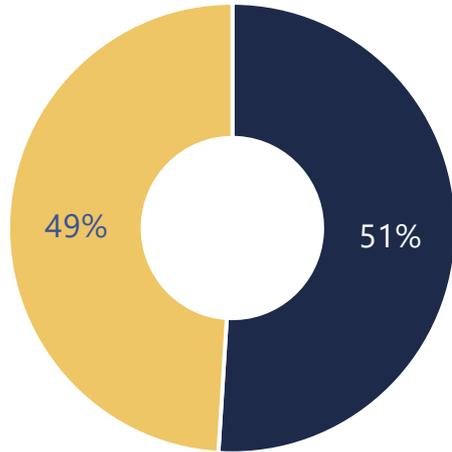
- Those with experience of a water interruption may be more realistic about their likely resilience
- Subgroups with less resilience include:
  - Those in urban areas
  - C2DEs
  - Vulnerable groups
  - Non-car owners
- The rural group appears to be an outlier but when duration reaches 40 hours there is little variation between any sub-group – all would find it as difficult to cope



BUSINESS CUSTOMERS  
**Summary of quantitative findings**

# IMPORTANCE OF WATER

Half of business respondents claimed that water was fundamental to the goods/services they produce



- Access to water is fundamental to the products or services we produce (e.g. fabric dyeing, care home, hairdressing)

53%

Have a written plan in place to deal with an unusual events (e.g. a disaster recovery or business continuity plan)

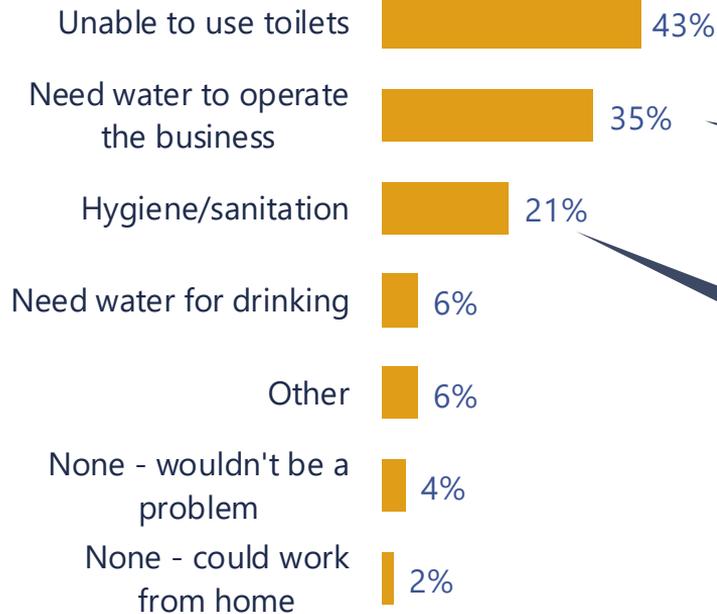
52%

Would be unable to send staff to other locations to work

# KEY CONCERNS IN EVENT OF A WATER INTERRUPTION

Sanitation is the main concern - around 1 in 3 might close their doors in an interruption event

## Key concerns in event of a water interruption for 2 days and a distance of 5 miles



*"It would just be not having the use of toilets as we will need them for hygiene. We can buy water from other shops, but we need the toilets so we would have to shut the shop"*

*"Cooking the food in the pub would be a concern and flushing the toilets would be an issue as well."*

*"We are a florist and it would be the fact I would have to shut the company as we wouldn't have any water to put the flowers in."*

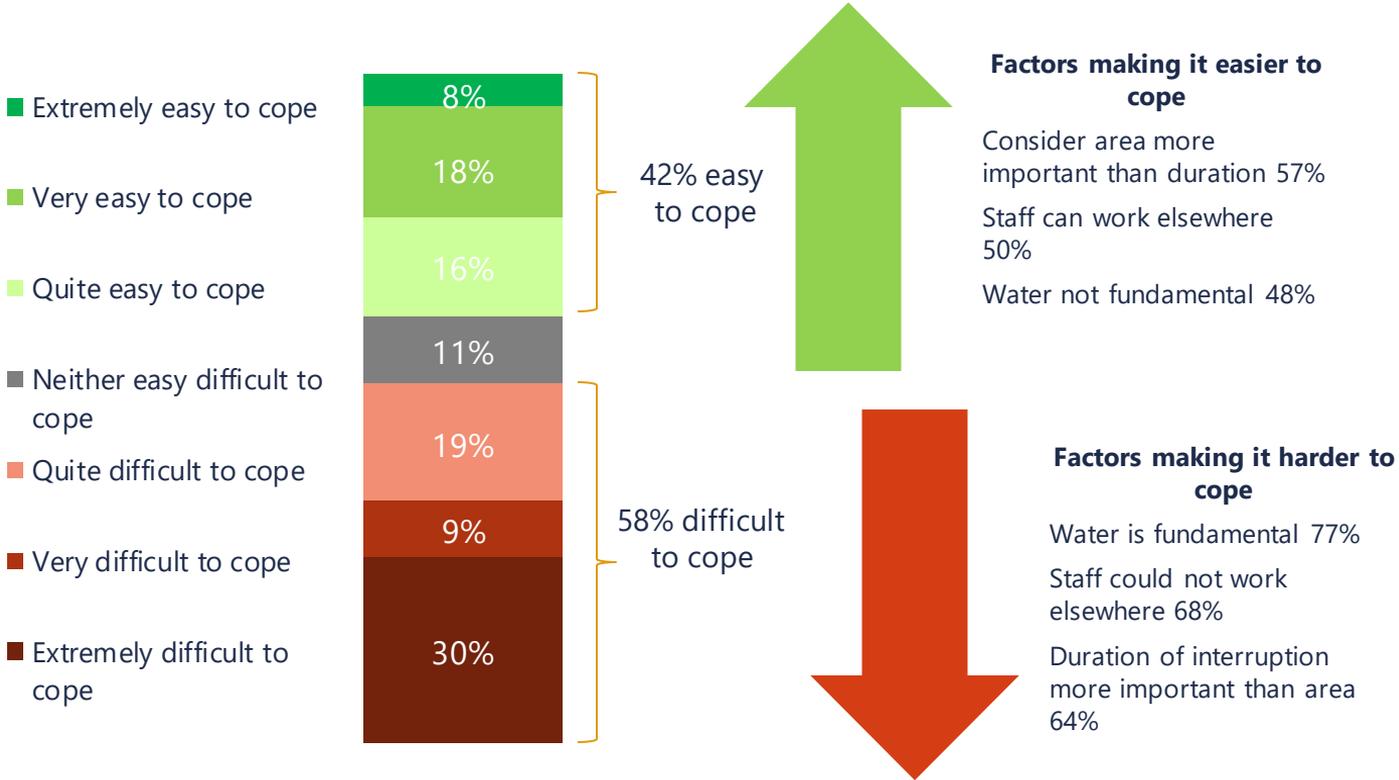
*"We would have to close the business and we would lose money because we use water in most of our operations."*

*"It would be hygiene as our workers would not be able to use the toilet and keep clean."*

# COPING WITH A WATER INTERRUPTION: DURATION

On prompting, 3 in 5 say they would have difficulty coping with a 48 hour interruption

**SCENARIO:**  
*Respondents were then told that the interruption would last for 2 days and asked how easy or difficult they would find it to cope*



Q2 Imagine this interruption lasts for 2 days. To what extent would your organisation find it easy or difficult to cope in this scenario? Base: All respondents (300)

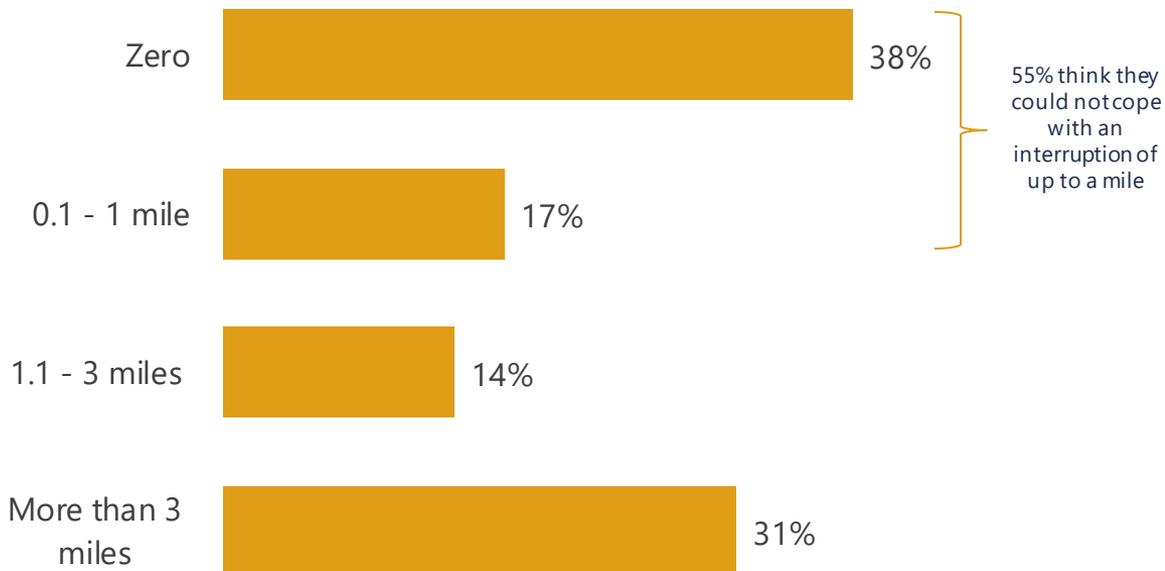
# COPING WITH A WATER INTERRUPTION: DISTANCE

Asked spontaneously, the majority think they could not cope with an interruption up to a mile in radius

*SCENARIO: Imagine this interruption affects not just your organisation. All other buildings in the area, for example domestic properties, public buildings (schools, hospitals etc.), shops, businesses and leisure facilities are also affected.*

*You would not therefore be able to get water from another building in the affected area.*

*What is the maximum distance from your organisation that could be affected and you would still be able to cope as an organisation?*



# SUMMARY

48 hours is a key tipping point for both domestic and business resilience

## Domestic resilience

- In the event of an interruption customers would:
  - Have to change their daily routine;
  - Visit friends/family in unaffected areas;
  - They expect to incur additional costs;
  - They would expect Scottish Water to contact them and have a local presence
- Evidence from the trade off exercise / indifference curves shows few think they would be able to cope beyond 48 hours
- Those who think they would be less able to cope include urbanites, those with dependents and “vulnerable groups” echoing findings from the qualitative research
- The evidence shows that people with prior experience of a water supply issue think they would be **less** resilient

## Business resilience

- Half of Scottish businesses claimed that water was fundamental to the goods/services they produce
- Half have a written plan in place to deal with an unusual events (e.g. a disaster recovery or business continuity plan)
- That said, spontaneous and prompted questions show perceived resilience is limited. On prompting, 3 in 5 say they would have difficulty coping with a 48 hour interruption
- When assessing their ability to cope with an interruption event, like domestic customers, duration is the primary factor for businesses

# Recommendations



# RECOMMENDATIONS (1)

Careful communication is vital

## Communication principles

- Train customer service team to identify those reacting emotionally and those who are more solution focussed
  - The former require **reassurance** - confident language and information on duration, support and Scottish Water's actions
  - The latter require **information / control** - give detailed information including contact details for if they have further questions

## Businesses

- SW should have a clear plan to engage with businesses and licensed providers early in any scenario to provide targeted information and clear timelines to solution
- Prepare a clear policy and process for compensation for loss of earnings

## Vulnerable & seldom heard customers

- Vulnerable customers and those without a support network require the most assistance – identify and prioritise these groups
- Vulnerable / seldom heard groups must be considered when developing a communications plan - many have a greater demand for information (e.g. duration, consequences) as they need to plan further ahead than the average customer
- These groups would benefit from a helpline offering advice, guidance, reassurance and further physical support tailored to their situation (accessing water can be a challenge for elderly or disabled customers)

# RECOMMENDATIONS (2)

Consider investment priorities - duration vs. size of area affected

## Opportunities and cross authority working

- Many domestic customers would contact their Local Authority in the first instance: there is a blurred understanding of responsibility
- It is essential that Scottish Water works closely with Local Authorities, particularly during interruptions to supply and issues with water quality
- Coordination with other authorities is important to get the message out
- Scottish Water may need to combat misinformation in these scenarios, particularly in relation to water quality
- There's an opportunity for Scottish Water to exceed expectations during an adverse event – having staff "on the ground" is key for reassurance

## Initial investment recommendations

- Findings suggest that duration has a greater impact on a customers' ability to cope than the size of the area affected
- This applies both to domestic customers and businesses
- It is likely customers would find it difficult to cope with interruptions lasting longer than 48 hours
- Consider how investment decisions in this light – for example:
  - Minimising the duration of individual interruption events
  - Minimising the number of events that last more than 48 hours