

# **Customer Research 2004:**

## Survey of customers affected by sewer flooding

Full Report

Prepared for



Office of Water Services

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## **Section 1: Executive summary**

### **1.1. Background and objectives of the research**

- This research was designed to gather information about the financial and other impacts that internal and external sewer flooding incidents have had on customers. Together with other information this will inform Ofwat's judgements on the balance between the costs and benefits of tackling sewer flooding prior to the publication of its Draft Determinations in August 2004.
- Ofwat is grateful for the assistance and contributions received from water and sewerage companies; Severn Trent Water, Northumbrian Water and Yorkshire Water and WaterVoice.
- The overall business objective is:

“To provide information on the scale of tangible and intangible effects of internal flooding from sewers on customers believed to be at risk of flooding at least once in ten years (i.e. those comprising the bulk of water and sewerage companies' proposed sewer flooding programmes) and external flooding of equal severity.”
- This survey involved Northumbrian Water, Severn Trent Water and Yorkshire Water. The survey focused on customers who have been flooded with sewage since January 2001 and who have been classified by companies as still being 'at risk' from sewage flooding in the future at least once in ten years. The sample of 650 included those flooded in their homes because sewers could not cope or were blocked, those flooded only in cellars and those flooded outside their homes.
- Following is a summary of the key findings of this study.

### **1.2. Nature and type of incidents experienced**

- Respondents who had experienced sewer flooding:
  - Are typically aged 35 and over.
  - Broadly represent the socio-economic spread typical of the UK population.
  - Tend to live in terraced or semi-detached homes.
  - Did not know that their homes were at risk of flooding before moving in.
- Respondents describe their most recent sewer flooding incident typically as:
  - Containing faeces or other debris, brown water and/or foul smelling.
  - Taking place during heavy rainfall.

- Entering their property through multiple entry points.
- Leaving flooding in local roads outside their property for one day or less.

### 1.2.1. Internal flooding

- Typically internal flooding due to lack of hydraulic capacity seems to have a more widespread effect inside and outside the home than flooding due to other causes such as blockages. More hydraulic flooded customers experienced flooding in their garden, driveway, garage or shed as well as various rooms of the home than those flooded due to other causes.
- Just over half of internally flooded customers experienced flooding of up to 3 inches, although half of these experienced flooding half an inch deep or less.
- For around 70% of customers sewage remained in the property for 2 days or less, though half of these were flooded for less than one day.

### 1.2.2. Unoccupied cellars

- Just under half of customers flooded in their unoccupied cellar were affected by between half an inch and 6 inches of sewage. 29% were flooded 7 to 24 inches and 5% had deeper flooding.
- For 52% the flooding remained in their cellar for up to 2 days, although 22% were affected for less than 1 day.

### 1.2.3. External flooding

- For just over 75% of customers sewage remained on the property for up to 2 days.

## 1.3. Types of actions taken by customers to remedy damage

- **Most customers had to have the flooded areas cleaned and/or disinfected to remedy the damage caused by flooding. A significant minority also had the sewage pumped out and replaced floor coverings and/or redecorated walls. While cleaning, disinfecting and pumping were often undertaken and paid for by the sewerage company, other actions were typically carried out by customers or their insurance companies.**

### 1.3.1. Internal flooding

- Between 33% and 40% of customers needed to pump the flooding out of their property. In around 50% of cases this was done and paid for by the water and sewerage companies.

- The majority (over 75%) needed their home to be disinfected and cleaned in order to return it to its original condition. Just over 50% did the work themselves and the water and sewerage companies did it for most of the others (30% to 38%). Those who did the work generally paid for it.
- A significant proportion of customers also replaced floor coverings (about 40%) and redecorated walls (about 30%). Fewer needed to take further actions such as replacing furnishings or appliances. These tasks and their associated costs were typically spread between customers and insurance companies.

### 1.3.2. Unoccupied cellars

- Over 70% of customers who were flooded in their unoccupied cellar needed this area to be disinfected and cleaned in order to return it to its original condition. 47% had the flooding pumped out. Where these tasks were required, the water and sewerage companies carried them out and paid for them in 65% or more cases.
- Only a small proportion of customers (7% or less) needed any other work undertaken, such as the repair or replacement of floor coverings, furnishings and/or appliances and redecoration.

### 1.3.3. External flooding

- 87% of customers who were flooded externally had to clean and 78% had to disinfect their property. 18% or less had to replace soil, gravel or other ground covering and replace plants and vegetables.
- In around 40% of cases customers cleaned and disinfected the external areas and the water and sewerage companies did the remaining 60%. Where other work was required customers typically undertook the task and often paid for it themselves, although insurance companies undertook and/or paid for the repair/replacement of items like garden furniture in a significant number of cases (N.B. small sample sizes).

## 1.4. Costs

- **About three in ten internally flooded customers and six in ten flooded elsewhere said they did not incur any costs to put their property right as a result of their flooding incident (Additionally, as shown in the insurance section, few made insurance claims). Between 18% and 31% typically incurred costs of up to £100, a further 8% to 19% between £100 and £500 and between 5% and 20% over £500.**
- **Customers who incurred a cost and were internally flooded due to hydraulic causes incurred the highest costs; £1068 on average. Averages for other types of flooding ranged from £333 (external) to £694 (internal other causes).**

- **Up to a quarter of customers said they received a refund of costs from their sewerage company or insurance company, with averages for the different types of flooding ranging from £36 (external) to £9446 (internal hydraulic). The majority of internally flooded customers and those flooded in cellars, and just under half of externally flooded customers also received a Guaranteed Service Standard (GSS) or ex gratia payment from their water and sewerage company.**

#### **1.4.1. Customer costs**

- About 30% of customers who experienced internal flooding and 60% of those who experienced flooding elsewhere did not incur a cost to put their property right.
- 20% to 31% of customers flooded internally paid up to £100. 10% to 13% paid over £1000. Of customers flooded elsewhere between 19% and 26% paid up to £100 and 7% or less paid over £500.
- The average cost to a customer (including those who incurred no cost) of restoring a property was £710 for a property flooded internally due to hydraulic causes, £486 for a property flooded internally due to other causes, and £134 and £138 for properties flooded in unoccupied cellars and externally respectively. It should be noted that these averages are strongly influenced by the few (up to 13%) customers who claimed that their property cost over £1000 to rectify, mainly internal flooding.
- The average cost for just the properties where costs were incurred rises to £1068 and £694 for internally flooded properties and £365 and £333 for those flooded elsewhere.
- When looking at other costs to the customer, about 35% of those flooded internally and 53% to 63% of those flooded elsewhere spent one day or less dealing with their flooding incident. Typically customers who had been internally flooded took longer to deal with their incidents. 10% of internally flooded customers had to spend some time away from their property.
- Although few (overall just 5%) had tried to sell their property, about half the customers flooded internally due to hydraulic causes feel their home has been devalued by sewer flooding, but the majority of customers flooded elsewhere or due to other causes believe the value of their house has not changed.
- Just under half of internally flooded customers and about six in ten of those flooded elsewhere who made an insurance claim indicated they have experienced an increase in their premium as a result of the sewer flooding. This is typically less than £100.

#### 1.4.2 Refunds

- As well as having paid the amounts above, around 24% of internally flooded customers and 7% to 12% of those flooded elsewhere received refunds for other costs incurred from sewerage companies, insurance companies or other parties.
- The average payment from a sewerage company ranged from £36 for external flooding to £260 for internal hydraulic flooding.
- The average payment from insurance companies was £802 for unoccupied cellar flooding, £1520 for external flooding, £3398 for internal other causes flooding and £9162 for internal hydraulic flooding (note that sample sizes for these figures were small).

#### 1.4.3. Compensation

- Over 60% of internally flooded customers and those flooded in their unoccupied cellars and 45% of those flooded externally also received what they perceived to be a GSS payment from their sewerage company. On average this was £110 to £123 for internal flooding (in many cases the payment they received would actually have been an ex gratia payment made under the company's extended scheme for sewer flooded customers) and £72 to £83 for flooding elsewhere.
- 35% of customers feel that they have been adequately compensated by their water and sewerage company. 54% feel they have not.

#### 1.5. Insurance

- **The majority of customers have not claimed on their insurance for the costs of rectifying their property after a sewer flooding event. A greater proportion of those who have experienced internal flooding have made a claim. Of those who did not claim, most say this was because they did not think to do so or there was no real damage. Most customers who did claim have still been able to obtain insurance afterwards, although some have been less able to shop around for a competitive quote. Up to 60% of claimants who have renewed policies since their claim say their premium has increased - usually by less than £100.**
- Of the 90% of customers who had buildings and/or contents insurance at the time of their last sewer flooding incident, 24% made a claim.
- A greater proportion of customers affected by internal hydraulic flooding made a claim (33%) than customers affected by other types of flooding.

- The majority of the 76% of customers who did not make an insurance claim stated that there was no real damage or that they did not think about claiming. However around 17% of customers who did not claim for internal flooding were concerned that to do so would have increased their premium.
- Of those who made a claim (22% of all customers) and who have since renewed their insurance policy (77% of claimants, equivalent to 17% of all customers surveyed), the vast majority (84%) indicated that they were able to obtain insurance that covered sewer flooding. However, 46% indicated they were unable to shop around for the most competitively priced policy.

#### 1.6. The different impact on customers between areas

- **The research looked at three sewerage company areas - Northumbrian Water, Severn Trent Water and Yorkshire Water. No significant differences were found in the costs to customers or the impacts on them between the regions that did not reflect the nature of flooding. Impacts varied between the types of flooding experienced but were broadly similar along these lines in all the areas surveyed.**

#### 1.7. Emotional impacts on customers

- **The majority of customers were upset by their flooding experience, with those flooded internally being most deeply affected. Many agreed that the incident could have been worse. Most are concerned about leaving their houses for long periods of time, but the vast majority do not wish to move home as a result of their sewer flooding incident.**
- Customers confirmed that being sewer flooded is an upsetting experience. Most customers found their experience very upsetting (62%) or fairly upsetting (25%). More of those flooded internally describe their experience as very upsetting than those flooded elsewhere.
- 93% of customers would not wish their experience on anyone else, though 67% feel that things could have been a lot worse.
- 50% of customers feel that recovering from the sewer flooding incident has been very difficult emotionally.
- The majority are also concerned about health and sickness implications (65% very and 18% fairly concerned).
- The majority of customers are concerned about leaving their property for a period of a week, perhaps to go on holiday (43% very and 22% fairly).

- However, the majority (85%) do not want to move from their home as a result of their sewer flooding experience.

#### **1.8. Actions taken to reduce the impact of further flooding**

- About half the customers affected by internal flooding and about four in ten customers flooded elsewhere are aware of some action having been taken to help reduce the risk or effect of any future flooding incident.
- Most commonly, up to 12% of customers are aware of non-return valves being fitted in sewer pipes, and a similar proportion are aware of the repair or renewal of pipes or the redirection of sewage carried. In 85% and 74% or more cases respectively the work has been undertaken and paid for by the water and sewerage companies. Additionally, up to 14% are aware of ground landscaping/construction of a boundary wall to divert sewage flow, though in around 60% of cases this work has been undertaken and paid for by customers.
- The average cost of actions taken to reduce the effect of future flooding ranged from £333 (internal hydraulic flooding) to £796 (external flooding), which was generally paid by the customer. (Care should be taken in the use of these averages due to the relatively small sample sizes).
- Only 17% of customers have changed the use of their now unoccupied cellar since their first sewer flooding experience; 7% have stopped using it for habitable purposes and 12% have stopped using it for storage (2% had previously used it for both).

#### **1.9. The importance of reducing future risk or effect of flooding**

- **Customers are concerned that their property might flood again and believe it is very important that actions are taken to reduce the effect of flooding in the future.**
- The majority of customers are very or fairly concerned that their property could flood again and 70% or more state that it is very important that the risk of future flooding is reduced.
- Given a list of four possible actions to reduce the effect of future flooding, the majority suggest that taking mitigation actions are the most important, followed by receiving full compensation and receiving help with cleaning up and putting things right.

## **Section 2: Background to the study**

### **2.1. Background**

One of Ofwat's key tasks is to set price limits every five years for water only companies and water and sewerage companies in England and Wales. The 2004 Periodic Review will reset the price limits for the period 2005-2010. It will also specify the outputs which companies must achieve within the price limits set, including maintained existing water and sewerage services and required improvements to drinking water, the environment and service levels, in particular sewer flooding.

In April 2004 the water only and water and sewerage companies submitted to Ofwat their Final Business Plans (FBPs) for 2005-2010. They contained information on planned service levels and the associated costs for the water companies' preferred strategies for the period. In August 2004, Ofwat will issue its Draft Determinations based on analysis of the FBPs. This will include assumptions about companies' investment to reduce flooding from sewers.

This research was designed to gather information about the financial and other impacts that internal and external sewer flooding incidents have had on customers, and inform Ofwat on the balance between the costs and benefits of tackling sewer flooding.

Ofwat set up a Steering Group to provide input into the study. It consisted of Ofwat, WaterVoice and three selected water and sewerage companies, namely Northumbrian Water, Severn Trent Water and Yorkshire Water. The steering group will work closely together on this research project.

Ofwat is grateful to the water and sewerage companies for their assistance in providing suitable samples of affected customers and for their input into the questionnaire and subsequent analyses.

## **2.2. Study objectives**

### **2.2.1. Business objective**

The overall business objective is:

“To provide information on the scale of tangible and intangible effects of internal flooding from sewers on customers believed to be at risk of flooding at least once in ten years (i.e. those comprising the bulk of water and sewerage companies’ proposed sewer flooding programmes) and external flooding of equal severity.”

### **2.2.2. Research objectives**

The survey focused on customers who have been flooded with sewage since January 2001 and who have been classified by companies as still being ‘at risk’ from sewage flooding in the future at least once in ten years.

The research objectives were to:

- Understand the nature/type of sewer flooding incidents affecting customers and cost of action taken
- Explore the extent to which the emotional distress and financial impact on customers varies with different causes of flooding
- Explore the extent to which impacts on customers vary between areas where average cost of solutions is high and those where it is lower
- Explore types and cost of action taken by customers to remedy internal/external damage caused by sewer flooding incident(s).
- Explore types and cost of remedial actions taken by customers to reduce the impact of sewer flooding in future
- Establish customers’ views on the importance of reducing risk of properties being flooded by sewerage

### 2.3. Research methodology

The selected research methodology was face-to-face interviews amongst 650 customers who have been affected by sewer flooding in the Yorkshire Water, Northumbrian Water and Severn Trent Water regions.

The target number of face-to-face interviews was as follows:

Target number of interviews by cause/type of sewer flooding			
No. of customers/cause of flooding	Yorkshire	Northumbrian	Severn Trent
Internal hydraulic flooding	100	100	100
Internal flooding due to other causes	50	50	50
Flooding in unoccupied cellars	50	0	50
External flooding	34	33	33

There were no target interviews in Northumbrian for customers flooded in unoccupied cellar as this region has very few cellars.

The market research company commissioned to undertake the fieldwork, Quality Fieldwork, was provided with three databases containing details of customers who had experienced sewer flooding since January 2001 and were thought to be at risk of repeated sewer flooding, one relating to each of the three water and sewerage companies supporting this research study. The databases contained the names, addresses, telephone numbers (where available) and an indicator of the cause and type of flooding experienced.

The databases were compiled from sewer flooding records held by the water companies. However, prior to these being passed to the research company, customers were sent a letter outlining the purpose of the research and inviting any customers who did not wish to participate in the study to notify their water company.

The actual number of records supplied to Quality Fieldwork was as follows:

Actual number of records available by cause/type of sewer flooding			
No. of records	Yorkshire	Northumbrian	Severn Trent
Internal hydraulic flooding	49	219	325
Internal flooding due to other causes	215	85	255
Flooding in unoccupied cellars	423	0	99
External flooding	249	152	73

When Yorkshire Water notified customers of the study the company assisted customers to opt out of the research by enclosing with the notification a self completion slip with an “opt out tick

box” and postage paid envelope. This resulted in considerably higher numbers of customers opting out of the study in the Yorkshire region compared to Northumbrian and Severn Trent.

The number of customers available for research in Yorkshire who had experienced internal hydraulic flooding became a particular concern and Quality Fieldwork were instructed to increase the number of interviews amongst customers who had been internally flooded due to other causes to make up the shortfall.

Northumbrian Water and Yorkshire Water notified all customers flooded since January 2001 that this research was being undertaken and supplied to the research company the contact details of all those who did not opt out of the survey. Severn Trent Water, by contrast, notified a random sample of its customers and, again, passed on details of those who did not opt out.

In addition to using the databases, interviewers were permitted to interview a restricted number of customers who were not included in the databases but whom they had become aware had experienced flooding from other sewer flooding interviews.

Those customers who participated in this survey are felt to be representative of all customers who experienced sewer flooding across the three regions.

The survey was piloted in March 2004 and the fieldwork was undertaken across the three regions during April and May 2004. However, as the survey neared its completion target date it became clear that interviewers were struggling to achieve the number of face-to-face interviews required for each of the flooding types. It was decided to permit the completion of outstanding interviews by telephone.

On completion of the fieldwork and data capture of the questionnaires, the data was passed to Research by Design Ltd for analysis and report writing.

## 2.4. Cause/type of flooding experienced by customers surveyed

648 interviews form the basis of this report on the sewer flooding experiences of customers. The following table shows how these interviews were sourced.

Method by which customers were sourced for the survey by region			
No. of interviews	Yorkshire	Northumbrian	Severn Trent
Face-to-face sourced from databases	183	136	196
Face-to-face not sourced from databases	11	12	34
Telephone sourced from databases	39	36	1
TOTAL	233	184	231

The following two tables show the number of interviews undertaken according to the cause/type of flooding experienced. The first shows the breakdown as defined by the companies' own databases except, of course, where interviews were not sourced from the databases. In these cases the cause/type of flooding has been taken from the answers given by the customers, though also considers the cause/type of flooding known to have affected other neighbouring properties.

The second table provides the cause/type of flooding as defined by the customers themselves, being taken from question 8 which asks the areas of the property that were flooded during the most recent sewer flooding incident. Only the split between internal hydraulic flooding and internal flooding due to other causes has been drawn from the databases.

Cause/type of sewer flooding defined by company databases			
No. of interviews	Yorkshire	Northumbrian	Severn Trent
Internal hydraulic flooding	35	102	102
Internal flooding due to other causes	109	47	50
Flooding in unoccupied cellars	53	0	48
External flooding	36	35	31

Cause/type of most recent sewer flooding defined by customers			
No. of interviews	Yorkshire	Northumbrian	Severn Trent
Internal hydraulic flooding	27	81	82
Internal flooding due to other causes	98	38	42
Flooding in unoccupied cellars	62	13	59
External flooding	46	52	48

Customers were asked in this survey about their most recent sewer flooding incident, which may differ from the risk category by which water and sewerage companies classify them. For example, a customer known to be at risk of internal flooding may have experienced only external flooding in the last incident. This document, therefore, reports the experiences, perceptions and attitudes of customers segmented by the four causes/types of flooding as defined by the customers themselves at question 8, except at Section 8 Insurance claims where customers are segmented using the water and sewerage companies' databases. We have used these definitions in Section 8 as insurance companies may be aware when a property is on a company's at risk register and hence this may have an effect on how claims are treated and may affect future premiums.

## 2.5. Data analysis and statistical considerations

The profile of customers according to the cause/type of flooding most recently experienced is given in Appendix 1 of this report.

Neither demographic nor geographic weights have been applied to the data; the reported results directly reflect the sample profile described in Section 2.4 above.

Base sizes of the sample reported in tables and charts are clearly stated. For the majority of questions the base size is 648 for all respondents, 190 for those who experienced internal hydraulic flooding, 178 for those who experienced internal flooding due to other cases, 134 for those flooded in their unoccupied cellar and 146 for those flooded externally. (Where there are questions that only apply to a sub-set of customers the changes in base sizes are clearly stated.)

The table below shows the sample tolerances of each of these sample sizes. It shows, for example, that there is a 95% chance that the answers given by the 190 customers who experienced internal hydraulic flooding will fall within the range  $\pm 7\%$  where 50% of these customers give the same answer.

95% confidence intervals			
Sample size	10% or 90% $\pm$	30% or 70% $\pm$	50% $\pm$
648	3	3	4
190	4	5	7
178	4	6	8
146	4	7	8
134	4	7	9

Where differences exist in the perceptions and experiences of customers and these are statistically significant, and not simply due to small sample size or other sampling error, these differences have been highlighted to further the reader's understanding of the issues covered. Statistical tests have been performed at the 95% confidence level.

Where answers given in tables and charts are expected to sum to 100% but do not, this is due to rounding.

## **Section 3: Profile of customers, properties that have been flooded and nature of the flooding incident**

This Section provides an insight into the demographic profile of the customers who participated in the survey and the homes they live in. It segments customers into four groups according to the cause or type of flooding most recently experienced (though some customers will have been flooded more than once in their current property and possibly as a result of a cause or type different from that most recently experienced). The four groups are:

- Those internally flooded due to hydraulic causes, 29% of those surveyed – 190 customers
- Those internally flooded due to other causes, 27% of those surveyed – 178 customers
- Those flooded in their unoccupied cellar, 21% of those surveyed – 134 customers
- Those solely flooded externally, 23% of those surveyed – 146 customers

### **3.1. Summary**

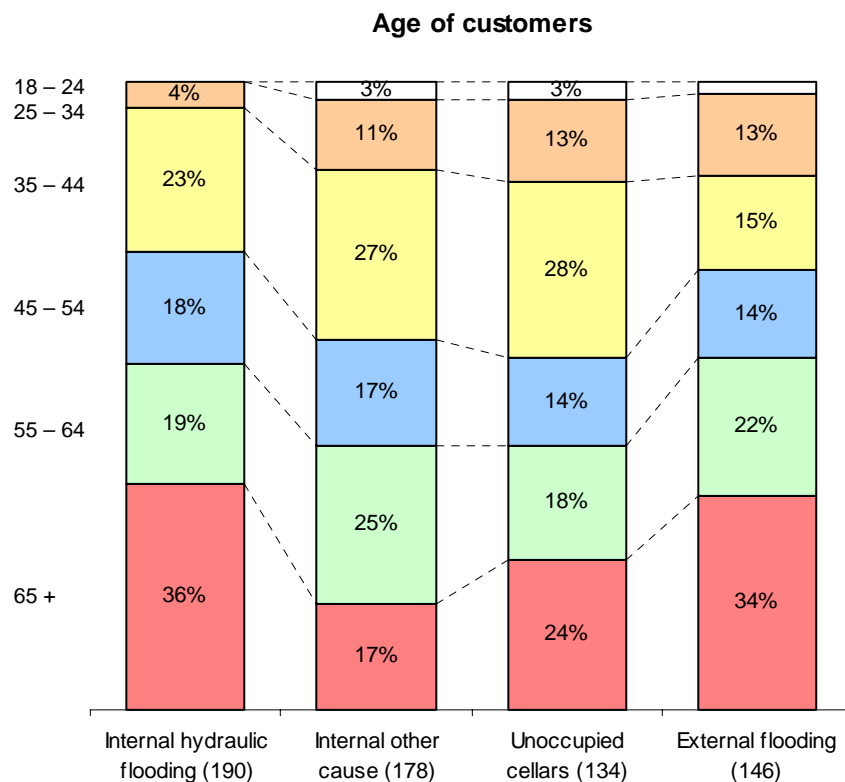
- Respondents who had experienced sewer flooding:
  - Are typically aged 35 and over.
  - Broadly represent the socio-economic spread typical of the UK population.
  - Live in terraced or semi-detached homes.
  - Did not know that their homes were at risk of flooding before moving in.
- Respondents describe their most recent sewer-flooding incident typically as:
  - Containing faeces or other debris, brown water and/or foul smelling.
  - Taking place during heavy rainfall.
  - Entering their property through multiple entry points.
  - Leaving flooding in local roads outside their property for one day or less.

### 3.2. Demographic profile of customers who have been flooded

#### 3.2.1. Age of customers

Q58. Can I just check within which age band you fall please?

The greater proportions of customers experiencing flooding are most typically aged 35 and over. 23% of those who have most recently experienced internal hydraulic flooding are aged 35 to 44, for example, 18% 45 to 54, 19% 55 to 64 and 36% 65 or over.



Compared to the average:

- Fewer customers aged 25 to 34 (4% vs.10%) and more aged 65 and over (36% vs. 28%) have experienced internal hydraulic flooding.
- Fewer customers aged 65 and over have experienced internal flooding due to other causes (17% vs. 28%).
- Fewer customers aged 35 to 44 (15% vs. 23%) and more aged 65 and over (34% vs. 28%) have experienced external flooding.

### 3.2.2. Social grade of customers

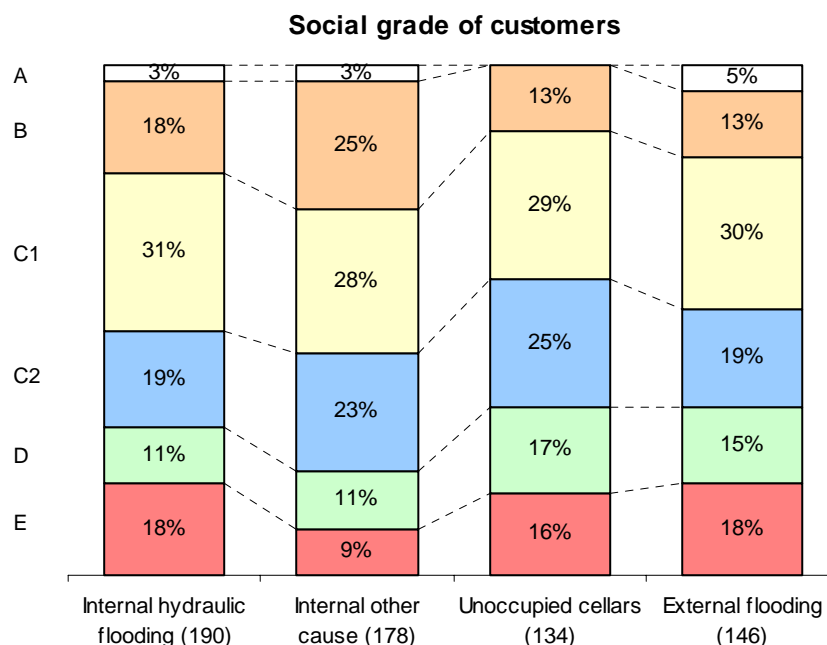
Q63. *What is the occupation of your household's chief income earner, that is the person with the largest income whether from employment, pensions, state benefits, investments or other source?*

From this question the social grade of respondents has been derived. This is based on the following broad definitions.

- A - Professional people, very senior managers in business or commerce or top level civil servants
- B - Middle management executives in large organisations with appropriate qualifications, top management or owners of small business concerns, educational and service establishments
- C1 - Junior management, owners of small establishments, and all non manual positions
- C2 - Skilled manual workers
- D - Semi skilled and unskilled manual workers, and apprentices and trainees to skilled workers
- E - All those entirely dependent on the state long term, through sickness, unemployment, old age or other reasons. Those unemployed for a period of 6 months or more. Casual workers and those without regular income.

Overall, some 20% of customers social graded AB, 30% C1, 21% C2 and 29% DE have been affected by sewer flooding at their property since January 2001. This profile is broadly reflective of the UK population.

The spread of customers according to the cause/type of flooding experienced across the social grades is relatively consistent. Only in the case of internal flooding due to other causes is there a disproportionately large number of customers in the B social grade (25%) and small number in E (9%) compared to the average (18% and 15% respectively).



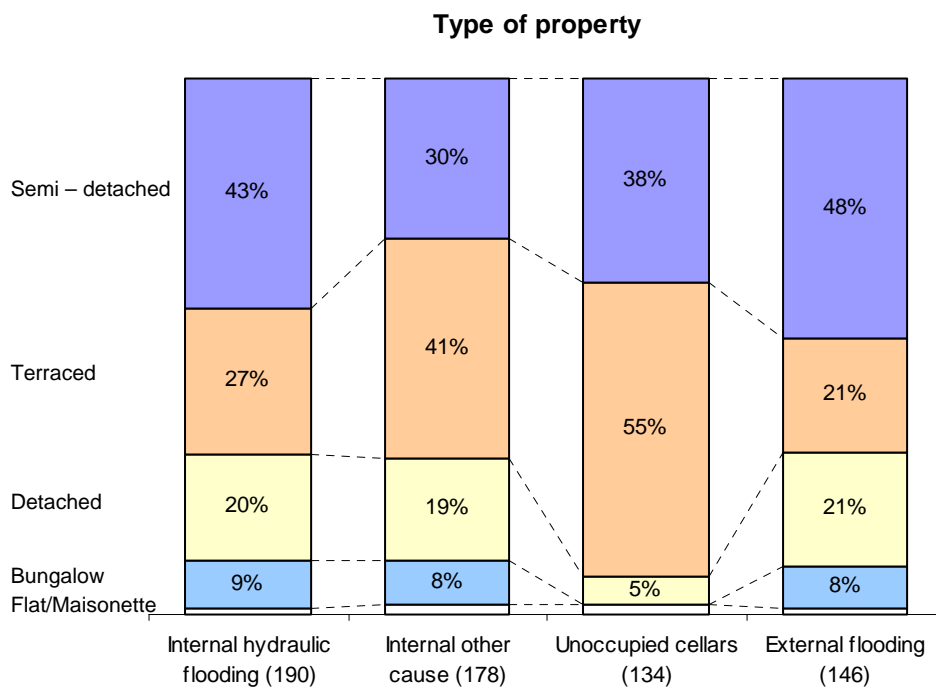
### 3.3. Profile of properties that have been flooded

#### 3.3.1. Types of properties

Q60. Is your home:

<i>Detached</i>	<i>Terraced</i>
<i>Semi-detached</i>	<i>Bungalow</i>
<i>Flat/maisonette</i>	<i>Other (please specify)</i>

The incidence of flooding is greatest in terraced and semi-detached homes. 43% of those who have most recently experienced internal hydraulic flooding live in a semi-detached property. This rises to 48% of those flooded externally. Similarly, 41% of those who have been internally flooded due to other causes live in a terraced home, rising to 55% of those flooded in an unoccupied cellar.



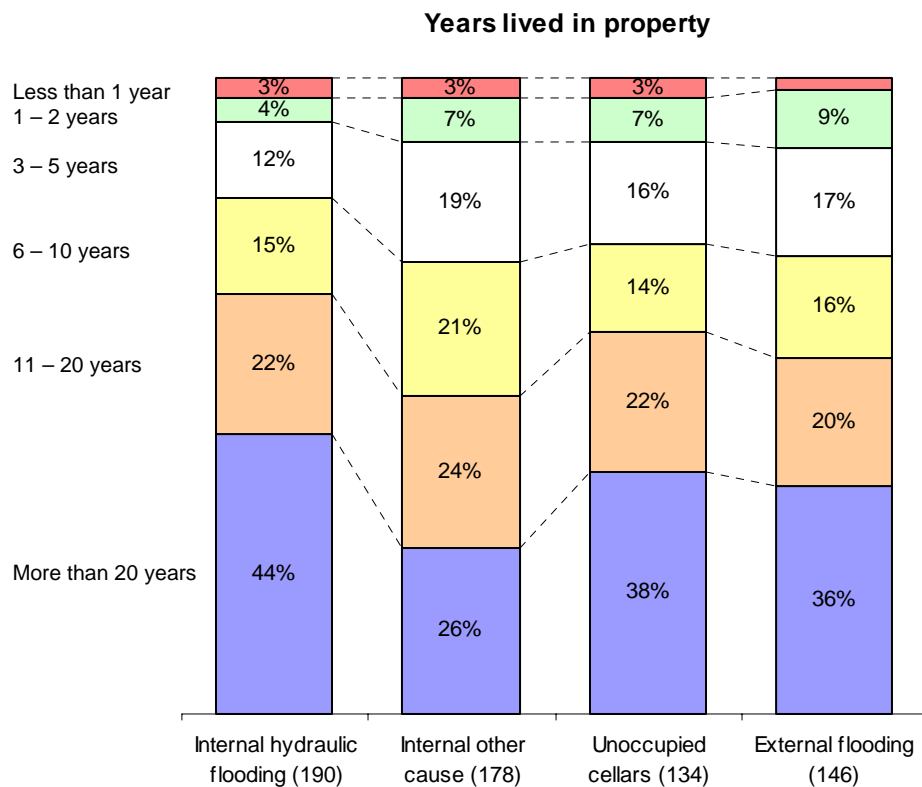
Compared to the average:

- Fewer customers who have been internally flooded due to hydraulic causes and externally flooded live in terraced homes (27% and 21% respectively vs. 35%). However, disproportionately more who have experienced flooding in their unoccupied cellar live in this type of property (55%).
- Fewer customers who have been internally flooded due to other causes live in semi-detached homes (30% vs. 40%).

### 3.3.2. Years customers have lived in property

Q1. How long have you lived in this property?

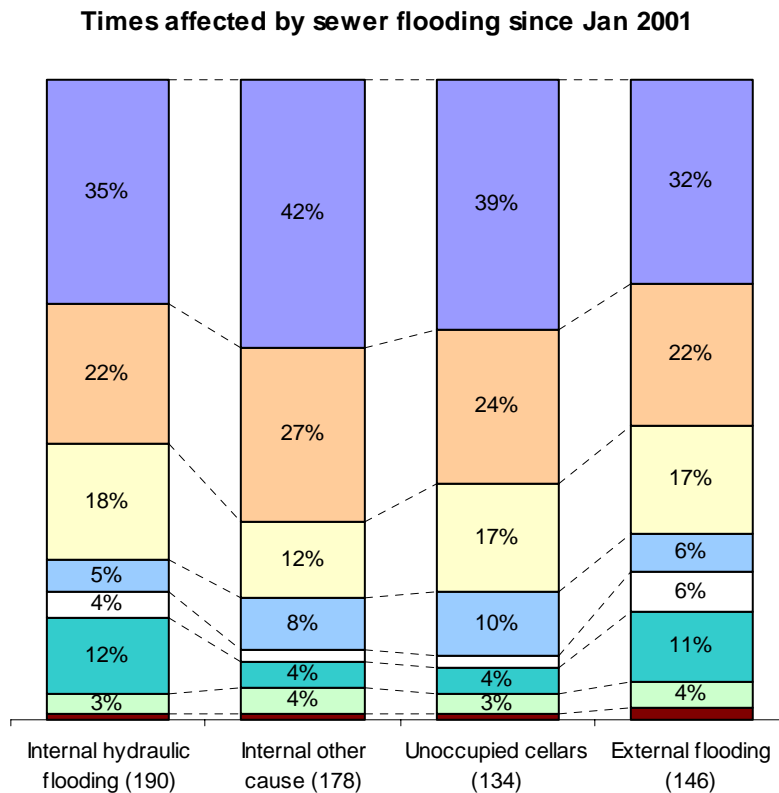
Of those who have experienced sewer flooding at least once since January 2001, some 50% or more have lived in their property more than 10 years. 66% of those who have been internally flooded due to hydraulic causes have lived in their home for this period of time, 50% of those who have been internally flooded due to other causes, 60% of those who have been flooded in their unoccupied cellar and 56% who have been flooded externally.



### 3.3.3. Times affected by sewer flooding in this property since January 2001

Q2. *How many times have you been affected by sewer flooding in this property since January 2001, if any?*

Overall, 63% of all customers surveyed have been affected by flooding more than once since January 2001. The mean is 3.2, the median is 2 and mode is 1.



- More customers who have experienced internal hydraulic flooding or external flooding have been flooded 6 or more times (15%) compared to others.

### 3.3.4. Property known to be at risk of sewer flooding before moved in

Q3. *Did you know your property was at risk of sewer flooding before you moved here?*

Just 2% of customers across all of the flooding causes/types claim that they knew that their home was at risk of sewer flooding before moving in.

	Knew home was at risk
Yes	2%
No	96%
Can't remember	2%

Knowledge of homes being at risk of flooding does not vary significantly across the four causes/types of flooding.

### 3.4. Description of most recent sewer flooding incident

#### 3.4.1. Description of the sewage that affected properties

Q5. Which of the following best describes the sewage that affected you at that time? Was it ...

The majority of customers describe the sewage that affected them most recently as containing faeces or other debris, brown water and/or foul smelling. Only between 2% and 5% describe it as a damp patch, and between 8% and 14% as clear water.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
A damp patch	3%	5%	5%	2%
Clear water	8%	12%	14%	12%
With faeces and other debris	66%	61%	44%	70%
Brown water	67%	63%	71%	63%
Foul smelling	74%	76%	78%	80%
Base:	190	178	134	146

Fewer customers who experienced flooding in their unoccupied cellar claim that the flooding contained faeces or other debris (44%) compared to the average (61%).

### 3.4.2. Weather conditions during last sewer flooding incident

Q7. *What was the weather like at that time? Was it ....*

The greatest proportion of customers suggest that their last experience of sewer flooding was accompanied by heavy rain. Between 43% and 81% suggest this.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Dry	3%	20%	25%	12%
Light rain/drizzle	1%	8%	8%	5%
Heavy rain	81%	53%	43%	63%
Prolonged rain	24%	28%	20%	23%
Other	1%	2%	2%	1%
Don't know	1%	6%	13%	4%

Base: 190 178 134 146

Compared to the average (62%), significantly more of those who have experienced internal hydraulic flooding (81%) and fewer who experienced flooding in their unoccupied cellar (43%) suggest it was raining heavily at the time of their last incident.

Compared to the average (14%), significantly more customers who experienced flooding in their unoccupied cellars (25%) suggest the weather was dry at the time of the last incident.

### 3.4.3. Perceived cause of sewer flooding

Q6. Do you know whether the sewer flooding on your property was due to any of the causes listed on SHOWCARD 1?

- |   |  |
|---|--|
| <i>Blockage in the sewer pipe</i>           | <i>Equipment failure in the sewer pipe</i> |
| <i>Collapse of the sewer pipe</i>           | <i>Other cause (please specify)_____</i>   |
| <i>Overload/sewer pipe not large enough</i> | <i>Don't know</i>                          |

66% of customers flooded internally due to hydraulic causes perceive that the flooding was due to overloaded sewer pipes. This compares to 40% of those flooded externally, 32% internally flooded due to other causes and 19% of those flooded in their unoccupied cellar.

By contrast, 65% of those flooded internally due to other causes, 69% flooded in their unoccupied cellar and 50% flooded externally believe the flooding was due to another reason, that is a blockage, equipment failure, collapse of the sewer pipe or other reason. 26% of those who experienced internal hydraulic flooding suggest this was also the cause.

Between 17% and 21% do not know the cause of their flooding.

Together the figures sum to more than 100% due to a number of customers believing the flooding to their home was due to multiple causes.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Overload	66%	32%	19%	40%
Blockage	17%	48%	52%	38%
Equipment failure	7%	9%	4%	6%
Collapse	4%	19%	16%	6%
Other	1%	2%	2%	1%
Don't know	18%	17%	17%	21%

Base: 190 178 134 146

### 3.4.4. Main points of entry of the sewage into properties

Q11. Looking at SHOWCARD 2, what were the main points of entry of the sewage into the property?

Seepage up through floor

Air bricks

External door

Toilet

Bath or shower drain/ plug hole

Drain or gully

Other (please specify) \_\_\_\_\_

Customers have typically identified multiple points of entry of the sewage into their property. External doors, air bricks and drains, gullies and/or manholes were the main points of those affected by internal hydraulic flooding. For those flooded internally due to other causes, entry points were slightly more varied than those just mentioned. However, for those flooded in their unoccupied cellar seepage through the floor and drains, gullies and/or manholes were the main points of entry.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars
External door	50%	25%	2%
Air bricks	33%	13%	11%
Drain, gully or manhole	31%	32%	35%
Seepage up through floor	17%	32%	52%
Toilet	12%	16%	2%
Bath or shower drain/ plug hole	5%	8%	1%
Through wall	1%	6%	10%
Other	1%	1%	1%
Don't know	2%	4%	7%

Base:

190

178

134

### 3.4.5. Time sewage remained in the local road outside properties

Q9. *How long did the sewage, including any rubbish or debris, remain in the road before it drained away or was cleaned away? Was it.....*

Most typically sewage remained in local roads outside flooded properties for just one day or less before it drained away or was cleaned away.

Time sewage remained in local road	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Less than an hour	10%	8%	0%	8%
Half day or less	46%	34%	36%	39%
1 day	24%	30%	36%	27%
2 days	15%	15%	14%	9%
3 – 5 days	3%	6%	7%	9%
More than 5 days	1%	2%	7%	4%
Don't know	0%	4%	0%	3%
Not cleaned away	1%	0%	0%	2%

\*Base: 123 47 14 67

\*Includes only those customers who reported flooding in their local road outside their property

## **Section 4: Emotional impact on customers of sewer flooding**

This section looks at the overall emotional impact of sewer flooding on customers. Unlike Section 3, which compares the four causes/types of flooding in a single chart or table, this Section combines all four types in the charts and relies on the accompanying text to highlight any statistically significant differences across customers and cause/type of flooding.

### **4.1. Summary**

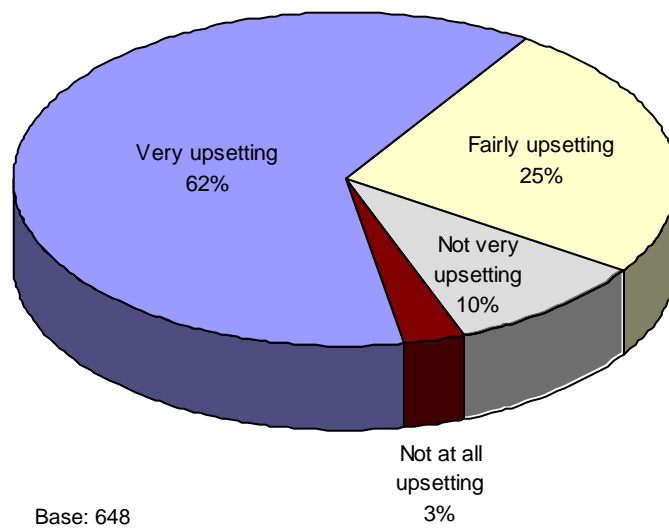
- Customers confirmed that being sewer flooded is an upsetting experience. Most customers found their experience very upsetting (62%) or fairly upsetting (25%). More of those flooded internally describe their experience as very upsetting than those flooded elsewhere.
- 93% of customers agreed that they would not wish their experience on anyone else, though 67% feel that things could have been a lot worse.
- 50% of customers feel that recovering from the sewer flooding incident has been very difficult emotionally.
- The majority are also concerned about health and sickness implications (65% very and 18% fairly concerned).
- The majority of customers are concerned about leaving their property for a period of a week, perhaps to go on holiday (43% very and 22% fairly).
- However, the majority (85%) do not want to move from their home as a result of their sewer flooding experience.

#### 4.2. Extent to which the experience was upsetting

Q45. Thinking about your last experience of sewer flooding, how upsetting would you say it was overall?

62% of customers describe their most recent sewer flooding experience as very upsetting and 25% as fairly upsetting.

**Extent to which most recent experience was upsetting**



Most upset are those who have been flooded internally. A significantly greater proportion of customers flooded internally due to hydraulic causes (73%) and other causes (67%) suggest their experience was very upsetting compared to those who were flooded in their unoccupied cellar (49%) and those flooded externally (55%).

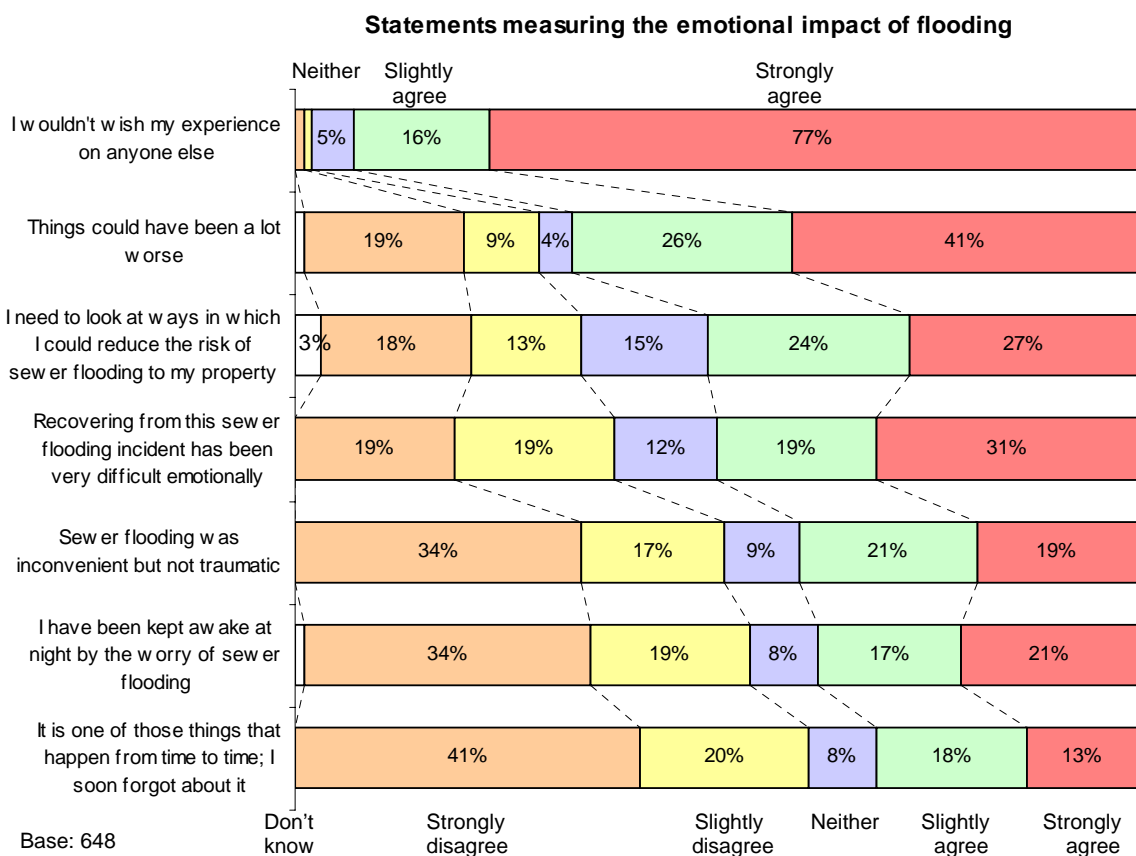
### 4.3. Statements measuring the emotional impact of flooding

Q46. To what extent do you agree or disagree with the following statements?

93% of customers who have experienced flooding agree that they would not wish their experience on anyone else, though 67% feel that things could have been a lot worse. 51% feel that they need to look at ways in which they could reduce the risk of sewer flooding to their home.

50% of customers feel that recovering from the sewer flooding incident has been very difficult emotionally and 38% have been kept awake at night by the worry of flooding.

61% do not accept that sewer flooding is one of those things that happens from time to time, which they soon forgot about, and 51% disagree that the sewer flooding was inconvenient but not traumatic.



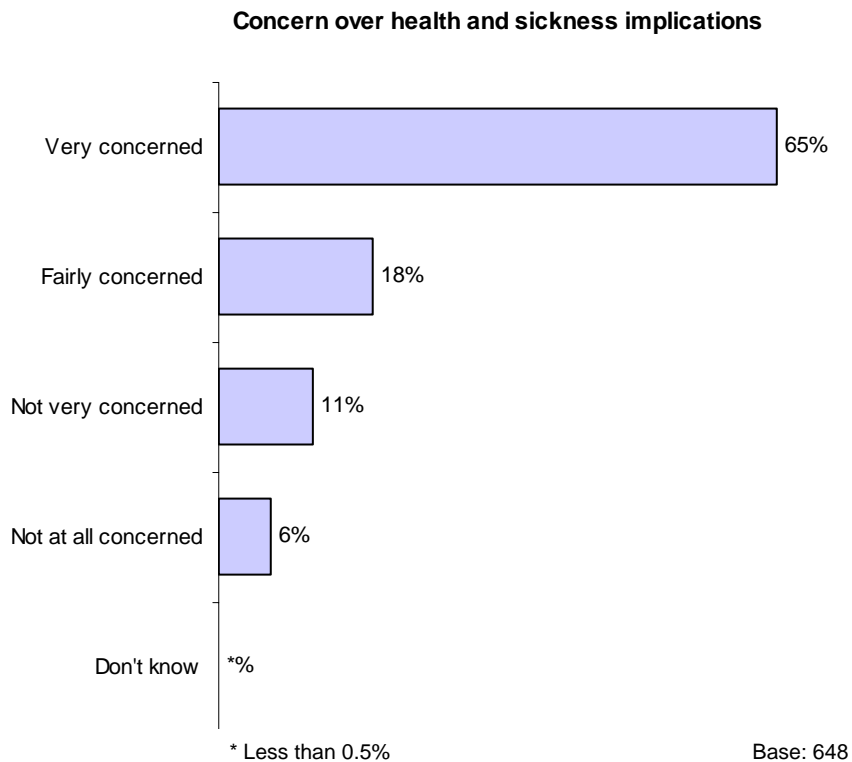
Again, it is clear that sewer flooding caused most upset and emotional distress amongst those flooded internally. Compared to the average:

- More customers who have been flooded internally due to hydraulic causes agree either strongly or slightly that they wouldn't wish their experience on anyone else (97% vs. 93%).
- More customers who have been flooded in their unoccupied cellar strongly agree that things could have been a lot worse (58% vs. 41%). Additionally, more customers who have been flooded internally due to other causes strongly disagree (30% vs. 19%) with this statement.
- More customers who have been flooded internally due to other causes strongly agree that they need to look at ways in which they could reduce the risk of sewer flooding to their home (37% vs. 27%). By contrast, fewer customers who have been externally flooded strongly agree with this statement (18% vs. 27%).
- More customers who have experienced internal hydraulic flooding strongly agree that recovering from their sewer flooding incident has been very difficult emotionally (43% vs. 31%). Fewer customers who have been flooded in their unoccupied cellar or externally strongly agree (19% and 23%).
- More customers who have been flooded in their unoccupied cellar strongly agree that sewer flooding was inconvenient but not traumatic (31% vs. 19%). More who have experienced internal hydraulic flooding strongly disagree (47% vs. 34%).
- More customers who have been internally flooded due to other causes strongly agree that they have been kept awake at night by the worry of sewer flooding (29% vs. 21%) and more who have experienced internal hydraulic flooding slightly agree (26% vs. 17%). More customers who have been flooded in their unoccupied cellar strongly disagree (48% vs. 34%).
- More customers who have been flooded in their unoccupied cellar either strongly or slightly agree that sewer flooding is one of those things that happen from time to time and they soon forgot about it (44% vs. 31%). Fewer customers who have experienced internal hydraulic flooding agree with this statement (22%).

#### 4.4. Concerns over health and safety implications

Q47. *How concerned were you about the health and sickness implications of the sewer flooding on you and your household?*

83% of customers who experienced sewer flooding were concerned about the health and sickness implications for themselves and their family; 65% were very concerned.



Compared to the average:

- Fewer of those who were flooded in unoccupied cellars (52% vs. 65%) were very concerned.
- More of those who describe the sewage that affected them as containing faeces or other debris (78%) and as foul smelling (73%) were very concerned.
- Fewer of those who describe the sewage that affected them as clear water (49%) were very concerned.
- More of those who describe their most recent sewer flooding experience as very upsetting (85%) were very concerned.

#### 4.5. Concerns over leaving the property

Q48. *With sewer flooding in mind, how concerned are you generally about leaving your property .....*

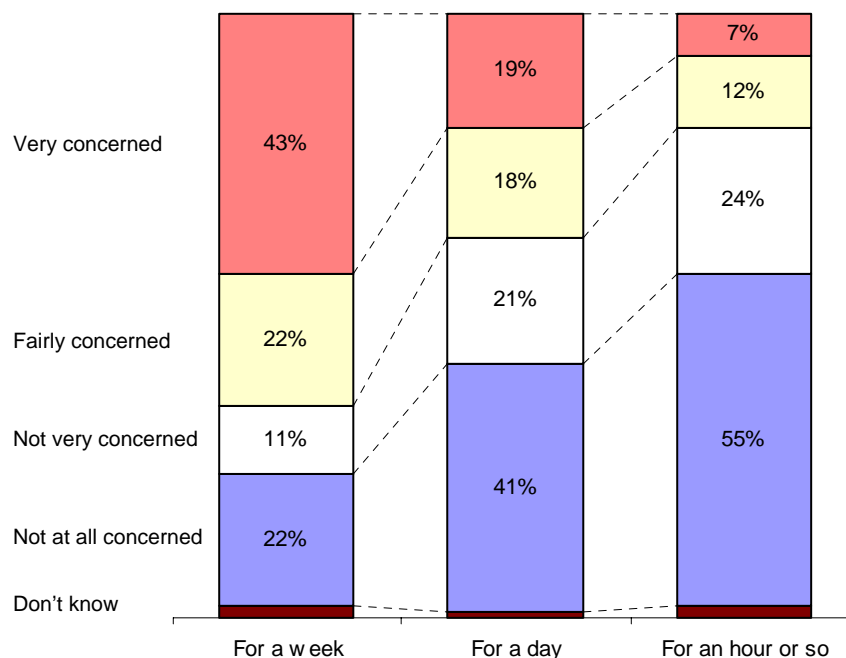
*For a week, perhaps to go on holiday*

*For a day, perhaps to go to work or visit a friend*

*For an hour or so, to pop down to the local shops for example*

65% of customers are concerned about leaving their property for a week; 43% say they are very concerned. Overall concern falls to 37% when customers consider leaving their property for a day and 19% when leaving it for an hour or so. For the latter, 55% claim not to be at all concerned.

**Concern about leaving the property**



Base: 648

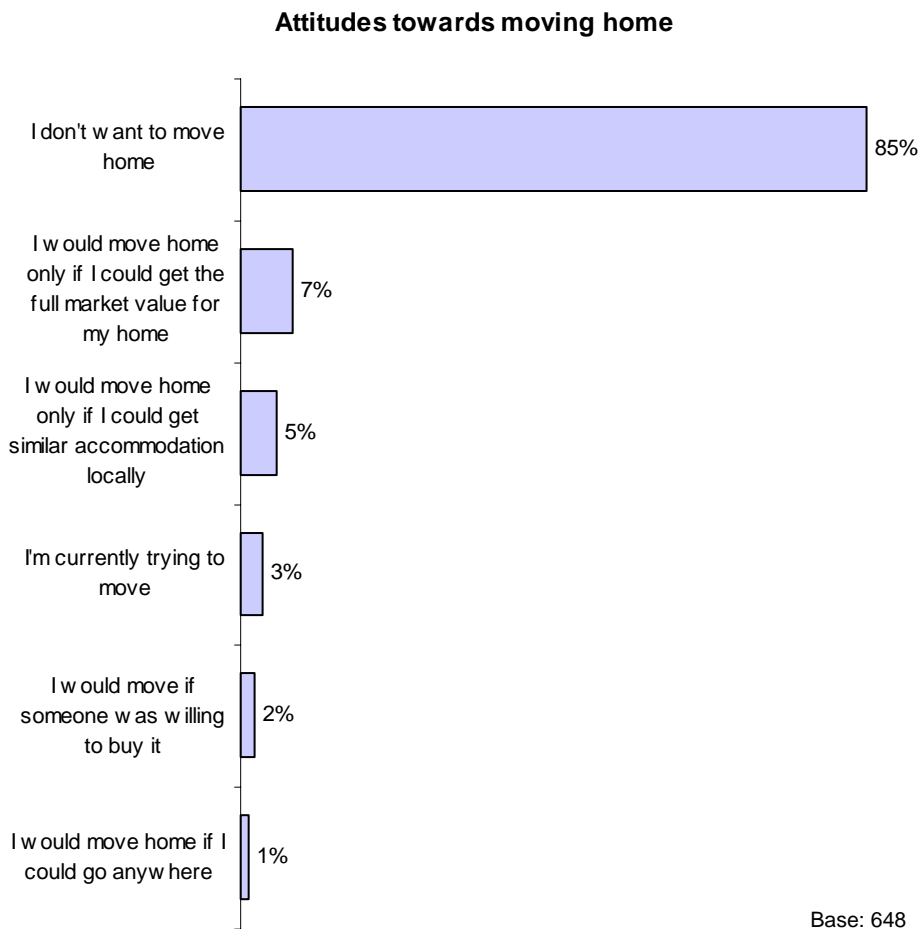
Customers flooded internally due to hydraulic causes are most worried about leaving their home. Compared to the average:

- More customers who have been flooded internally due to hydraulic causes are very concerned about leaving their property for a week (59% vs. 43%), a day (30% vs. 19%) and an hour or so (14% vs. 7%).
- Fewer customers who have been sewer flooded in their unoccupied cellar are very concerned about leaving their property for a week (25% vs. 43%), a day (5% vs. 19%) and an hour or so (1% vs. 7%).

#### 4.6. Attitudes towards moving home permanently

Q56. As a result of your sewer flooding experience, which of the statements on SHOWCARD 8 best describe your attitude towards moving from your home?

85% of customers do not want to move from their home as a result of their sewer flooding experience. Just 7% say they would move only if they could get the full market value and 5% only if they could get similar accommodation locally. Fewer customers give other reasons.



- A greater proportion of customers aged 55 and over suggest they don't want to move home (89%) compared to those aged 18 to 34 (75%). This is the only statistically significant difference evident.

#### **4.7. Other experiences of sewer flooding**

Q57. *Lastly, ... is there anything else you would like to tell me about or other experiences you have had of sewage flooding at this property?*

Overall, 59% of customers commented on experiences they have had with sewer flooding on their property at this question.

20% of these comments suggest that their water and sewerage company should do more to help prevent future sewer flooding incidents. Compared to this average, significantly fewer customers who have been internally flooded due to other causes (13%) and those flooded in their unoccupied cellar (11%) have mentioned this.

18% feel more should be done or should have been done to help with current and past incidents, 17% of comments focus on the most recent sewer flooding incident and 15% on a past incident. Significantly more of those who have been flooded in their unoccupied cellar (31%) mentioned their most recent experience compared to the average.

7% of comments relate to sewer flooding and heavy rainfall, 6% to problems associated with new housing developments, 4% on the emotional impact of sewer flooding incidents and 4% on bad smells associated with incidents. 14% of customers made other comments.

Below are typical comments made by customers.

##### **4.7.1. WASC to do more to avoid future flooding incidents**

*A "water company" surveyor suggested fitting of non-return valves in the sewer pipes but nothing has happened.*

*For it not to happen. We need safe guards. Too much talk and not enough done about it.*

##### **4.7.2. WASC to do more to help with past/current flooding incident**

*Biggest problem is trying to get someone out quickly to deal with problem as it's happening and to provide sandbags.*

*I feel they should come and check 6mths from when it happened. Really slow off the mark, kept being passed around, kept saying it was someone else and I was ringing here, there and everywhere. Not happy with response.*

*We want some answers from "water company", why did it happen? Who is at fault? Whose responsibility is it?*

#### **4.7.3. Comments on recent flooding incidents**

*I think it might be a blockage due to trees but I don't know.*

*I was very happy with the speed efficiency with which "water company" have dealt with this.*

*I'm worried about rain and drainage. I'm concerned that I didn't get any assurances that it had been sorted out. The lawn was damaged and it should have been replaced.*

#### **4.7.4. Flooding due to heavy rainfall**

*Every time we have heavy rain it gets flooded. Work has been carried out by looking at the pipes by camera but it is still an ongoing severe problem.*

*I get flooded by excessive rain very often which comes down road, down drive and then through garden i.e. 3 times a year. I have photographs to show the recent flooding on drive/yard/garden.*

#### **4.7.5. New housing developments**

*Further concern about additional new houses without making provision for suitable drains and making sure existing sewerage system can deal with extra load.*

*Problem has become worse since new developments have been built and overloaded the sewerage system.*

*Sewage flooding has been a problem for the last ten years, probably due to extra building of houses in the area.*

#### **4.7.6. Emotional impact and problems with odour**

*Has gone on for a lot of years and I'm sick and tired of it. It's very distressing.*

*There is no real damage. It's more the distress it causes.*

*A very traumatic experience and the awful smell lasted three weeks until all the work was finished.*

*It just stinks rotten. The manhole outside gets full and a really bad smell is in the bathroom.*

*We get terrible smells in the kitchen lasting half to three quarters of an hour. It always happens when they're flushing at the local pumping station.*

#### **4.7.7. Other comments**

*I'm hopeful that things will now be better as they have just completed work in the road.*

*There is a school nearby and we are very concerned that the children will catch something as the drains can sometimes overflow there from here.*

## **Section 5: Impact of internal flooding on customers**

This Section assesses the impact that sewer flooding has had on customers who have been flooded internally. It considers the work that has been undertaken to recover from the flooding inside their home, in their cellar or basement if they have one and externally where their garden, driveway or other area was affected.

### **5.1. Summary**

- Typically internal flooding due to lack of hydraulic capacity seems to have a more widespread effect inside and outside the home than flooding due to other causes such as blockages. More hydraulic flooded customers experienced flooding in their garden, driveway, garage or shed as well as various rooms of the home than those flooded due to other causes.
- Just over half of internally flooded customers experienced flooding of up to 3 inches, although half of these experienced flooding half an inch deep or less.
- For around 70% of customers sewage remained in the property for 2 days or less, though half of these were flooded for less than one day.
- The majority (over 75%) needed their home to be disinfected and cleaned in order to return it to its original condition. Just over 50% did the work themselves and the water and sewerage companies did it for most of the others (30% to 38%). Those who did the work generally paid for it.
- Between 33% and 40% of customers needed to pump the flooding out of their property. In around 50% of cases this was done and paid for by the water and sewerage companies.
- A significant proportion of customers also replaced floor coverings (about 40%) and redecorated walls (about 30%). Fewer needed to take further actions such as replacing furnishings or appliances. These tasks and their associated costs were typically spread between customers and insurance companies.

## 5.2. Areas of the property that have been flooded

Q8. *I am now going to ask you about the areas in and around your property which were affected by sewer flooding. As we work through this, I'd like you to tell me only about your most recent experience of sewer flooding. There will be an opportunity to add any additional comments you want to make about any earlier problems at the end of the interview.*

*So, thinking about your most recent experience, which of the following were affected?*

*Local road outside your property*

*Your garden and/or driveway*

*Detached garage, garden shed or greenhouse*

*Your cellar or basement area of your home*

*Elsewhere inside your home &/or integral/attached garage*

*Any other areas not mentioned (please specify)*

190 customers (29% of those surveyed) are defined as having experienced internal hydraulic flooding. This means:

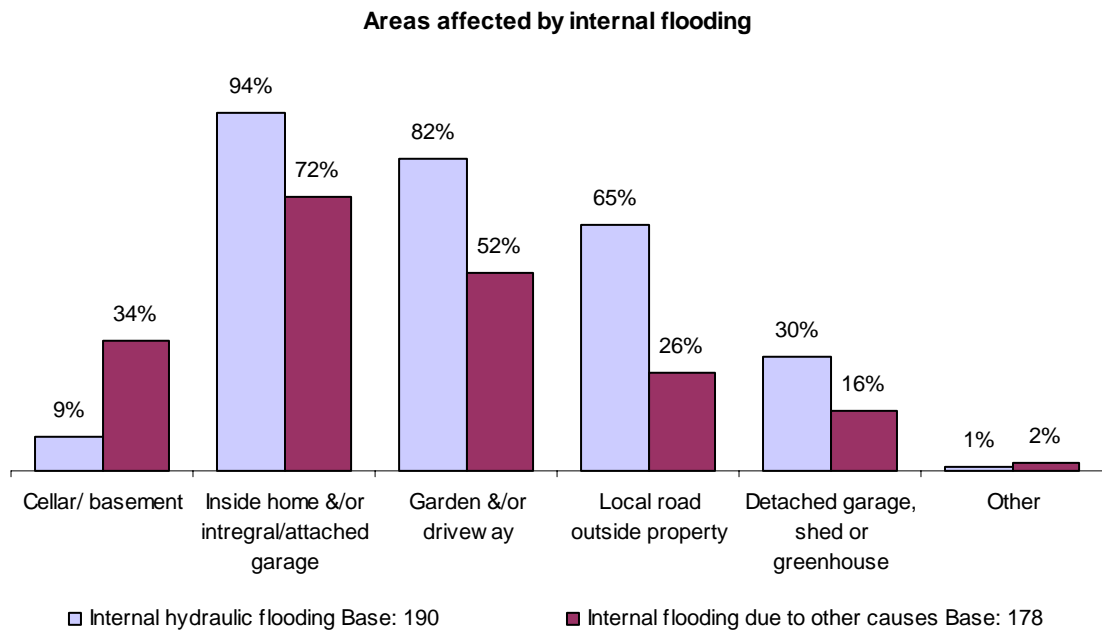
- These customers claim that they have experienced internal flooding, either in their cellar or basement that they use for habitable purposes, their integral/detached garage or elsewhere in their home
- And their property is registered by their water and sewerage company as having been flooded due to hydraulic causes.

178 customers (27% of those surveyed) are defined as having experienced internal flooding due to other causes. This means:

- These customers claim that they have experienced internal flooding in one or more of the same internal areas
- But, by contrast to those above, their property is not registered as having been flooded due to hydraulic causes. Any records of the flooding held by their water and sewerage company denotes other causes.

A significantly greater proportion of customers who have experienced internal hydraulic flooding claim that the flooding affected more areas of their property than those internally flooded due to other causes.

Only in their cellar have a greater proportion of customers flooded internally due to other causes experienced problems (34% vs. 9%); this is irrespective of whether or not the cellar was habited.



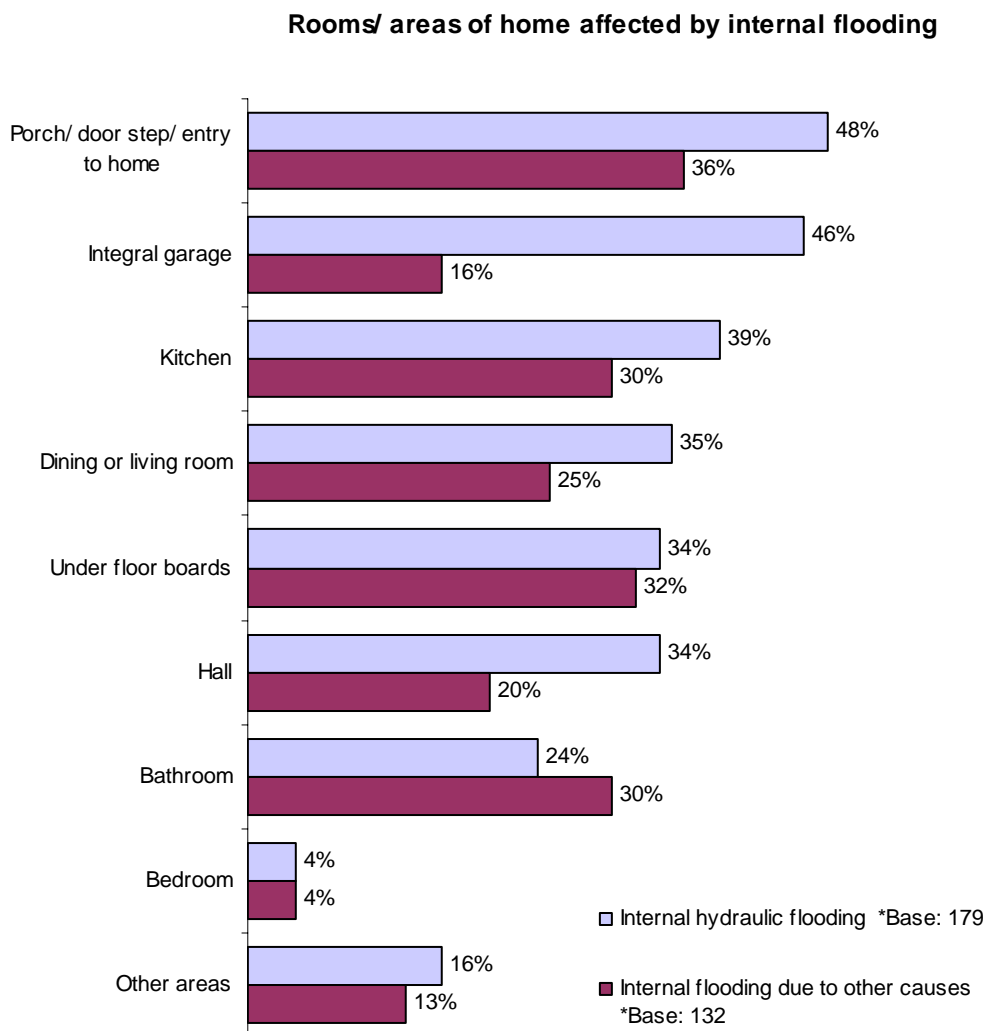
### 5.3. Impact of sewer flooding inside the home

This sub-section looks at the impact that internal flooding due to hydraulic and other causes has had inside customers' homes. It specifically excludes cellar and basement areas, which are covered in 5.4.

#### 5.3.1. Rooms/ areas inside the home that have been flooded

Q16. Which of the following rooms or areas in your property were affected?

Hydraulic flooding is more widespread across customers' homes than other causes of flooding. Significantly more customers who experienced internal hydraulic flooding claim to have been affected in or around their porch, door step or entry to their home, their integral garage and hall.



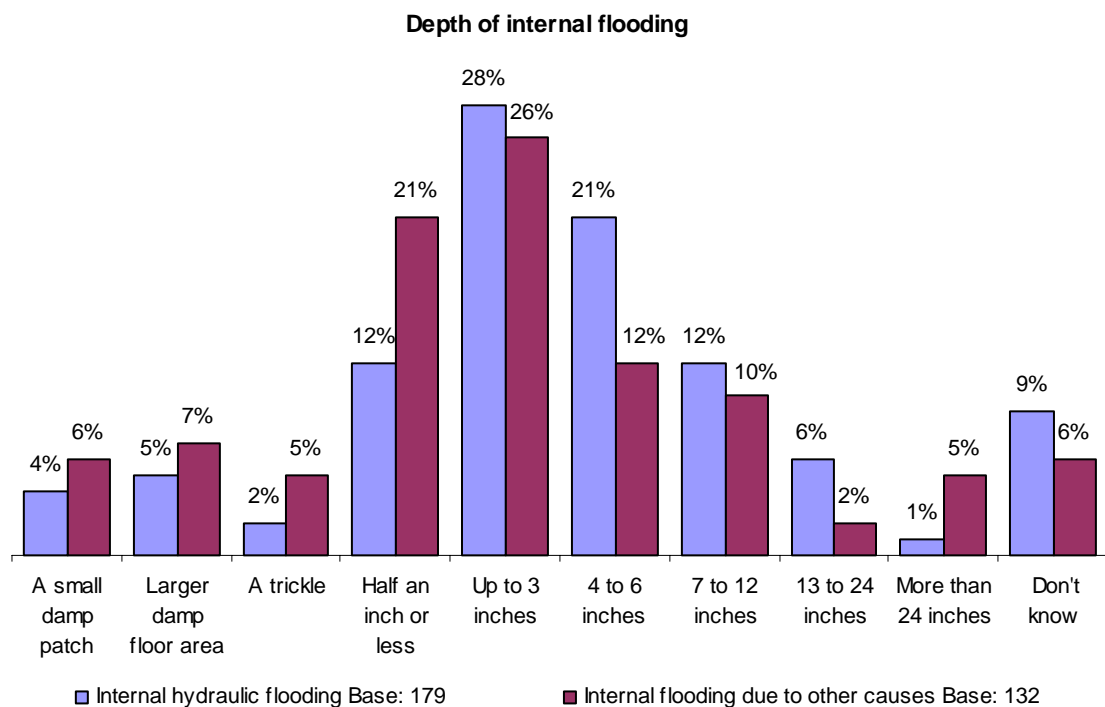
\*Base includes only those customers flooded inside their home but not their cellar. Cellar flooding is addressed in Section 5.3.

### 5.3.2. Depth and duration of internal flooding

Q17. How deep was the flooding inside your property? Was it....

Q10. How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....

Just over half of internally flooded customers experienced flooding of up to 3 inches, although half of these experienced flooding half an inch deep or less. 7% of customers experienced flooding of 13 inches or more.



For around 70% of customers sewage remained in the property for 2 days or less and half of these were flooded for less than one day. For 18% to 20% of customers sewage remained for a week or more.

Time sewage remained in home	Less than 1 day	1 – 2 days	3 – 4 days	1 week	More than 1 week	Don't know
Internal hydraulic flooding Base: 179	33%	39%	10%	10%	8%	0%
Internal flooding due to other causes Base: 129	41%	30%	8%	6%	14%	1%

### 5.3.3. Ability to flush the toilet during the period of the flooding

Q18. Were you able to flush your toilet during the period of the flooding? (IF MORE THAN ONE – FOCUS ON THE ONE AT GROUND LEVEL)

Q19. How long weren't you able to flush your toilet?

32% of customers who experienced internal hydraulic flooding and 42% who were internally flooded due to other causes recall being unable to flush their toilet at the time of the sewer flooding. However, between 14% and 30% do not remember this aspect of the incident.

Ability to flush toilet	Internal hydraulic flooding	Internal flooding due to other causes
Yes	38%	43%
No	32%	42%
Don't know	30%	14%
<i>Base:</i>	179	132

Most typically customers were prevented from flushing their toilet for half a day or less.

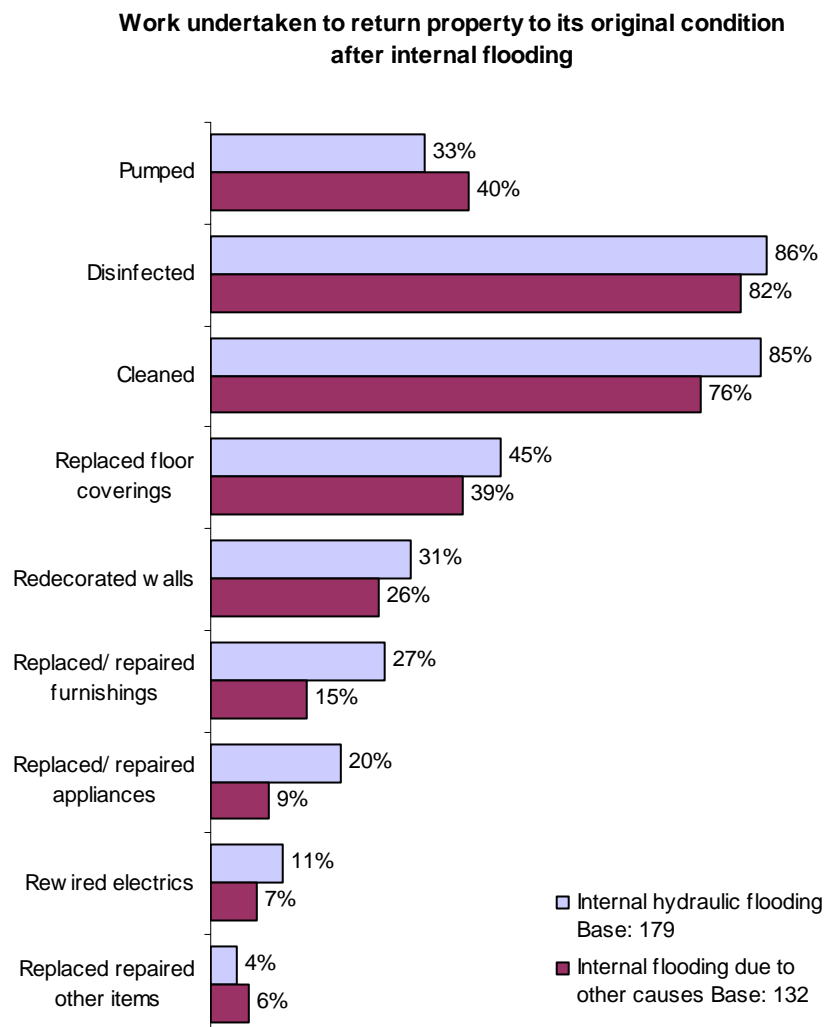
Time unable to flush toilet	Internal hydraulic flooding	Internal flooding due to other causes
Less than an hour	2%	7%
Half a day or less	56%	46%
1 day	18%	23%
2 days	12%	11%
3 to 5 days	5%	7%
More than 5 days	4%	4%
Don't know	3%	2%
<i>Base:</i>	57	56

### 5.3.4. Work undertaken inside the home to return it to its original condition

Q20. Once the flooding subsided in your property, what was done to return it to its original condition?

The largest proportion of customers who experienced internal flooding, over 75%, required their home to be disinfected and cleaned in order to return it to its original condition. Between 39% and 45% needed to replace floor coverings, and slightly fewer had to have the flooding pumped out.

Between 26% and 31% of customers needed to redecorate after the flooding subsided, between 15% and 27% repaired or replaced furnishings, and 20% or fewer repaired or replaced appliances, other items or rewired the electrics.



The table below shows the number of rooms that required work undertaking to return the property to its original condition. It shows, for example, that for properties where the flooding was pumped out, between one and seven rooms were affected, though the average (mean) was just over two and the mid-point (median) was one.

	Range	Average number of rooms affected	Median of rooms affected	Base:
Pumped	1 to 7	2.15	1	112
Disinfected	1 to 7	2.18	2	262
Cleaned	1 to 7	2.13	1	253
Replaced floor coverings	1 to 9	2.63	2	131
Redecorated walls	1 to 7	2.89	3	89
Replaced/ repaired furnishings	1 to 7	2.96	3	69
Replaced/ repaired appliances	1 to 7	2.53	2	47
Rewired electrics	1 to 7	3.14	3	29
Replaced/ repaired other items	1 to 3	1.31	1	16

The range shows the smallest and largest values of the distribution (number of rooms affected). The average number of rooms affected provides a measure of the central tendency of the distribution and the mean is the mid-point of the distribution (the value below which half the values in the distribution fall).

- 80% of customers who had to redecorate after experiencing internal hydraulic flooding, had to redecorate more than one room. This compares to 53% of those who experienced internal flooding due to other causes. This is the only area of work where there is a significant difference in the number of rooms affected.

### 5.3.5. Persons/ organisations that did the work inside the home

Q21. Who did the work?

Where the inside of homes required disinfecting and cleaning, more than 50% of customers and their family and friends undertook the tasks themselves, irrespective of whether they were flooded due to hydraulic or other causes. Most others had the work undertaken for them by their water and sewerage company. Where homes required the replacement of floor coverings and/or redecorating, between 42% and 59% of customers did the work themselves and between 33% and 46% had it done for them by their insurance company.

Only in the case of the repair or replacement of furnishings, appliances and other items (such as clothing, footwear and toys) are there statistically significant differences between those who did the work according to the cause of flooding experienced. In the case of those hydraulically flooded, for example, a greater proportion had their furnishings and appliances repaired or replaced by their insurance company and fewer had other items repaired or replaced by them than those flooded by other causes.

Internal hydraulic flooding					
Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/orgn.	Base:
Pumped	30%	48%	3%	20%	59
Disinfected	52%	38%	18%	1%	154
Cleaned	64%	30%	17%	1%	152
Replaced floor coverings	42%	9%	46%	4%	80
Redecorated walls	54%	2%	44%	2%	55
Replaced/ repaired furnishings	<b>35%</b>	6%	<b>63%</b>	0%	49
Replaced/ repaired appliances	31%	0%	69%	0%	35
Rewired electrics	35%	0%	60%	5%	20
Replaced/ repaired other items	63%	25%	12%	0%	8

Internal flooding due to other causes					
Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/orgn.	Base:
Pumped	26%	53%	11%	17%	53
Disinfected	54%	41%	8%	4%	108
Cleaned	59%	37%	9%	2%	101
Replaced floor coverings	57%	6%	33%	4%	51
Redecorated walls	59%	0%	44%	0%	34
Replaced/ repaired furnishings	<b>65%</b>	0%	<b>30%</b>	10%	20
Replaced/ repaired appliances	58%	0%	33%	8%	12
Rewired electrics	67%	0%	33%	0%	9
Replaced/ repaired other items	38%	12%	62%	0%	8

### 5.3.6. Persons/organisations who paid for the work inside the home

Q22. Who PAID for the work to be undertaken?

Where internal areas required disinfecting and cleaning, between 46% and 55% of customers paid for the work to be undertaken themselves and in 30% to 44% of cases water and sewerage companies paid. Though only 18% of insurance companies paid where customers were flooded due to hydraulic causes and 7% where they were flooded due to other causes, the differences in these figures are statistically significant.

Where homes required the replacement of floor coverings and/or redecorating, between 31% and 47% of customers paid for the work themselves and between 45% and 58% had it paid for by their insurance company. As in the case of who did the work, statistically significant differences exist between those who paid for the work according to the cause of flooding experienced for the repair or replacement of furnishings, appliances and other items; more of those hydraulically flooded had their furnishings and appliances repaired or replaced by their insurance company and fewer had other items repaired or replaced by them than those flooded by other causes.

Internal hydraulic flooding					
Who paid	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/orgn.	Base:
Pumped	29%	49%	7%	17%	59
Disinfected	46%	39%	18%	1%	154
Cleaned	54%	30%	18%	2%	152
Replaced floor coverings	34%	8%	58%	2%	80
Redecorated walls	42%	2%	53%	4%	55
Replaced/ repaired furnishings	20%	6%	76%	2%	49
Replaced/ repaired appliances	20%	0%	80%	0%	35
Rewired electrics	25%	0%	70%	5%	20
Replaced/ repaired other items	50%	25%	25%	0%	8

Internal flooding due to other causes					
Who paid	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/orgn.	Base:
Pumped	26%	55%	9%	15%	53
Disinfected	50%	44%	7%	4%	108
Cleaned	55%	40%	9%	2%	101
Replaced floor coverings	31%	18%	45%	8%	51
Redecorated walls	47%	3%	53%	0%	34
Replaced/ repaired furnishings	60%	5%	35%	10%	20
Replaced/ repaired appliances	58%	8%	33%	17%	12
Rewired electrics	56%	0%	56%	0%	9
Replaced/ repaired other items	25%	12%	75%	0%	8

## 5.4. Impact of flooding inside the cellar/basement

This sub-section looks at the impact that internal flooding due to hydraulic and other causes has had in the cellar/basement areas of customers' homes.

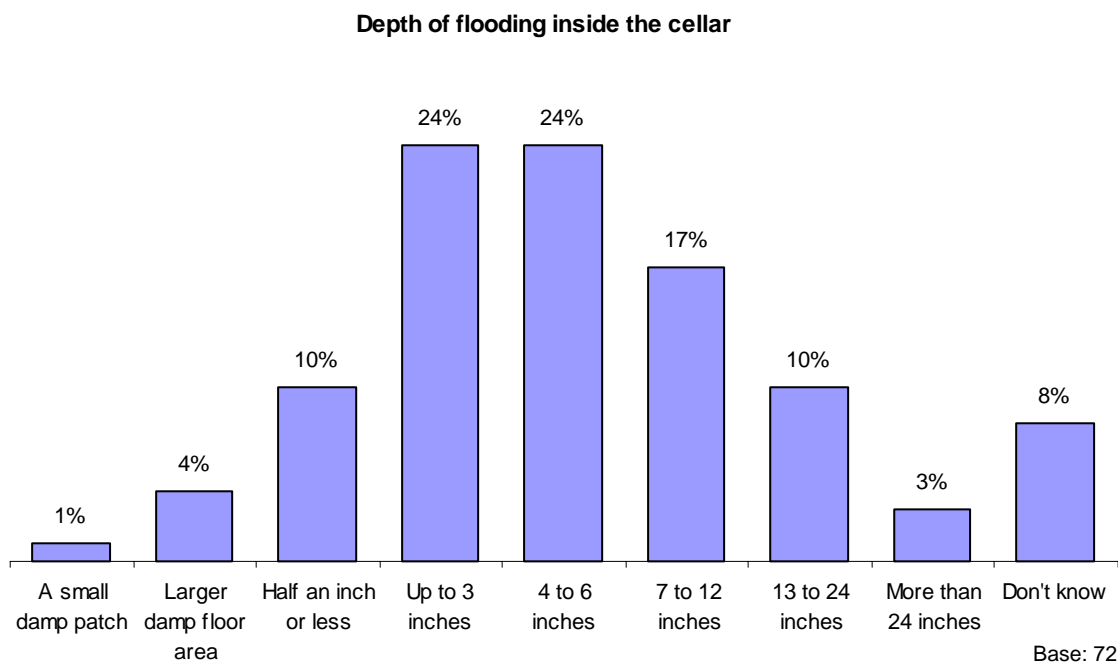
### 5.4.1. Depth and duration of the flooding inside the cellar/basement

Q13. *How deep was the flooding inside your property? Was it....*

Q10. *How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....*

9% of customers surveyed who have experienced internal hydraulic flooding and 34% of those who have experienced internal flooding due to other causes have a cellar or basement which has been affected by sewer flooding. Due to the small sample size, data relating to the cellar/basement has been combined for the two causes.

Flooding was between half an inch and 6 inches deep for 48% of these customers and 7 or more inches deep for 30%.



Sewage, including rubbish or debris, remained in the cellar of 29% of customers less than one day. For 34% it remained there for one to two days, 20% between three days and a week and 16% longer than one week.

Time sewage remained in...	Less than 1 day	1 – 2 days	3 – 4 days	1 week	More than 1 week	Don't know
Cellar/basement Base: 77	29%	34%	10%	10%	16%	1%

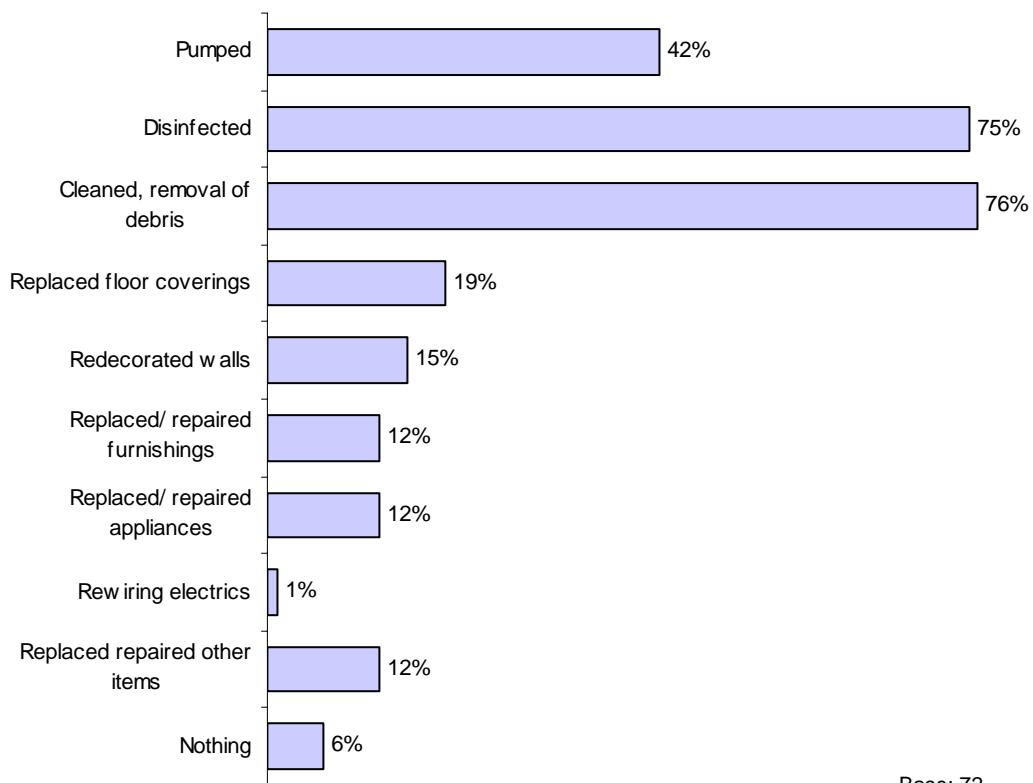
#### 5.4.2. Work undertaken in the cellar/basement to return it to its original condition

Q14. Looking at SHOWCARD 3, what work was done to return your cellar/basement to its original condition, and by whom once the flooding subsided?

Q15. Who PAID for the work to be undertaken?

Over 70% of customers flooded in their cellar required it to be disinfected and cleaned in order to return it to its original condition. 42% needed to have the flooding pumped out. Additionally, 19% or fewer customers needed parts of the cellar or items in it to be repaired or replaced.

Work undertaken to return cellar/ basement to its original condition



Base: 72

Where the cellar flooding was required to be pumped out, disinfected and/or cleaned, over 40% of customers and their family and friends undertook the tasks themselves, and around the same or slightly more had the work undertaken for them by their water and sewerage company.

Where the cellar required the repair or replacement of furnishings, appliances and/or other items or rewiring, 50% or more customers had these tasks undertaken for them by their insurance company.

Internal flooding					
Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Pumped	43%	57%	7%	3%	30
Disinfected	43%	50%	13%	0%	54
Cleaned	47%	44%	11%	0%	55
Replaced floor coverings	43%	7%	43%	7%	14
Redecorated walls	64%	0%	36%	0%	11
Replaced/ repaired furnishings	33%	11%	56%	0%	9
Replaced/ repaired appliances	33%	0%	67%	0%	9
Rewired electrics	0%	0%	100%	0%	1
Replaced/ repaired other items	38%	12%	50%	0%	8

Those who undertook the work most typically also paid for it, as the table below shows.

Internal flooding						
Who paid	No cost	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Pumped	0%	43%	57%	7%	0%	30
Disinfected	11%	30%	52%	11%	0%	54
Cleaned	6%	42%	44%	11%	0%	55
Replaced floor coverings	0%	36%	7%	50%	7%	14
Redecorated walls	9%	46%	0%	46%	0%	11
Replaced/ repaired furnishings	0%	22%	11%	67%	0%	9
Replaced/ repaired appliances	0%	33%	0%	67%	0%	9
Rewired electrics	0%	0%	0%	100%	0%	1
Replaced/ repaired other items	12%	25%	12%	50%	0%	8

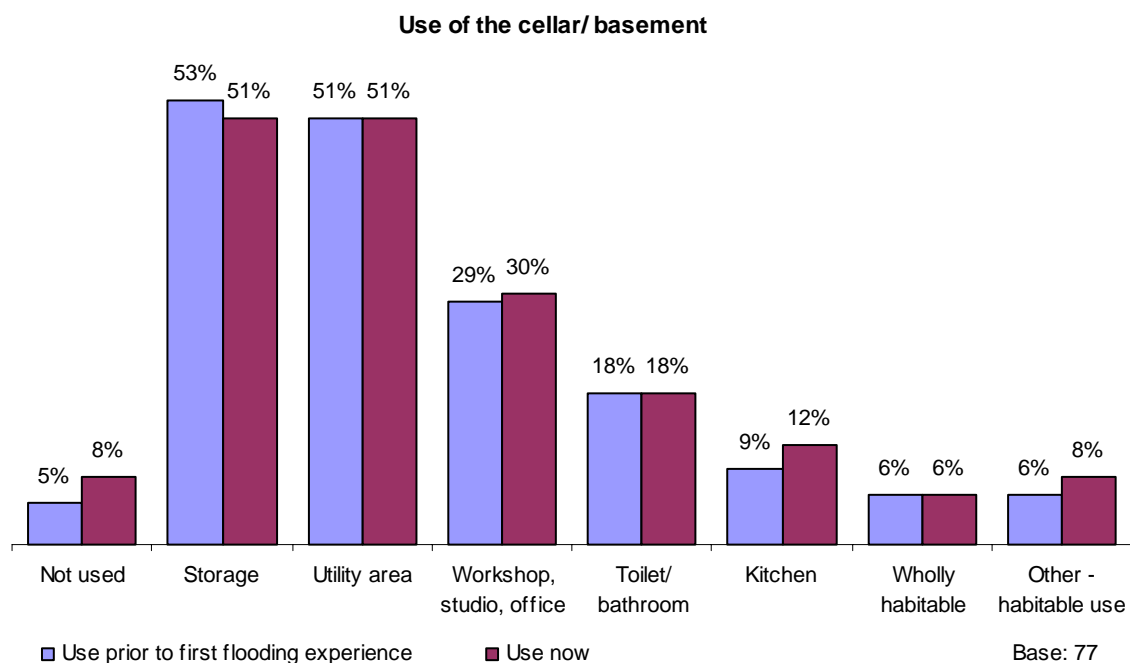
### 5.4.3. Use of cellar/ basement prior to the first flooding incident and now

Q12 (a). How do you use the cellar/basement area of your home?

(b). How did you use your cellar/basement prior to your first experience of sewer flooding?

Despite having experienced at least one sewer flooding incident affecting the cellar, the majority of customers have not changed the way they now use their cellar. Over 92% currently use it, 88% for habitable purposes (e.g. as a utility area or workshop, studio or office) and 51% for storage, though only 4% use it solely for this purpose.

Prior to the first sewer flooding incident, 95% of customers used their cellar (3% more than now).



## 5.5. Impact of sewer flooding outside the home

This sub-section looks at the impact that internal flooding due to hydraulic and other causes has had in external areas customers' properties.

### 5.5.1. Duration of external flooding

Q10. *How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....*

82% of customers who experienced internal hydraulic flooding and 52% of those who experienced internal flooding due to other causes were also flooded externally in their garden and/or driveway. 30% and 16%, respectively, were also flooded in their detached garage, garden shed and/or greenhouse.

Typically the sewage, including any rubbish or debris, remained at the property for up to two days, although for around 30% it remained there for less than one day.

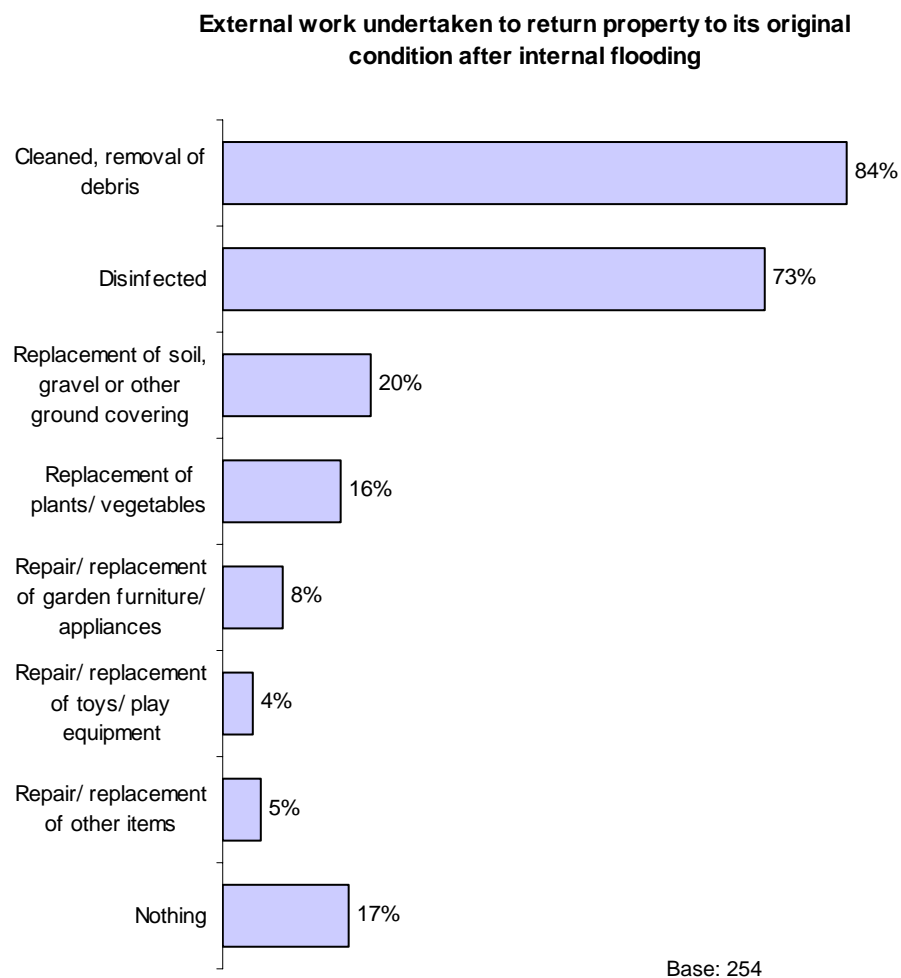
Time sewage remained in...	Less than 1 day	1 – 2 days	3 – 4 days	1 week	More than 1 week	Not cleaned away
Garden/ driveway Base: 249	34%	43%	10%	6%	6%	*%
Detached garage/shed/ greenhouse Base: 86	30%	45%	8%	8%	8%	0%

\* 0.5% or less

### 5.5.2. Work undertaken to return the property to its original condition

Q23. Once the flooding subsided in... , what had to be done to return it to its original condition?

The majority of customers had to clean and disinfect exterior areas of their property. Additionally, 20% had to replace soil, gravel or other ground covering and 16% had to replace plants and vegetables. 17% did nothing externally.



There is no difference in the work undertaken by customers who experienced internal hydraulic flooding and those who were flooded internally due to other causes.

### 5.5.3. Person/ organisation that did the work

Q24. Who did the work?

Q25. Who PAID for the work to be undertaken?

Of those customers who were flooded both internally and externally and needed to have work undertaken on exterior areas of their property to return it to its original condition, over 50% did this work themselves.

Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Disinfected	51%	48%	7%	3%	186
Cleaned, removal of debris	58%	42%	6%	3%	214
Replacement of soil, gravel or other ground covering	60%	28%	10%	4%	50
Replacement of plants/ vegetables	83%	5%	10%	2%	41
Repair/replacement of garden furniture/appliances	75%	0%	25%	0%	20
Repair/replacement of toys/play equipment	73%	0%	27%	0%	11
Repair/replacement of other items	50%	25%	8%	17%	12

Typically those who undertook the work also paid for it.

Who paid	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Disinfected	49%	50%	8%	2%	186
Cleaned, removal of debris	56%	43%	6%	2%	214
Replacement of soil, gravel or other ground covering	64%	24%	12%	2%	50
Replacement of plants/ vegetables	85%	5%	10%	0%	41
Repair/ replacement of garden furniture/ appliances	65%	0%	35%	0%	20
Repair/ replacement of toys/ play equipment	73%	0%	27%	0%	11
Repair/ replacement of other items	50%	25%	8%	17%	12

## **5.6. Actions taken that were helpful at the time of the sewer flooding**

Q26. *Was anything done to help you that you think was particularly good?*

39% of internally flooded customers commented on positive actions that helped them at the time of their sewer flooding incident. Of these, 32% commented on the speed and efficiency of the help, 22% on the good service they received generally, 19% on the help they were given with cleaning and disinfecting their property and 18% on mitigation measures provided, such as non-return valves, sand bags, drains redirected and leakage repairs.

10% praised sewer pipe inspections and follow-up actions or repairs, 5% were pleased to be provided with dehumidifiers and 4% received compensation or a rebate.

Below are examples of comments made by customers

### **5.6.1. Quick and efficient**

*It was all spot on. We couldn't complain about anything. They were straight out to sort the problem.*

*"Water company's" contractors, were fast and efficient.*

*The men were good, helpful and it was done quickly.*

*They were here very speedy to pump things out.*

### **5.6.2. Cleaning and disinfecting**

*Disinfected it. Thought it was better and more effective than I could have done with a bucket.*

*The men from the water company were absolutely fantastic. They took all the carpet up, stacked the furniture up and got rid of all sewage.*

### **5.6.3. General good service**

*Water board was very good and they sent me a letter.*

*The insurance company were very helpful in every way but they state that this was a one off. They would never do it again.*

### **5.6.4. Mitigation measures**

*Built a front porch for us since sewage came through front.*

*Dug out inspection chambers and put a non-return valve in.*

*He did a good job, put a new pipe in.*

*Water company provided new UPVC doors and built doorstep level higher.*

#### **5.6.5. Sewer pipe inspections**

*They responded quite quickly. I was impressed that more was done in terms of investigation than the time before.*

*They checked all the drains. Water company found a break in the end drain on the road. They checked everything and said it was alright.*

*CCTV survey was carried out of the sewerage system.*

## 5.7. Actions that weren't taken but would have been helpful at the time of the sewer flooding

Q27. *Is there anything else that you think should have been done at the time to help you but wasn't?*

62% of internally flooded customers suggest there should have been other actions taken to help them at the time of their sewer flooding incident.

28% suggest that the root cause should be or should have been previously resolved to prevent the last or any future sewer flooding incidents, such as repairs or improvements to the pipe network. 20% claim that they should have received a better service in the pumping out, cleaning and disinfecting of their sewer flooding incident. The same proportion feel they should have received a quicker response.

16% claim there should have been better communication, with an explanation and feedback given from investigations and on the reasons for the incident, 11% feel that their water and sewerage company should have taken ownership of the problem and 10% feel that mitigation measures should have been provided, such as sand bags, non-return valves.

8% believe they should have received compensation, 5% feel that promises were not kept and 4% made other comments.

Below are examples of comments made by customers

### 5.7.1. Resolved root cause

*Better drainage. The drainage should be improved to ensure it does not happen again.*

*Make the pipes bigger. Sewage pipes have not been altered to accommodate all the extra properties and caravans etc.*

*Second incident shouldn't have happened. Drains should have been cleared and problem solved correctly when first incident occurred.*

### 5.7.2. Better pumping, cleaning service

*The pump they brought was too small to pump out my cellar, had to do it myself.*

*I would have expected at the very least someone to come out and clean it up and disinfect.*

*The garden should have been disinfected as the smell lingered for weeks.*

*They didn't clean it very thoroughly.*

### **5.7.3. Faster response**

*Faster response. Happened at 4pm. Water board not on site till 10pm but then did work throughout the night. Earlier response would have kept water out of the property itself.*

*The council came round with sandbags AFTER it had already been cleaned away.*

*Very slow service.*

### **5.7.4. Better communication**

*Better PR between ourselves and "water company". Would like to be given more information i.e. cause/solution.*

*Could have done with more help. Wish there could be some warning. Contact numbers would be helpful.*

*More information to assure us that what had happened was not likely to happen again, what has been done to prevent it.*

### **5.7.5. Take ownership**

*The water company wouldn't accept liability at all. They made this a long drawn out ordeal for our family. Very unreasonable with us and didn't 'give' at all. Didn't show any concern at all.*

*Yes, better liaison between council and water board. One blames the other.*

### **5.7.6. Mitigation measures**

*A non-return valve on drive would stop problem but they would not fit one to solve the problem.*

*Beside the drain, they haven't put any sandbags or a wall to keep the water away to stop it coming to our property.*

*I had asked for a perimeter wall between me and my neighbour to be built. If this had been done we wouldn't have been flooded.*

## **Section 6: Impact of flooding experienced by customers who have been flooded in their unoccupied cellar/basement**

This Section assesses the impact that sewer flooding has had on customers who have been flooded primarily in their unoccupied cellar. It considers the work that has been undertaken in their cellar or basement and externally where their garden, driveway or other area was also affected.

### **6.1. Summary**

- Just under half of customers flooded in their unoccupied cellar were affected by between half an inch and 6 inches of sewage. 29% were flooded 7 to 24 inches and 5% had deeper flooding.
- For 52% the flooding remained in their cellar for up to 2 days, although 22% were affected for less than 1 day.
- Over 70% of customers who were flooded in their unoccupied cellar needed this area to be disinfected and cleaned in order to return it to its original condition. 47% had the flooding pumped out. Where these tasks were required, the water and sewerage companies carried them out and paid for them in 65% or more cases.
- Only a small proportion of customers (7% or less) needed any other work undertaken, such as the repair or replacement of floor coverings, furnishings and/or appliances and redecoration.
- Only 17% of customers have changed the use of their now unoccupied cellar since their first sewer flooding experience; 7% have stopped using it for habitable purposes and 12% have stopped using it for storage (2% had previously used it for both).

## 6.2. Areas of the property that have been flooded

Q8. *I am now going to ask you about the areas in and around your property which were affected by sewer flooding. As we work through this, I'd like you to tell me only about your most recent experience of sewer flooding. There will be an opportunity to add any additional comments you want to make about any earlier problems at the end of the interview.*

*So, thinking about your most recent experience, which of the following were affected?*

*Local road outside your property*

*Your garden and/or driveway*

*Detached garage, garden shed or greenhouse*

*Your cellar or basement area of your home*

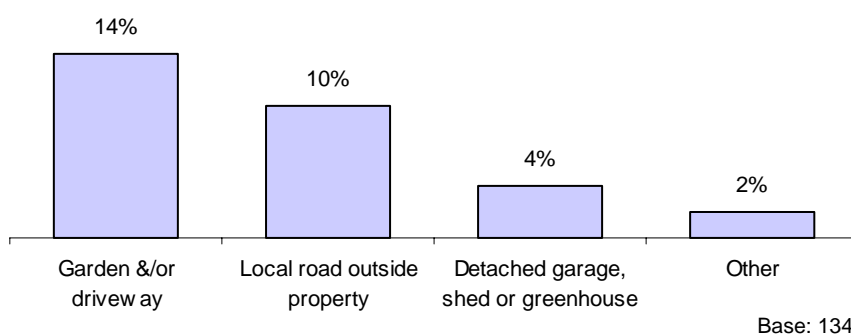
*Elsewhere inside your home &/or integral/attached garage*

*Any other areas not mentioned (please specify)*

134 customers, 21% of those surveyed, claim that their most recent sewer flooding incident was in the cellar or basement of their home which they do not use for habitable purposes.

14% of these customers have also experienced flooding in their garden or driveway, 10% have seen their local road flooded, 4% have been flooded in a detached garage, garden shed or greenhouse and 2% elsewhere.

**Areas affected during unoccupied cellar flooding**



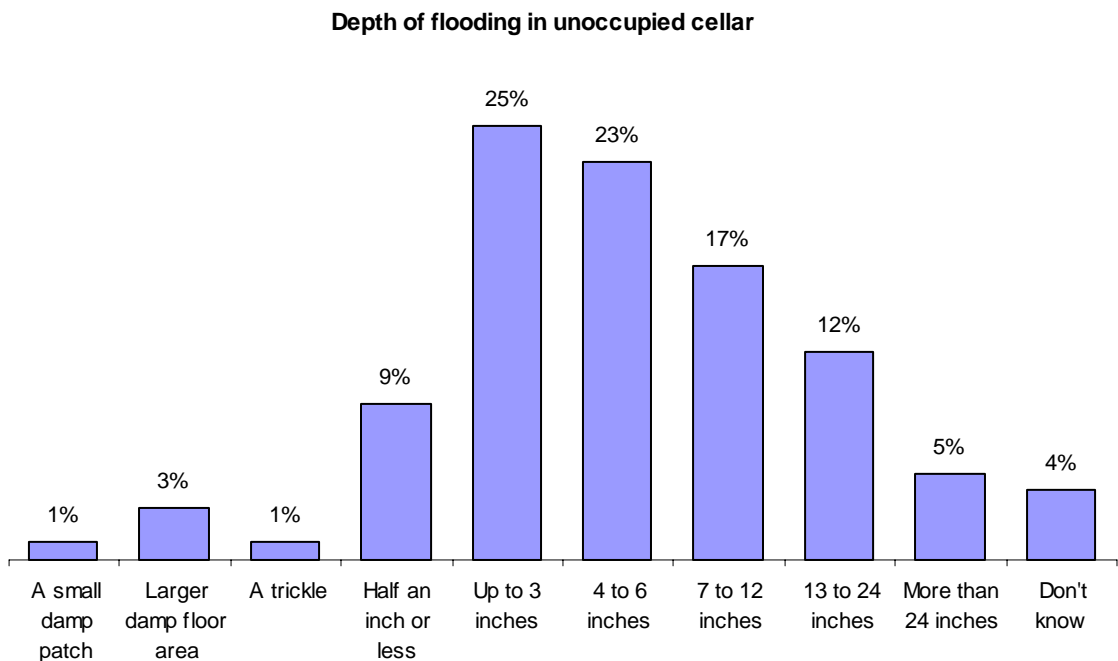
### 6.3. Impact of flooding in the unoccupied cellar/basement

#### 6.3.1. Depth and duration of flooding

Q13. How deep was the flooding inside your cellar/basement?

Q10. How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....

Just under half of customers flooded in their unoccupied cellar were affected by between half an inch and 6 inches of flooding. 29% were flooded 7 to 24 inches and 5% had deeper flooding.



Base: 134

For 52% the flooding remained in their cellar for up to 2 days, although 22% were affected for less than 1 day.

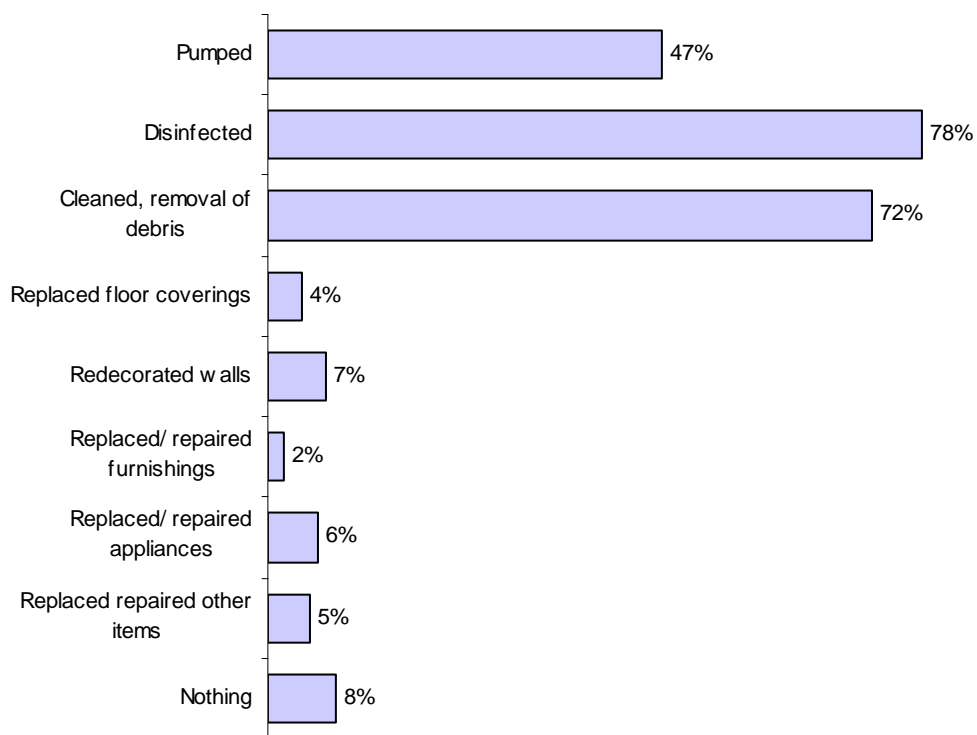
Time sewage remained in...	Less than 1 day	1 – 2 days	3 – 4 days	1 week	2 weeks	3 – 4 weeks	More than 1 month
Cellar/basement Base: 134	22%	30%	13%	9%	9%	13%	3%

### 6.3.2. Work undertaken in the cellar to return it to its original condition

Q14. Looking at SHOWCARD 3, what work was done to return your cellar/ basement to its original condition, and by whom once the flooding subsided?

Over 70% of customers flooded in their unoccupied cellar needed it to be disinfected and cleaned in order to return it to its original condition. 47% needed to have the flooding pumped out but only a small proportion of customers (7% or less) needed any further work undertaken.

Work undertaken to return unoccupied cellar to its original condition



Base: 134

### 6.3.3. Persons/organisations that did the work in the unoccupied cellar/basement

Q14. Looking at SHOWCARD 3, what work was done to return your cellar/basement to its original condition, and by whom once the flooding subsided?

Q15. Who PAID for the work to be undertaken?

Where cellars/basements required the flooding to be pumped out and areas to be disinfected and cleaned, the water and sewerage companies undertook these tasks and paid for the works in over 60% of cases.

In the small number of cellars where the replacement of floor coverings was required, walls needed redecorating and furnishings and/or appliances needed repairing or replacing, 50% or more customers undertook these tasks themselves and paid for them.

Unoccupied cellar					
Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Pumped	14%	87%	2%	2%	63
Disinfected	32%	70%	3%	0%	104
Cleaned	35%	65%	3%	0%	97
Replaced floor coverings	80%	20%	0%	0%	5
Redecorated walls	89%	0%	11%	0%	9
Replaced/ repaired furnishings	100%	0%	0%	0%	3
Replaced/ repaired appliances	50%	12%	38%	0%	8
Replaced/ repaired other items	29%	43%	29%	0%	7

Those who undertook the work most typically also paid for it, as the table below shows.

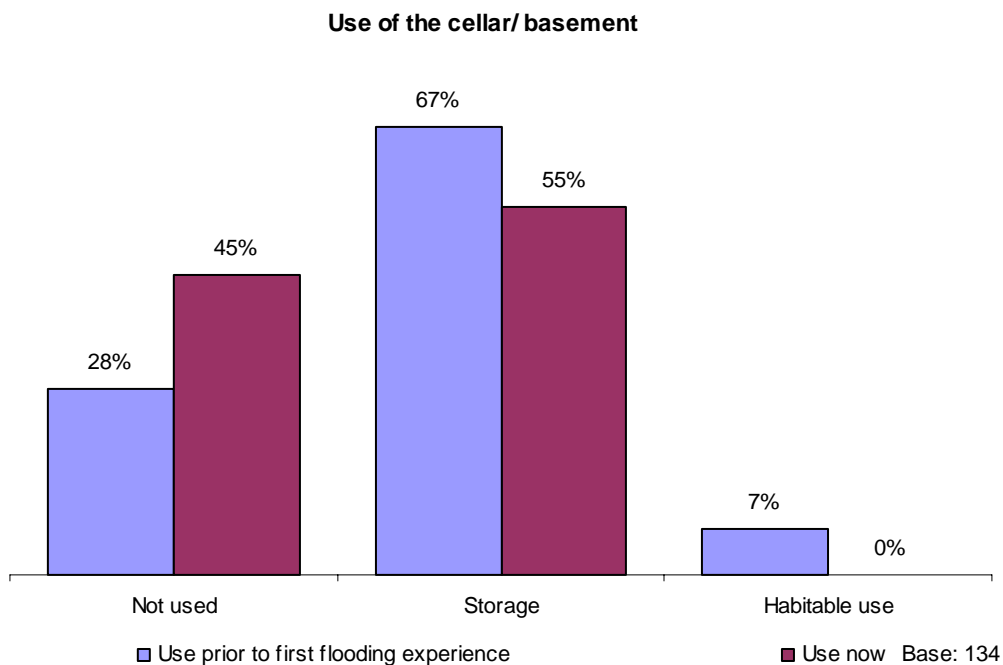
Unoccupied cellar						
Who paid	No cost	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Pumped	0%	14%	84%	2%	2%	63
Disinfected	0%	27%	70%	4%	0%	104
Cleaned	1%	31%	65%	3%	0%	97
Replaced floor coverings	0%	80%	0%	20%	0%	5
Redecorated walls	0%	78%	0%	22%	0%	9
Replaced/ repaired furnishings	0%	100%	0%	0%	0%	3
Replaced/ repaired appliances	0%	50%	12%	38%	0%	8
Replaced/ repaired other items	14%	29%	43%	29%	0%	7

### 6.3.4. Use of cellar/ basement prior to the first flooding incident and now

Q12 (a). How do you use the cellar/basement area of your home?

(b). How did you use your cellar/basement prior to your first experience of sewer flooding?

17% of customers who have been flooded in their cellar have changed their use of it since the flooding. Prior to the flooding 72% used it, 67% for storage and 7% for habitable purposes as well as storage in some cases. Now just 55% use it, mainly for storage though a minority of customers also have their central heating boiler, gas/electricity meter or similar items in their cellar.



#### **6.4. Impact of flooding outside the home**

Q23. *Once the flooding subsided in... , what had to be done to return it to its original condition?*

Q10. *How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....*

Just 23 customers surveyed who experienced flooding in their unoccupied cellar also experienced flooding to the exterior of their property, equating to 16%.

For 43% of customers the sewage remained in their garden, driveway, detached garage, garden shed and/or greenhouse for less than 1 day. For a further 46% it remained a week or less.

61% of these customers had to clean and 65% had to disinfect outside areas and a small proportion had to replace soil, gravel or other ground covering and/or repair or replace other items, such as a drain or manhole cover. 17% did nothing.

Around 40% of customers cleaned and disinfected the outside of their property themselves and paid the cost and around 60% had this work undertaken for them and paid for by their water and sewerage company.

Care should be exercised in the interpretation of this data due to the small sample sizes.

## **6.5. Actions taken that were helpful at the time of the sewer flooding**

Q26. *Was anything done to help you that you think was particularly good?*

59% of customers who were flooded in their unoccupied cellar commented on positive actions that helped them at the time of their sewer flooding incident. Of these, 49% commented on the speed and efficiency of the help, 20% on the help they were given with cleaning and disinfecting their property, 19% on the good service they received generally and 15% sewer pipe inspections with follow-up actions or repairs.

9% mentioned mitigation measures provided, such as non-return valves and 2% received compensation or a rebate.

Below are examples of comments made by customers

### **6.5.1. Quick and efficient**

*Response was good. It was on Sunday, and they came quickly.*

*The fact that they did treat it quickly, were polite and cheerful and did a good job,*

*They were efficient and did clean it out.*

### **6.5.2. Cleaning and disinfecting**

*They came and sorted it out for me right away, disinfected and left it clean.*

*They cleaned it thoroughly.*

### **6.5.3. General good service**

*The workmen were marvellous. They could not do enough. Really tried to get to the bottom of it.*

*They addressed the whole problem correctly. Gave us good advice.*

### **6.5.4. Mitigation measures**

*A new non-returnable valve in my cellar and new drains in the road.*

*They came and put a valve in the gully in my cellar to stop it happening again.*

### **6.5.5. Sewer pipe inspections**

*"Water company" was prompt to attend and clean up the mess. Since that time they have returned and done an extensive camera survey of the main sewer.*

*The dye was put down next door and down ours. It came through, the yellow was from her.*

*They found the sewer blocked.*

## **6.6. Actions that weren't taken but would have been helpful at the time of the sewer flooding**

Q27. *Is there anything else that you think should have been done at the time to help you but wasn't?*

44% of customers flooded in their unoccupied cellars suggest there should have been other actions taken to help them at the time of their sewer flooding incident.

28% claim that they should have received a better service in the pumping out, cleaning and disinfecting of their sewer flooding incident and 24% feel there should have been better communication, giving the reasons causing the incident and explaining what steps are being taken to combat the problem.

19% suggest that the root cause should be or should have been previously resolved to prevent the last or any future sewer flooding incidents, such as repairs or improvements to the pipe network and the same proportion feel they should have received a quicker response.

12% feel that promises were not kept, 8% claim that their water and sewerage company should have taken ownership of the problem, 5% feel that mitigation measures should have been provided, such as sand bags, non-return valves, 3% believe they should have received compensation and a further 3% made other comments.

Below are examples of comments made by customers

### **6.6.1. Better pumping, cleaning and disinfecting service**

*Cleaned up the cellar. A man came and looked but did nothing. They did not provide any disinfectant, we were plagued with flies and the bad smell.*

*Nobody came to disinfect the cellar other than a man with a mop and bucket which was not effective.*

*Take situation more seriously, machinery brought was not suitable for pumping out cellar because when pump stopped, the contents of the pipe emptied back onto the floor.*

### **6.6.2. Better communication**

*At the time we had to ring a few numbers to get the right one. Emergency number is not well advertised.*

*I still do not know the cause of the sewage flooding and I think I should have been informed of how and why it occurred.*

*There was no follow up call to see if everything was right. We have had mould on the walls since.*

### **6.6.3. Resolved root cause**

*After the first time the problem should have been sorted.*

*The real cause of the problem are the trees in sewer, they have investigated but not rectified.*

### **6.6.4. Faster response**

*Needed to be done a lot quicker. We rang the water company many many times.*

*Should have got it cleared up quicker.*

### **6.6.5. Keep promises**

*Said they would put a grate in the cellar but haven't done so.*

*To find the problem took a long time, they just kept unblocking the pipes, nothing else. They said they'd send a CCTV camera but they never did.*

### **6.6.6. Take ownership**

*Only thing they would say was to have my own camera survey done. It was only after that, that they took the situation seriously.*

*The landlord and "water company" are arguing whose responsibility it is and it remains untouched. It's drained away on it's own but it is very damp still. But then it is the landlord's property so we don't have to worry about the cost.*

### **6.6.7. Other comments**

*They didn't put heaters in this time or dehumidifiers. They also did not keep in touch like previous times putting you in the picture. It was like, oh not again, as though we are putting them out.*

*Water Company should have cleared it out there and then and reimbursed me.*

## **Section 7: Impact of flooding experienced by customers who have been externally flooded**

This Section assesses the impact that sewer flooding has had on customers who have been solely externally flooded.

### **7.1. Summary**

- 87% of customers who were flooded externally had to clean and 78% had to disinfect their property. 18% or less had to replace soil, gravel or other ground covering and replace plants and vegetables.
- In around 40% of cases customers cleaned and disinfected the external areas and the water and sewerage companies did the remaining 60%. Where other work was required customers typically undertook the task and often paid for it themselves, although insurance companies undertook and/or paid for the repair/replacement of items like garden furniture in a significant number of cases (N.B. small sample sizes).
- For just over 75% of customers sewage, including any rubbish or debris, remained on the property for up to 2 days.

## 7.2. Areas of the property that have been flooded

Q8. *I am now going to ask you about the areas in and around your property which were affected by sewer flooding. As we work through this, I'd like you to tell me only about your most recent experience of sewer flooding. There will be an opportunity to add any additional comments you want to make about any earlier problems at the end of the interview.*

*So, thinking about your most recent experience, which of the following were affected?*

*Local road outside your property*

*Your garden and/or driveway*

*Detached garage, garden shed or greenhouse*

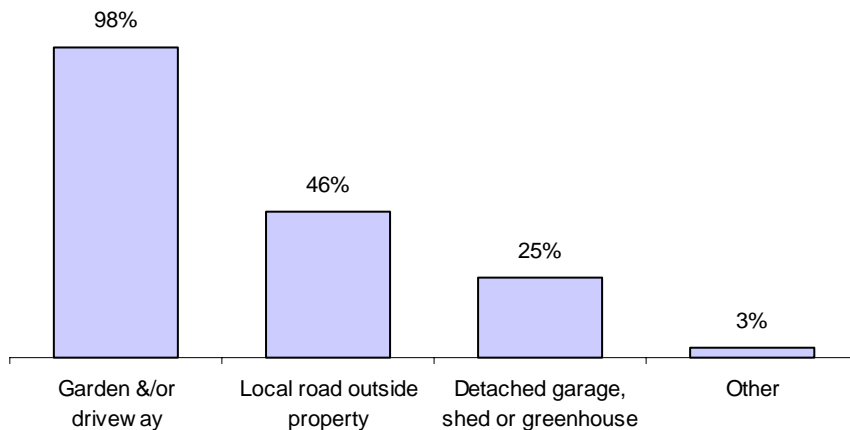
*Your cellar or basement area of your home*

*Elsewhere inside your home &/or integral/attached garage*

*Any other areas not mentioned (please specify)*

146 customers, 23% of those surveyed, claim that their most recent sewer flooding incident affected solely external areas of their property. Of these, 98% were flooded in their garden and/or driveway, 25% in their detached garage, garden shed or greenhouse, 46% in their local road outside their property and 3% in another place (e.g. "around the property").

**Areas affected during external flooding**



Base: 146

### 7.3. Duration of external flooding

Q10. *How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....*

44% of customers flooded in their garden/driveway and 39% in their detached garage, shed or greenhouse claim that the sewerage, including any rubbish or debris, remained at their property less than one day. 32% and 36%, respectively, claim that it remained for one to two days.

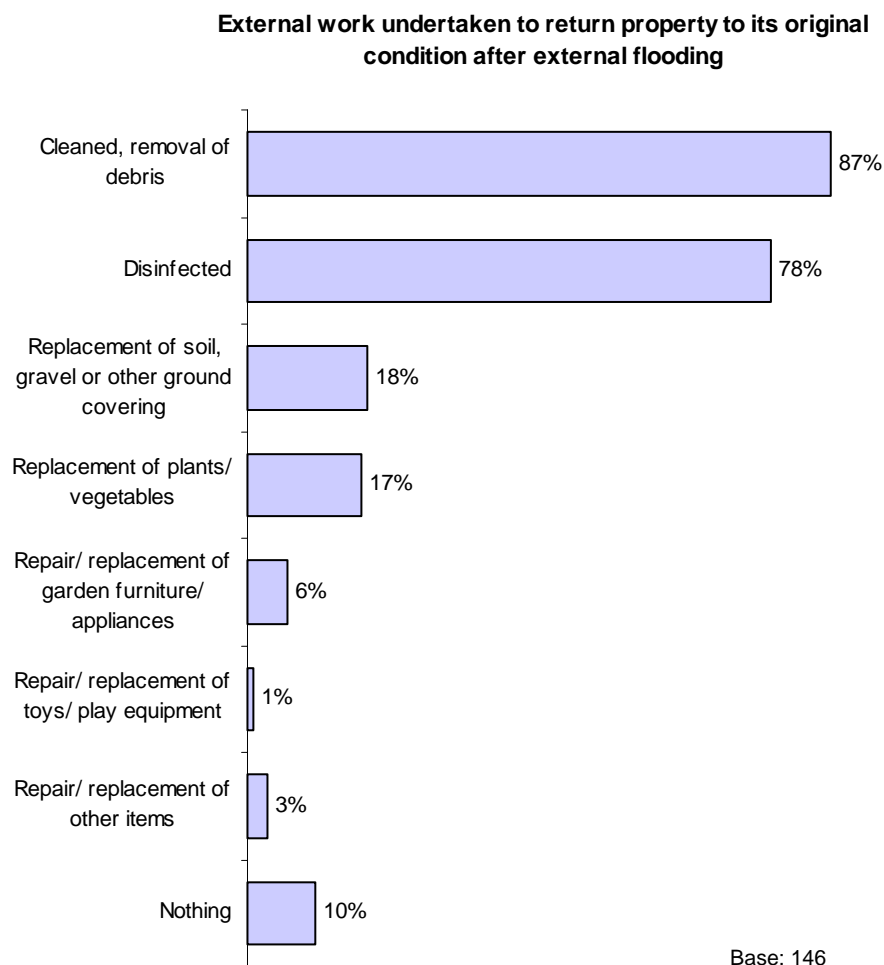
Time sewage remained in...	Less than 1 day	1 – 2 days	3 – 4 days	1 week	More than 1 week	Not cleaned away
Garden/ driveway Base: 143	44%	32%	12%	5%	6%	1%
Detached garage/shed/ greenhouse Base: 36	39%	36%	14%	3%	8%	0%

## 7.4. Impact of flooding externally

### 7.4.1. External work undertaken to return the property to its original condition

Q23. *Once the flooding subsided in... , what had to be done to return it to its original condition?*

The majority of customers solely flooded externally had to clean and disinfect their property. Additionally, just less than 20% had to replace soil, gravel or other ground covering and also replace plants and vegetables. 10% did nothing.



#### 7.4.2. Person/ organisation that did the work

Q24. Who did the work?

Q25. Who PAID for the work to be undertaken?

Where external areas required cleaning and disinfecting, around 40% of customers undertook these tasks themselves. Where these areas required the replacement of soil, gravel or other ground coverings or plants and/or vegetables, or required the replacement or repair of garden furniture, appliances and/or toys and play equipment proportionally more customers undertook these tasks themselves.

Who did work	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Cleaned, removal of debris	42%	64%	2%	2%	127
Disinfected	40%	65%	3%	3%	114
Replacement of soil, gravel or other ground covering	70%	30%	7%	0%	27
Replacement of plants/ vegetables	84%	20%	0%	0%	25
Repair/replacement of garden furniture/appliances	78%	0%	33%	0%	9
Repair/replacement of toys/play equipment	100%	0%	0%	0%	2
Repair/replacement of other items	50%	0%	50%	0%	4

Typically those who undertook the work also paid for it.

Who paid	Self/ family/ friends	Water & sewerage co.	Insurance company	Other company/ organisation	Base:
Cleaned, removal of debris	38%	65%	3%	0%	127
Disinfected	38%	67%	4%	0%	114
Replacement of soil, gravel or other ground covering	56%	30%	15%	0%	27
Replacement of plants/ vegetables	76%	20%	4%	0%	25
Repair/ replacement of garden furniture/ appliances	56%	0%	44%	0%	9
Repair/ replacement of toys/ play equipment	100%	0%	0%	0%	2
Repair/ replacement of other items	25%	0%	75%	0%	4

## **7.5. Actions taken that were helpful at the time of the sewer flooding**

Q26. *Was anything done to help you that you think was particularly good?*

43% of externally flooded customers commented on positive actions that helped them at the time of their sewer flooding incident. Of these, 46% commented on the speed and efficiency of the help, 30% on the help they were given with cleaning and disinfecting their property, 13% on the good service they received generally, and 11% on mitigation measures provided, such as non-return valves, sand bags, drains redirected and leakage repairs.

11% also received sewer pipe inspections and follow-up actions or repairs, 3% received compensation or a rebate and 2% were offered regular visits.

Below are examples of comments made by customers

### **7.5.1. Quick and efficient**

*Fire service came quickly and pumped the water from the garden to stop it pouring over the step into living room.*

*Quick to respond. Came out in the middle of night when it was reported.*

*Very pleased with the response time and they did a very professional good job.*

### **7.5.2. Cleaning and disinfecting**

*The drain man came out, he cleared it up.*

*They stayed until nearly midnight until it was all cleared away.*

*Water board disinfected everywhere for me.*

### **7.5.3. General good service**

*One person was very helpful and got our problem sorted out and progressed the whole matter.*

*The contractor were kind and helpful.*

*The service given was excellent. This was at a weekend too.*

### **7.5.4. Mitigation measures**

*A non-returnable valve was fitted last Summer.*

*They did re-direct a drain which helps a little.*

*They put a flap on top of my drive.*

#### **7.5.5. Other comments**

*Inspected it on the day and dealt with efficiently.*

*Not immediately. However, the water board did investigate and took action to resolve the problem.*

*They put a camera down.*

*The water company helped with the expense.*

*They suggested they come every month, which they did.*

## **7.6. Actions that weren't taken but would have been helpful at the time of the sewer flooding**

Q27. *Is there anything else that you think should have been done at the time to help you but wasn't?*

53% of externally flooded customers suggest there should have been other actions taken to help them at the time of their sewer flooding incident.

38% suggest that the root cause should be or should have been previously resolved to prevent the last or any future sewer flooding incidents, such as repairs or improvements to the pipe network. 26% claim that they should have received a better service in the pumping out, cleaning and disinfecting of their sewer flooding incident and 20% feel they should have received a quicker response.

12% believe they should have received compensation, 6% claim there should have been better communication, 5% feel that promises were not kept and 4% feel that their water and sewerage company should have taken ownership of the problem.

3% feel that mitigation measures should have been provided and 4% made other comments.

Below are examples of comments made by customers

### **7.6.1. Resolved root cause**

*Assurances that the necessary work will be done to prevent recurrence.*

*Do the major drain work that is needed.*

*No progress being made to sort the problem out. Stop it happening again.*

### **7.6.2. Better pumping, cleaning service**

*Clean all my garden, not just part of the garden. Did not even touch my lawn at all, said the rain would wash it off.*

*It should have been cleared properly. I felt some sewerage was left, I could smell it for ages after.*

*They came out same day to clean but we had to ring then the next day because they hadn't got rid of all the debris.*

### **7.6.3. Faster response**

*Acted a bit quicker as it was a weekend and through the summer the smell was unbearable.*

*Come out sooner, more quickly.*

*Sewer people could have come out. By the time they came it was too late.*

#### **7.6.4. Compensation, dehumidifiers and regular visits**

*Come to clean it faster and pay for all the subsequent repairs.*

*Compensation for plants in the garden and they didn't take account for the fact we had suffered as a family.*

*Would have liked replacement of flowers and soil.*

#### **7.6.5. Better communication, keep promises and taking ownership**

*Didn't react quickly enough and was passed from local authority to "water company" then back again. Eventually it was sorted out but it took too long before someone took responsibility or action. I called my insurance first and because it is council property bought he said it was the local council. They said it was "water company", who said it wasn't. But "water company" in the end accepted their responsibility and they didn't keep me informed of the work they were doing. I kept having to ring up and chase to find out what was going on.*

#### **7.6.6. Other comments**

*No help given as we own the house, if it was rented we would have had help.*

*The first contractors who came out were no good.*

*The water company should have fitted the non-return valve for us. We had to fit this, it cost £1000.00.*

## **Section 8: Insurance claims**

This Section looks at insurance holdings and claims. Unlike the other Sections of this report, this Section is based on the customer definitions of cause/type of flooding given by the water and sewerage company databases.

### **8.1. Summary**

- Of the 90% of customers who had buildings and/or contents insurance at the time of their last sewer flooding incident, 24% made a claim.
- A greater proportion of customers affected by internal hydraulic flooding made a claim (33%) than customers affected by other types of flooding.
- The majority of the 76% of customers who did not make an insurance claim stated that there was no real damage or that they did not think about claiming. However, around 17% of customers who did not claim for internal flooding were concerned that to do so would increase their premium.

## 8.2. Current holdings of buildings and contents insurance

Q29. *At the time of your last sewer flooding incident, did you have:*

*(a) buildings insurance?*

*(b) contents insurance?*

Q28 *(a) Do you currently have buildings insurance?*

*(b) Do you currently have contents insurance?*

At the time of their last sewer flooding incident, 90% of customers had buildings insurance and the same percentage had contents insurance. Following the incidents, 10% of those who did not have buildings insurance and 14% of those who did not have contents insurance took out insurance cover.

Overall, current holdings are not significantly different, with 90% of customers now having buildings insurance and 91% having contents insurance. There are no significant differences in holdings according to the cause/ type of flooding experienced.

## 8.3. Making an insurance claim

Q30. *Did you make an insurance claim?*

Overall 24% of customers with insurance cover made a claim against their policy following their sewer flooding experience (22% of all customers). 33% of customers identified by water and sewerage companies as having been affected by internal hydraulic flooding and 24% of those who experienced internal flooding due to other causes made a claim. 13% of those who had flooding in their unoccupied cellar and 11% who were externally flooded made a claim.

Customers with insurance cover	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Made an insurance claim	33%	24%	13%	11%

Base:

227

192

94

94

#### 8.4. Reasons for not making an insurance claim

Q31. Which of the reasons listed on SHOWCARD 4 best describe why you did not make an insurance claim?

Of those customers who did not make an insurance claim and who were flooded internally due to hydraulic causes, 50% indicate that this was because the sewer flooding caused no real damage and they therefore did not feel it was worth claiming. Compared to the average (53%), more of those who were affected by flooding in their unoccupied cellar (65%) and those flooded externally (70%) indicate this and fewer of those flooded internally due to other causes (40%).

Between 14% and 21% of customers suggest that they simply did not think of claiming, and between 5% and 17% did not make a claim because they felt it would result in an increased premium cost. Fewer customers who were flooded in their unoccupied cellar or externally gave this latter reason compared to the average (13%).

Other reasons given for not making a claim were quoted by 11% or fewer customers.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
No real damage/ not worth claiming	50%	40%	65%	70%
Did not think of claiming	14%	21%	16%	20%
Would have resulted in increased premium cost	16%	17%	5%	6%
Cost below the premium excess	5%	11%	4%	11%
Not the responsibility of the insurance company	3%	7%	6%	5%
Would have been rejected by insurance company	6%	5%	1%	1%
Someone else paid	3%	5%	4%	4%
Policy did not cover sewer flooding	3%	2%	0%	1%
Couldn't be bothered/ too much hassle	1%	1%	1%	0%
Would have affected future sale of property/ highlighted a problem	2%	0%	0%	0%
Other reason	6%	7%	2%	0%
Base:	152	145	80	84

## **Section 9: Cost and time spent putting things right**

This Section provides details on the costs incurred by customers to return their property to the condition it was prior to the flooding. It looks at the cost of remedial actions, refunds received by customers, the impact of the flooding on the insurance premium costs and the time spent by customers dealing with the incident and GSS payments received.

### **9.1. Summary**

#### **9.1.1. Monetary costs**

- About 30% of customers who experienced internal flooding and 60% of those who experienced flooding elsewhere did not incur a cost to put their property right. 20% to 31% of customers flooded internally paid up to £100. 10% to 13% paid over £1000. Of customers flooded elsewhere between 19% and 26% paid up to £100 and 7% or less paid over £500.
- The average cost to a customer (including those who incurred no cost) of restoring a property was £710 for a property flooded internally due to hydraulic causes, £486 for a property flooded internally due to other causes, and £134 and £138 for properties flooded in unoccupied cellars and externally respectively. It should be noted that these averages are strongly influenced by the few (up to 13%) customers who claimed that their property cost over £1000 to rectify, mainly internal flooding.
- The average cost for just the properties where costs were incurred rises to £1068 and £694 for internally flooded properties and £365 and £333 for those flooded elsewhere.
- As well as having paid the amounts above, around 24% of internally flooded customers and 7% to 12% of those flooded elsewhere received refunds for other costs incurred from sewerage companies, insurance companies or other parties. The average payment from a sewerage company ranged from £36 for external flooding to £260 for internal hydraulic flooding. The average payment from insurance companies was £802 for unoccupied cellar flooding, £1520 for external flooding, £3398 for internal other causes flooding and £9162 for internal hydraulic flooding (note that sample sizes for these figures were small).
- Over 60% of internally flooded customers and those flooded in their unoccupied cellars and 45% of those flooded externally also received what they perceived to be a GSS payment from their sewerage company. On average this was £110 to £123 for internal flooding (in many cases the payment they received would actually have been an ex gratia payment made under the company's extended scheme for sewer flooded customers) and £72 to £83 for flooding elsewhere.

- 35% of customers feel that they have been adequately compensated by their water and sewerage company. 54% feel they have not.

#### **9.1.2. Other costs**

- When looking at other costs to the customer, about 35% of those flooded internally and 53% to 63% of those flooded elsewhere spent one day or less dealing with their flooding incident. Typically customers who had been internally flooded took longer to deal with their incidents. 10% of internally flooded customers had to spend some time away from their property.
- Of those who made a claim (22% of all customers) and who have since renewed their insurance policy (77% of claimants, equivalent to 17% of all customers surveyed), the vast majority (84%) indicated that they were able to obtain insurance that covered sewer flooding. However, 46% indicated they were unable to shop around for the most competitively priced policy.
- Just under half of internally flooded customers and about six in ten of those flooded elsewhere who made an insurance claim indicated they have experienced an increase in their premium as a result of the sewer flooding. This is typically less than £100.

## 9.2. Cost of remedial actions

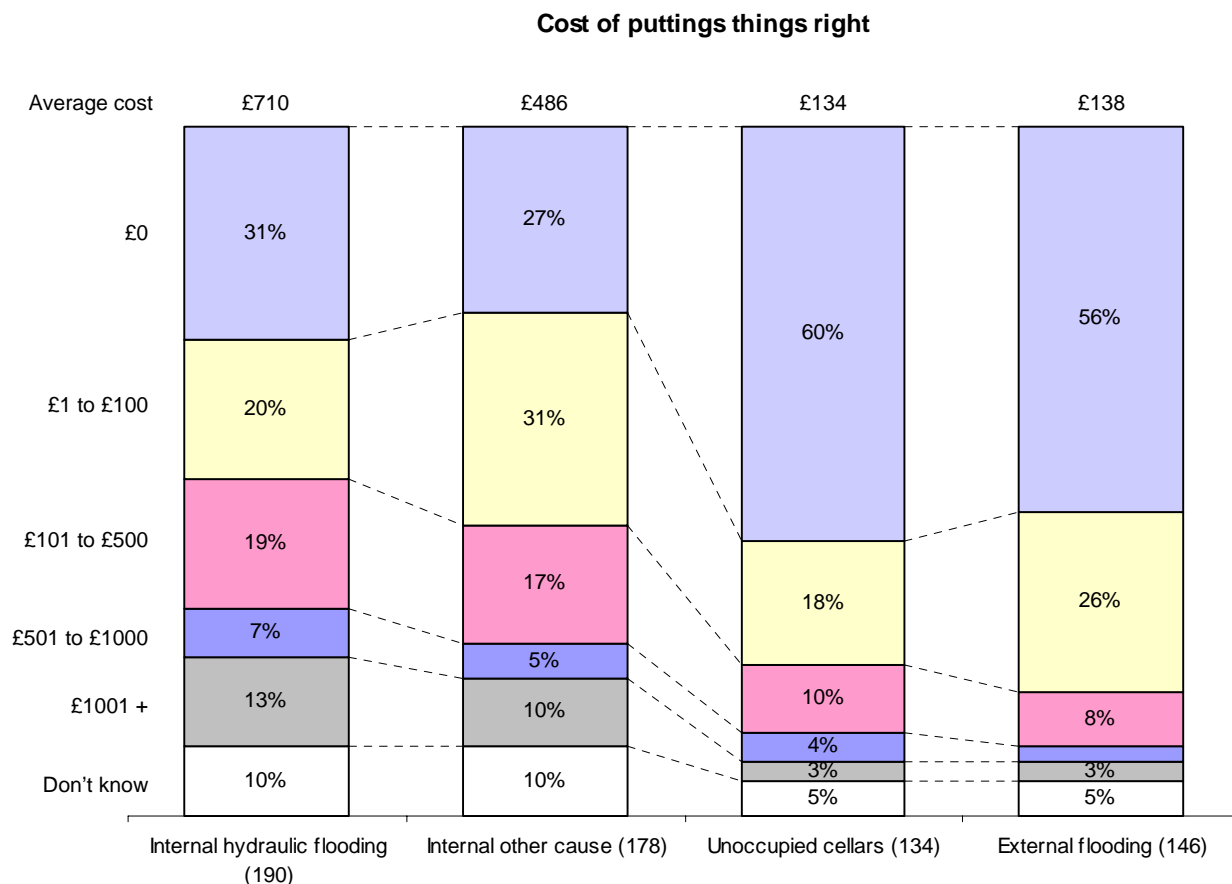
### 9.2.1. Cost to customers of putting things right

Q36a. In total, how much would you say it cost YOU to put things right on your property, (e.g. clean and repair or replace items)?

Around 30% of customers who experienced internal flooding and 60% of those who experienced flooding elsewhere did not incur a cost to put their property right.

69% of customers who experienced internal hydraulic flooding incurred a cost to put their property right. For 20% this cost was between £1 and £100, for 19% it was between £101 and £500 and for 20% it was over £500. 10% do not know or can not remember the cost. On average the cost per customer was £710 (including those who did not incur a cost but excluding those who claimed not to know).

By comparison, 73% of customers who experienced internal flooding due to other causes incurred a cost to put their property right, as did 40% of those flooded in their unoccupied cellar and 44% of those flooded externally. The average cost for customers who experienced internal flooding due to other causes was £486, for those who experienced flooding in their unoccupied cellar it was £134 and for those who suffered it externally it was £138.



These costs above, however, are based on all customers, irrespective of whether they actually incurred a cost. By taking out of the calculation those who did not incur a cost, we can see the average cost rises to £1068 for those who experienced internal hydraulic flooding, £694 for those who experienced internal flooding due to other causes, £365 for those whose unoccupied cellar flooded and £333 for those who were flooded externally.

Costs	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Range of costs	£2 - £10,000	£2 - £15,000	£2 - £2,500	£1 - £3,500
Average cost, excluding those who did not incur a cost	£1068	£694	£365	£333

Base: 113 112 41 57

### 9.2.2. Costs that were later refunded to customers

Q36b. *Were there any other costs that you incurred that were later refunded by your water and sewerage company, insurance company, local council or any other organisation?*

Q36c. *IF YES: Who refunded these costs, and how much were they?*

24% of customers who experienced internal hydraulic flooding and 24% of those who experienced internal flooding due to other causes incurred costs that were later refunded. This proportion, however, falls to 7% for those flooded in an unoccupied cellar and 12% for those flooded externally.

A greater proportion of customers who were flooded internally received a refund for costs incurred from their insurance companies. By comparison those flooded in their unoccupied cellar and those flooded externally most typically received a refund from their water and sewerage company.

Organisations that refunded costs	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Water & sewerage company	31%	50%	56%	56%
Insurance company	87%	62%	44%	44%
Other organisation	2%	5%	0%	6%

Base: 45 42 9 18

Care should be exercised in the interpretation of this data due to the small sample sizes.

The average refund paid to customers by the water and sewerage companies is between £36 and £260, depending on the cause/type of flooding.

The average refund paid by insurance companies is much greater by comparison, ranging from an average of £937 for those flooded in their unoccupied cellar to £9446 for those who experienced internal hydraulic flooding.

It should be noted that the figures do not include those payments made for works, repairs and the replacement of items that were paid directly by the water and sewerage companies, insurance companies and other organisations. The data suggests that only half the customers who made an insurance claim, for example, received a refund on costs, indicating that the other half had the costs paid directly by the insurance companies. Similarly the data shows that in 86% of cases, where costs were paid by the water and sewerage companies these costs were paid directly by the companies and therefore no customer refund was necessary.

	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Water & sewerage company	£260	£156	£161	£36
Insurance company	£9162	£3398	£802	£1520
<i>Base:</i>	8 - 33	16 - 22	5 - 4	8 - 5

Care should be taken in the use of these averages due to the relatively small sample sizes.

### 9.2.3. Cost of renewing the insurance policy after a sewer flooding claim

- Q32. *Has your insurance policy come up for renewal since your most recent sewer flooding incident?*
- Q33. *At the time of the renewal, were you able to:*  
 (a) *Get insurance that still covered sewer flooding?*  
 (b) *Shop around and seek out the most competitively priced policy?*
- Q34. *As a direct result of the sewer flooding, has your*  
 (a) *Annual insurance premium remained the same or increased in price?*  
 (b) *What about your insurance excess, has this remained the same or increased in price?*

77% of customers who made a claim against their insurance policy when they were flooded indicate that their policy has since come up for renewal. This equates to 17% of all customers surveyed.



#### 9.2.4. Additional conditions and clauses added to insurance policies

Q35. *Have any additional conditions or clauses been added to your insurance policy since the sewer flooding incident?*

Of those who have had an insurance policy come up for renewal, just six customers are aware of additional conditions or clauses that have been added to their insurance policy. Their comments are as follows:

*“Only that they said it was a one-off payment. They wouldn't do it again.”*

*“They want £137 per year and I am just an OAP.”*

*“This is the last cover against sewerage flooding by this company.”*

*“Now not insured at all for flooding or water ingress.”*

*“Yes, exclusion of all flooding.”*

*“Flooding.”*

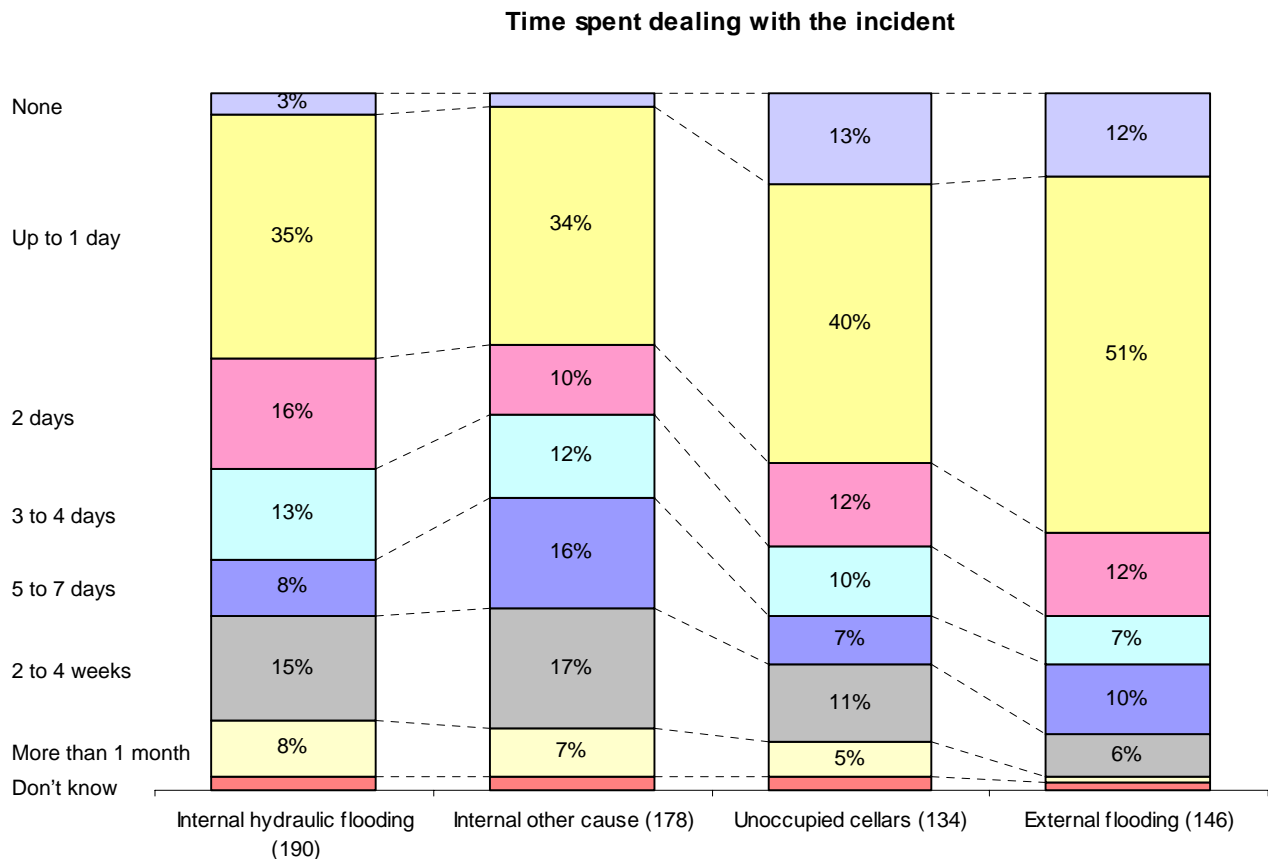
### 9.3. Time spent dealing with the incident and living away from home

#### 9.3.1. Time spent dealing with the incident

Q37. How many hours or days do you think you and your family spent dealing with the sewer flooding incident, including cleaning up and contacting your water and sewerage company?

Q38. How many hours or days were taken off work, if any?

Those who experienced internal flooding spent more time dealing with the sewer flooding incident than those who experienced flooding in their unoccupied cellar or externally. Around 60% of internally flooded customers spent more than one day dealing with it (over 20% spent more than 2 weeks), while 53% of those flooded in their unoccupied cellar and 63% flooded externally spent one day or less.



Similarly, a greater proportion of internally flooded customers took time off work compared to others.

Hours or days taken off work	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
None	80%	70%	83%	90%
Up to 1 day	3%	14%	7%	6%
2 days	5%	4%	4%	1%
3 to 7 days	8%	8%	4%	2%
2 to 4 weeks	3%	4%	3%	1%
<i>Base:</i>	190	178	134	146

### 9.3.2. Need to stay away from home during the period of the flooding

Q41. *Did you have to leave your home and stay elsewhere at any time during the most recent sewer flooding incident?*

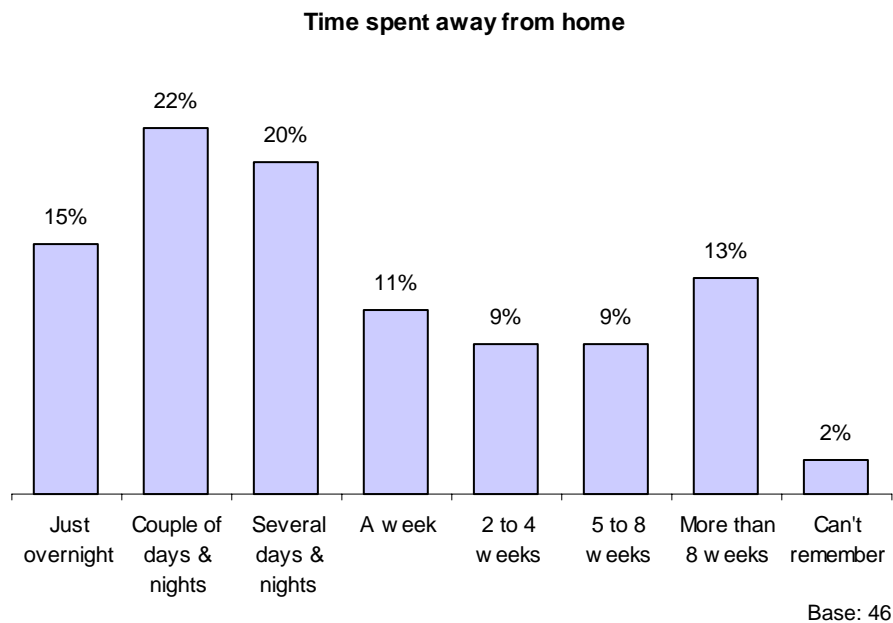
Q42. *How long did you stay away from home?*

Q43. *Where did you stay?*

Q44. *Who paid for the accommodation?*

10% of customers who experienced internal flooding either due to hydraulic or other causes claim they had to leave their home and stay elsewhere compared to 4% of those who experienced flooding in their unoccupied cellar or externally.

Of those who left their home, 15% spent just one night away, 22% a couple of days and nights and 20% several days and nights. A further 20% spent between one week and one month away and 22% more than one month.



The majority of customers (67%) stayed with friends or relatives. 20% stayed in a hotel, 11% stayed in rented accommodation (half of those who stayed away from home more than one month) and one person (2%) stayed elsewhere.

65% of customers claim that they or their family/friends whom they stayed with incurred the cost of their stay, 28% say the cost was paid by their insurance company, 4% by their local council and 2% by their landlord.

## 9.4. Guaranteed Service Standard payments and compensation

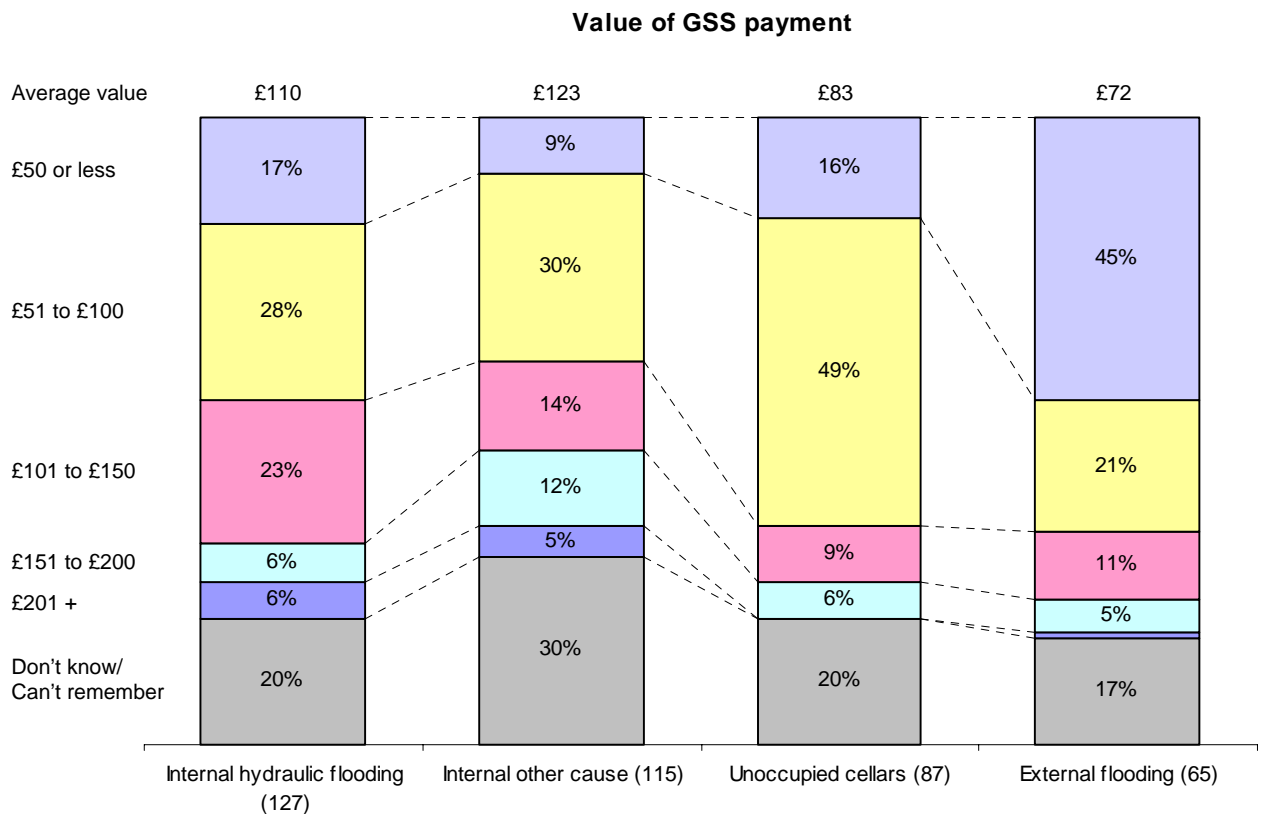
### 9.4.1. Guaranteed Service Standard payments

Q39. *Did your water and sewerage company give you a Guaranteed Service Standard payment, which is a rebate off your sewerage bill?*

Over 60% of internally flooded customers and those who were flooded in their unoccupied cellar state they received what they perceived to be a Guaranteed Service Standard (GSS) payment. By contrast, significantly fewer of those who experienced external flooding received this payment (45%).

Given GSS payment	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Yes	67%	65%	65%	45%
No	23%	29%	23%	43%
Don't know	10%	7%	12%	12%
<i>Base:</i>	190	178	134	146

The value of payments range from £15 to £800, though the average and modal values are £100 and the median payment is £90. Customers who experienced internal flooding typically received the higher value GSS payments.



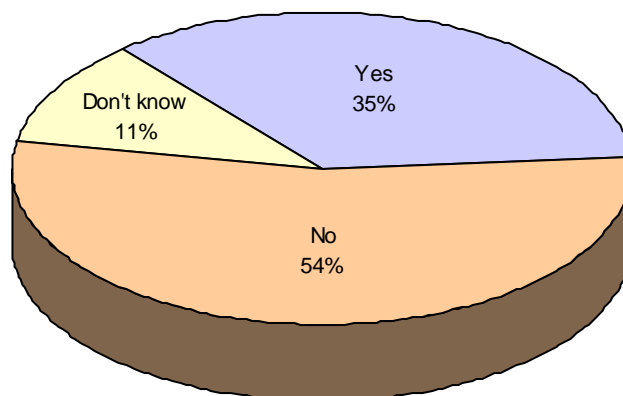
All the water and sewerage companies participating in this survey offer an extended range of ex gratia payments beyond the requirements of the GSS. A payment made under these schemes may be perceived by the customer to be a GSS payment, so this should be borne in mind when considering the figures above.

#### 9.4.2. Adequacy of compensation from water & sewerage company

Q40. Overall, thinking about the distress, cost and any payments you may have received, do you think you have been adequately compensated by your water and sewerage company?

Considering the distress caused by the flooding, any cost incurred and any payments received as a consequence of the flooding, 35% of customers feel that they have been adequately compensated by their water and sewerage company.

Adequacy of compensation from water & sewerage company



Base: 648

- More customers who have received a GSS payment feel that they have been adequately compensated compared to those who have not (43% vs. 20%).
- More customers who claim not to have incurred a cost as a result of flooding feel that they have been adequately compensated compared to those who have (48% vs. 26%). The higher the cost the fewer the customers who feel they have been adequately compensated.
- More customers who have experienced flooding in their unoccupied cellar (51%) and fewer who have experienced it internally due to other causes (26%) feel they have been adequately compensated.

## **Section 10: Reducing the future risk of sewer flooding**

This section looks at the extent to which actions have been taken to reduce the risk or effect of any future flooding, what those actions have been, who undertook the actions and who paid for it. It also looks at the perceived likelihood of further floodings in the future, importance of reducing the future risk of sewer flooding and the impact that sewer flooding is felt to have had on property prices.

### **10.1 Summary**

- The majority of customers are very or fairly concerned that their property could flood again and 70% or more state that it is very important that the risk of future flooding is reduced.
- About half the customers affected by internal flooding and about four in ten customers flooded elsewhere are aware of some action having been taken to help reduce the risk or effect of any future flooding incident.
- Most commonly, up to 12% of customers are aware of non-return valves being fitted in sewer pipes, and a similar proportion are aware of the repair or renewal of pipes or the redirection of sewage carried. In 85% and 74% or more cases respectively the work has been undertaken and paid for by the water and sewerage companies. Additionally, up to 14% are aware of ground landscaping/construction of a boundary wall to divert sewage flow, though in around 60% of cases this work has been undertaken and paid for by customers.
- The average cost of actions taken to reduce the effect of future flooding ranged from £333 (internal hydraulic flooding) to £796 (external flooding), which was generally paid by the customer. (Care should be taken in the use of these averages due to the relatively small sample sizes).
- Given a list of four possible actions to reduce the effect of future flooding, the majority suggest that taking mitigation actions are the most important, followed by receiving full compensation and receiving help with cleaning up and putting things right.
- Although few (overall just 5%) had tried to sell their property, about half the customers flooded internally due to hydraulic causes feel their home has been devalued by sewer flooding, but the majority of customers flooded elsewhere or due to other causes believe the value of their house has not changed.

## 10.2 Actions taken to reduce the future risk of sewer flooding

### 10.2.1. The extent to which actions have been taken

Q49a. Which, if any, of the actions on SHOWCARD 6 have been taken at any time to help reduce the risk or effect of any future sewer flooding incident?

- Fitting of non-return valves in the sewer pipes
- Ground landscaping or building of boundary wall to divert the sewage flow
- Fitting of UPVC doors
- Fitting of air brick protectors
- Installation of a pump in your home
- Fitting of flood boards
- Bolting down of sewer pipe inspection covers
- Replacement of wooden floor boards with concrete floor
- Disconnection of your cellar drainage
- None of these

Q50. What other actions, if any, have been taken to reduce the risk of future sewer flooding to your property?

Overall, 47% of customers are aware of action having been taken to help reduce the risk or effect of any future flooding incident; 26% are aware of at least one of the measures listed above and 29% of other measures being implemented.

This contrasts, in particular, with customers who have suffered from flooding in their unoccupied cellar, where fewer are generally aware of any action being taken and specifically in relation to those measures listed above.

Taken action to reduce risk/effect of future flooding	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Any action taken	57%	51%	37%	40%
Action from those listed	34%	25%	19%	25%
Other action	32%	32%	24%	25%

Base:

190

178

134

146

- Compared to home owners, fewer customers in rented property are generally aware of the implementation of any measures (35% vs. 49%), those listed above (16% vs. 28%) and other measures not listed (19% vs. 30%).
- More customers living in detached properties are aware of the implementation of at least one of the measures listed above compared to the average (36% vs. 26%).

## 10.2.2. Specific actions taken to reduce the risk or effect

Q49a. Which, if any, of the actions on SHOWCARD 6 have been taken at any time to help reduce the risk or effect of any future sewer flooding incident?

Most commonly, customers are aware of non-return valves being fitted in sewer pipes and ground landscaping or building of a boundary wall to divert sewage flow. Fewer claim that they have had UPVC doors fitted, air brick protectors fitted, flood boards fitted, a pump installed, inspection covers bolted down, wooden floor boards replaced with concrete or their cellar drainage disconnected.

Actions taken to reduce risk/effect of future flooding	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Fitting of non-return valves in the sewer pipes	12%	9%	8%	8%
Ground landscaping or building of boundary wall to divert the sewage flow	14%	8%	3%	8%
Fitting of UPVC doors	7%	4%	1%	5%
Fitting of air brick protectors	5%	2%	2%	7%
Installation of a pump in your home	5%	4%	4%	1%
Fitting of flood boards	4%	3%	1%	5%
Bolting down of sewer pipe inspection covers	5%	2%	1%	3%
Replacement of wooden floor boards with concrete floor	2%	2%	2%	1%
Disconnection of your cellar drainage	1%	1%	2%	0%
None of these	66%	75%	81%	75%

Base:

190

178

134

146

### 10.2.3. Those who took the actions to reduce the risk

Q49b. *Who took these actions - yourself, your water & sewage company or someone else?*

In the majority of cases, it is customers that have undertaken the works to help reduce the risk or effect of any future sewer flooding. Only in a small number of cases do customers attribute the work to their water and sewerage company or other organisations (principally their local council).

The exceptions to this are the fitting of non-return valves, which have been fitted by the water and sewerage company in most cases (85%), and the replacement of wooden floor boards with concrete, which have been undertaken by a mix of customers, the water and sewerage company, local council, insurance company and landlord.

<b>Who took actions to reduce risk/effect of future flooding</b>	Self/ family/ friends	Water company	Other	<i>Base:</i>
Fitting of non-return valves in the sewer pipes	13%	85%	2%	60
Ground landscaping or building of boundary wall to divert the sewage flow	58%	26%	21%	57
Fitting of UPVC doors	79%	21%	0%	29
Fitting of air brick protectors	62%	38%	4%	26
Installation of a pump in your home	75%	12%	12%	24
Fitting of flood boards	74%	26%	0%	23
Bolting down of sewer pipe inspection covers	68%	21%	10%	19
Replacement of wooden floor boards with concrete floor	44%	22%	33%	9
Disconnection of your cellar drainage	75%	25%	0%	4

Care should be taken in the interpretation of this data due to the relatively small sample sizes.

#### 10.2.4. Other actions taken to reduce the risk of future sewer flooding

Q50. *What other actions, if any, have been taken to reduce the risk of future sewer flooding to your property?*

12% of customers who have experienced internal hydraulic flooding are aware of work being undertaken on the sewer pipes to repair, renew or redirect sewage. 4% are aware of the existing pipe and drain infrastructure being cleaned or cleared of blockages, such as the removal of broken brickwork or tree roots and 4% are aware of pipe inspections or works being undertaken, though have not been advised of the nature of these.

Actions taken to reduce risk/effect of future flooding	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Redirected/repaired/ fitted new pipes/drains	12%	12%	12%	5%
Pipes/drains cleaned/unblocked	4%	7%	4%	4%
Pipe inspection/ actual work unknown	4%	4%	2%	5%
Building of walls/fence/steps/ concreting floors	3%	1%	2%	3%
Work on pumping station/ built/repaired sewage holding tanks/overflow areas	3%	1%	0%	1%
Altered method of storage	1%	1%	2%	0%
Other miscellaneous actions	7%	9%	4%	5%

Base: 190 178 134 146

- Fewer customers who have been externally flooded have had pipes and drains repaired, renewed or redirected compared to other customers.

### 10.2.5. Those who took the other actions

Q50. *What other actions, if any, have been taken to reduce the risk of future sewer flooding to your property? By Whom?*

In most cases, it is the water and sewerage company that has undertaken other work to help reduce the risk or effect of any future sewer flooding. The exceptions to this are the building of (non-boundary) walls and fences, steps or the concreting of floors (usually in the garage) and alterations to the level at which items are stored.

Only in a small number of cases do customers attribute the work to other organisations, either their insurers or their local council.

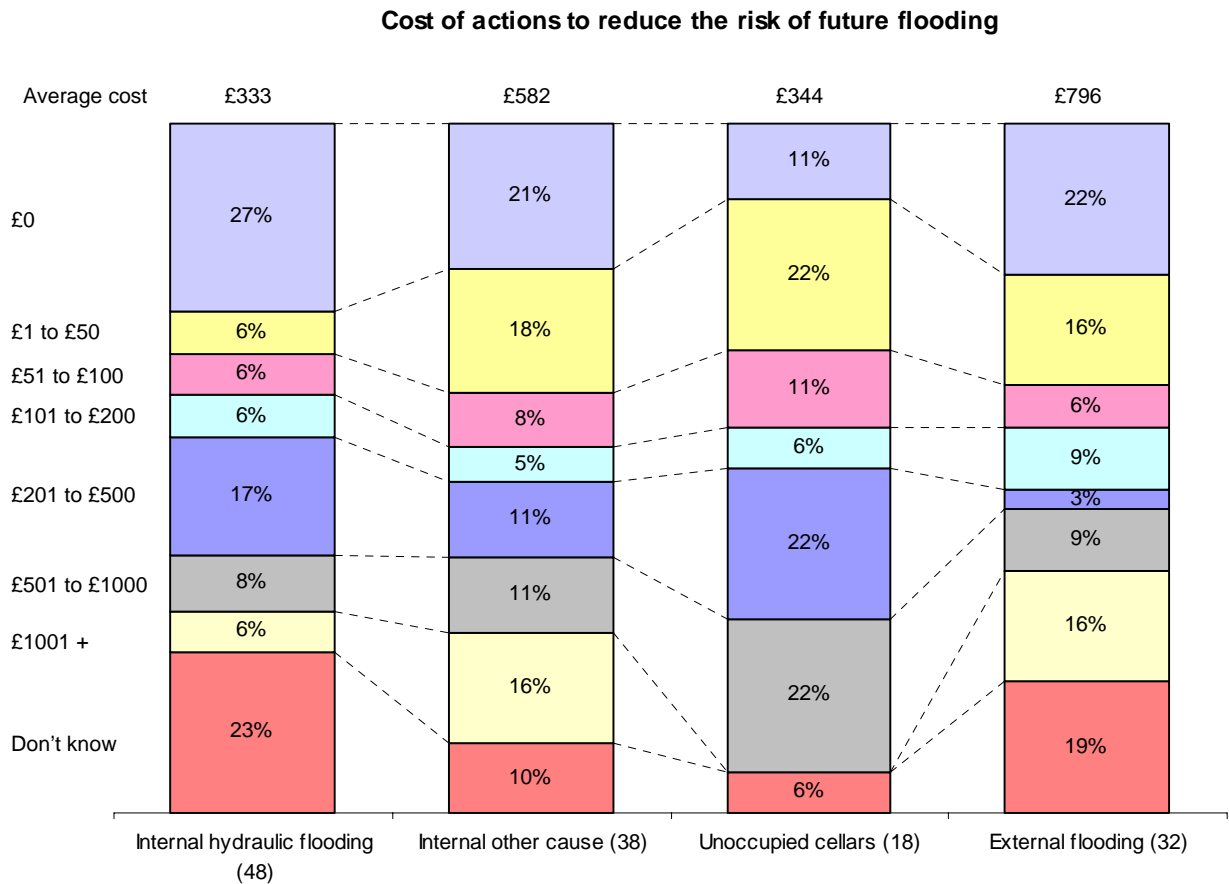
<b>Who took other actions to reduce risk/effect of future flooding</b>	Self/ family/ friends	Water company	Other	<i>Base:</i>
Redirected/repaired/ fitted new pipes/drains	21%	74%	10%	68
Pipes/drains cleaned/unblocked	23%	90%	3%	30
Pipe inspection/ actual work unknown	12%	80%	12%	25
Building of walls/fence/steps/ concreting floors	69%	38%	8%	13
Work on pumping station/ built/repaired sewage holding tanks/overflow areas	10%	90%	0%	10
Altered method of storage	100%	0%	0%	6
Other miscellaneous actions	66%	34%	16%	44

### 10.2.6. Cost of undertaking actions

Q51a. Approximately, how much did this work cost YOU?

73% of customers who experienced internal hydraulic flooding and took actions to help reduce the risk or effect of any future flooding incurred a cost, though 23% can not recall what it was. For 18% the cost was between £1 and £200, for 17% it was between £201 and £500 and for a further 14% it was more than this. On average the cost per customer was £333 (including those who did not incur a cost but excluding those who claimed not to know).

By comparison, the average cost for customers who experienced internal flooding due to other causes was £582, for those who experienced flooding in their unoccupied cellar it was £344 and for those who were affected externally it was much higher at £796. However, care should be exercised in the interpretation of this data due to the small sample sizes.



These costs, however, are based on all customers, irrespective of whether they actually incurred a cost. By taking out of the calculation those who did not incur a cost, the average is seen to rise to £513 for those who experienced internal hydraulic flooding, £761 for those who experienced internal flooding due to other causes, £390 for those whose unoccupied cellar flooded and £1089 for those who were flooded externally.

Cost of undertaking actions	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Range of costs	£25 - £1,700	£2 - £6,000	£10 - £1000	£20 - £9,000
Average cost, excluding those who did not incur a cost	£513	£761	£390	£1089
<i>Base:</i>	24	26	15	19

### 10.2.7. Costs that were later refunded to customers

*Q51b. Were there any other costs that you incurred that were later refunded by your water and sewerage company, insurance company, local council or any other organisation?*

*Q51c. IF YES: Who refunded these costs, and how much were they?*

Only 5% of customers (seven people) incurred other costs that were later refunded by their water and sewerage company, insurance company or local authority. The costs range from £600 to £1500.

### 10.2.8. Relative importance of actions when dealing with future sewer flooding

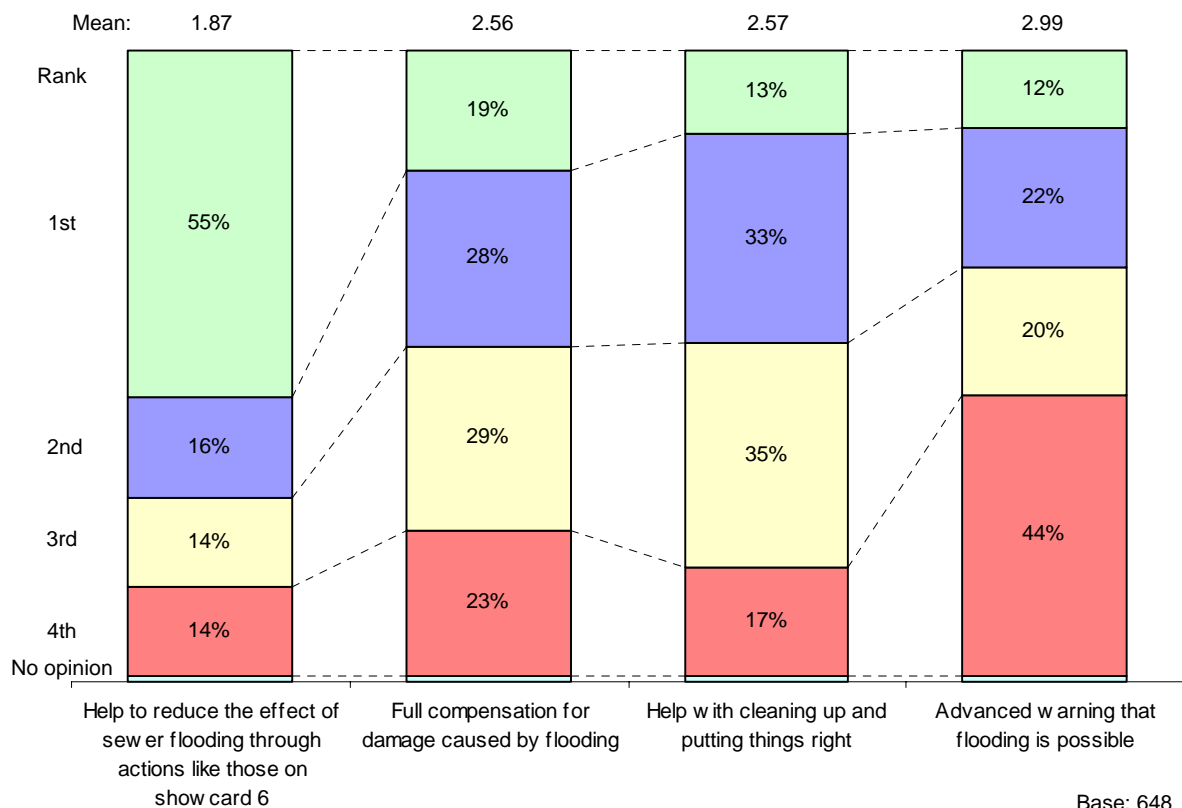
Q52. *If it were not possible to completely remove the risk of flooding, how would you rank the four actions on SHOWCARD 7? Rank the most important action 1, the next as 2 and so on to 4 for the least important.*

Mean scores have been used to evaluate the ranking of the four actions. These have been calculated by awarding a score of one to the actions ranked in 1<sup>st</sup> place, two to 2<sup>nd</sup>, three to 3<sup>rd</sup>, four to 4<sup>th</sup> and zero to those with no opinion. Initiatives with lower value scores, closer to one, are therefore considered more important than those with higher scores. Mean scores calculated in this way take account of the full measure of importance, considering the proportion of customers who consider actions unimportant as well as those who consider them important.

55% of customers ranked the actions listed on showcard six as the most important in helping to reduce the effects of sewer flooding, achieving the highest rank at the mean score of 1.87. These actions are ground landscaping or building of boundary wall to divert the sewage flow, fitting of flood boards, fitting of air brick protectors, fitting of UPVC doors, fitting of non return valves in the sewer pipes, bolting down of sewer pipe inspection covers, installation of a pump in your home, disconnection of your cellar drainage or replacement of wooden floor boards with a concrete floor.

Placed second is receiving full compensation for the damage caused by sewer flooding with a mean score of 2.56, though helping with cleaning up and putting things right ranks a very close third with a mean of 2.57. Receiving advanced warning that flooding is possible is the least important of the four measures, ranked 4<sup>th</sup> by 44% of customers and achieving a mean score of 2.99.

**Ranking of four actions**



An analysis of this data across customers who have experienced the different causes/types of flooding and across those with differing demographic and geographic profiles show that there is some switching in the ranked importance of full compensation for damage and help with cleaning up and putting things right. However, across all customers, reducing the effect of flooding through the actions listed on showcard 6 remains the most important and providing advanced warning of possible flooding least important.

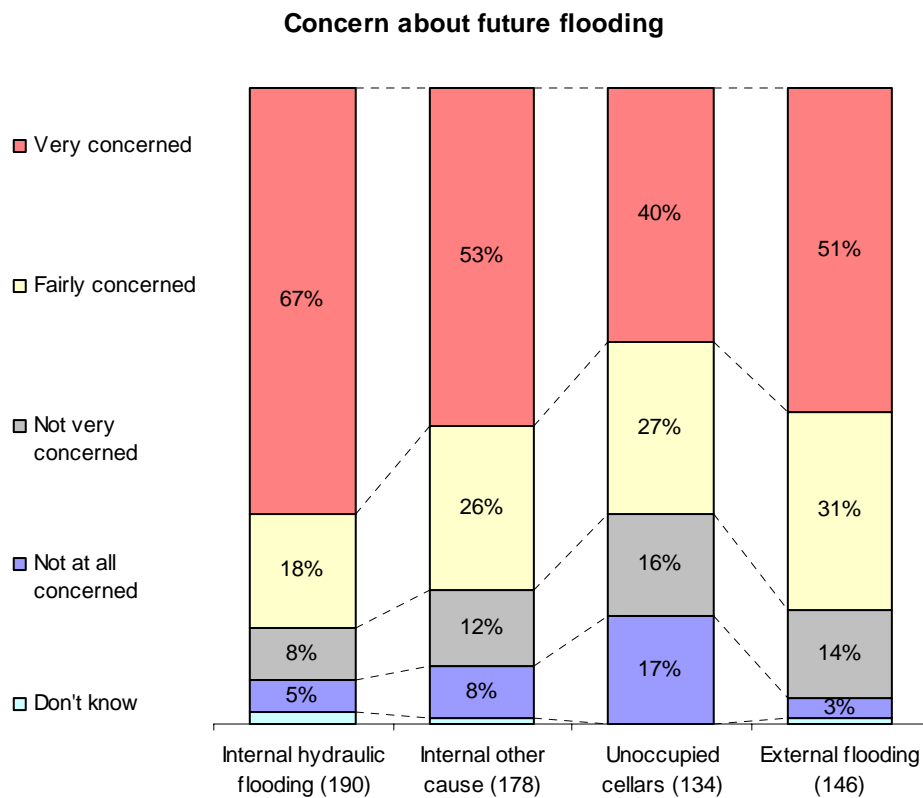
### 10.3. Concern and likelihood that the property could be flooded again

#### 10.3.1. Concern that the property could be flooded again

Q53. How concerned are you that your property could be flooded again?

Most concerned that their property could be flooded again are those customers who have experienced internal hydraulic flooding. 67% say they are very concerned compared to 53% of those who have been flooded internally due to other causes or externally.

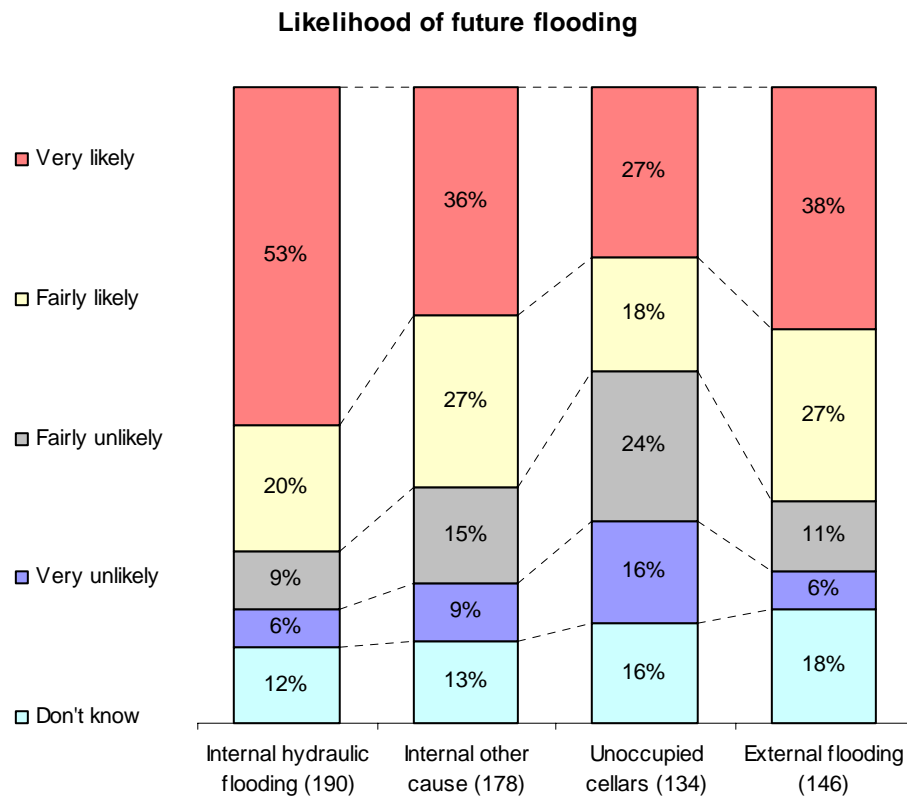
40% of those who have been flooded in their unoccupied cellar are also very concerned though, by contrast, 17% are not at all concerned.



### 10.3.2. Likelihood that the property could be flooded again

Q54. How likely do you think it is that your property will be flooded again by sewage?

A greater proportion of customers who have experienced internal hydraulic flooding think that their property is very likely to be flooded with sewage again.

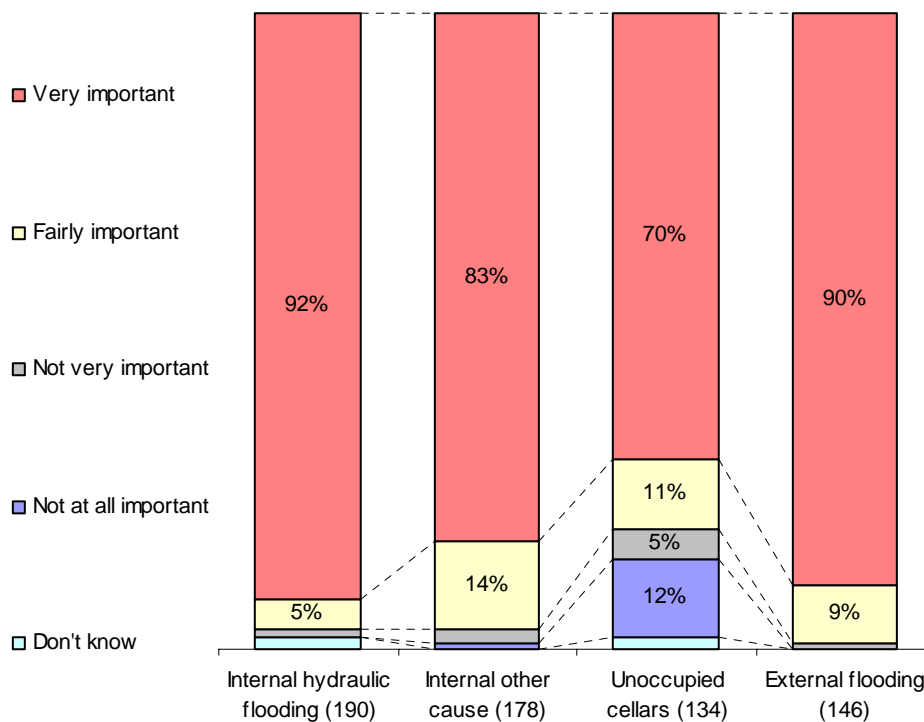


### 10.3.3. Importance of reducing any future risk of sewer flooding

Q55. How important is reducing the risk of any future sewer flooding of your property?

90% of more of customers who have experienced internal hydraulic flooding or external flooding think it is very important to reduce the risk of any future sewer flooding of their property. Though still important to most, fewer customers who have been flooded in their unoccupied cellar think it is very important.

Importance of reducing the risk of future flooding



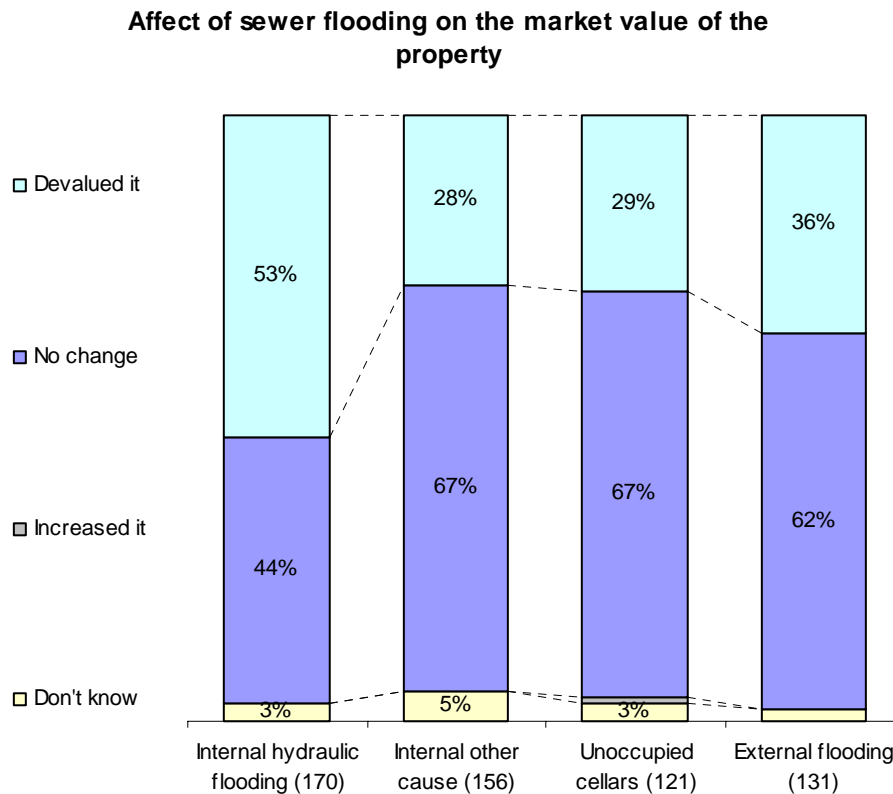
## 10.4. Impact of sewer flooding on the market value of properties

Q61b. *How do you think the sewer flooding has affected the market value of your home, if at all?*

Q61c. *Have you tried to sell your home since your sewer flooding experience?*

53% of customers who have experienced internal hydraulic flooding believe that the incident has had a detrimental affect on the market value of their property. 44% feel it has had no affect.

This view contrasts to other customers, the majority of whom believe that their sewer flooding incident has left the market value of their property unchanged.



Overall just 5% of customers claim they have tried to sell their home since their sewer flooding experience; significantly more who have experienced internal hydraulic flooding however than those who have experienced internal flooding due to other causes.

Tried to sell home	Internal hydraulic flooding	Internal flooding due to other causes	Flooding in unoccupied cellars	External flooding
Yes	7%	1%	6%	5%
Base:	170	156	121	131

## Appendix 1: Profile of customers surveyed

The following table shows when the most recent sewer flooding incident occurred amongst those customers interviewed.

When last experienced sewer flooding			
% of interviews	Yorkshire	Northumbrian	Severn Trent
Within the last 6 months	19%	17%	18%
7 – 12 months ago	24%	54%	35%
1 – 3 years ago	57%	29%	47%

The demographic profile of customers surveyed is as follows:

Gender profile	
Men	48%
Women	52%

Age profile	
18 – 24	2%
25 – 34	10%
35 – 44	23%
45 – 54	16%
55 – 64	21%
65 +	28%

Number of persons in household	
1	20%
2	40%
3	15%
4 or more	25%

Number of children in household	
0	71%
1	10%
2	13%
3 or more	7%

Social class profile	
A	3%
B	18%
C1	30%
C2	21%
D	13%
E	15%

Working status profile	
Employed full time	35%
Employed part time	13%
Not working & looking for work	3%
Not working & not looking for work	10%
Student	1%
Retired	36%
Other	2%

Ethnicity profile	
White – British	91%
White – Irish	1%
White – Other	1%
Black – Caribbean	1%
Black – African	*%
Black – Other	*%
Asian – Indian	2%
Asian – Pakistani	3%
Asian – Bangladeshi	*%
Asian - Other	*%
Mixed – Black Caribbean/African	0%
Mixed – Asian	0%
Mixed – Other	*%
Chinese	*%

\* 0.5% or less

The tables below show the type of property and location of customers surveyed.

Type of property	
Semi-detached	40%
Terraced	35%
Detached	17%
Bungalow	7%
Flat/maisonette	1%

Ownership of property	
Owned by customer	89%
Rented from local authority / housing association	7%
Rented privately	4%
Other	*%

\* 0.5% or less

Location of property	
Edge of town/suburbs	52%
Town/city	30%
Rural/village	17%
Coastal (<1 mile from shoreline)	2%

**Appendix 2: Survey questionnaire**  
**Sewer flooding survey**  
**April/May 2004**

Good morning/afternoon/evening. My name is .... I am from Quality Fieldwork, an independent research company. Severn Trent/Northumbrian/Yorkshire Water would like me to ask you some questions on behalf of Ofwat, the water regulator. These questions are part of a survey we are conducting for Ofwat on the effects of sewer flooding. Your water company needs us to have your permission to proceed and you may recall having received a letter about this. [SHOW INTRODUCTORY LETTER] May I go ahead and ask the questions? It may take about 30 minutes.

<b>Qa</b>	Firstly, may I confirm that you are the person in your household who is responsible for ... (READ OUT)			
		Yes	No	
	a) Paying your water & sewerage bill, either solely or jointly	1	2	IF NO TO (a) OR (b) THANK & CLOSE
	b) Making a claim against any household insurance that you might have in the event of a claimable incident relating to sewer flooding	1	2	

<b>Qb</b>	FROM CUSTOMER LIST:		
	Flooded inside home due to lack of capacity in sewer pipes	1	CHECK QUOTA
	Flooded inside home due to another reason	2	CHECK QUOTA
	Flooded in unoccupied cellar	3	CHECK QUOTA
	Flooded externally	4	CHECK QUOTA

**The problem**

<b>Q1</b>	How long have you lived in this property?			
	Less than a year	1	6 to 10 years	4
	1 to 2 years	2	11 to 20 years	5
	3 to 5 years	3	More than 20 years	6

<b>Q2</b>	How many times have you been affected by sewer flooding in this property since January 2001, if any? IF 0 OR DON'T KNOW THANK & CLOSE		
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<b>Q3</b>	Did you know your property was at risk of sewer flooding before you moved here?							
	Yes	1		No	2		Can't remember	3

<b>Q4</b>	When were you last affected by sewer flooding?							
	Within the last 6 months	1		7 to 12 months ago	2		1 to 3 years ago	3

<b>Q5</b>	Which of the following best describes the sewage that affected you at that time? Was it ... (READ OUT) MULTICODE POSSIBLE				
	A damp patch	1		With faeces or other debris	4
	Clear water	2		Foul smelling	5
	Brown water	3			

<b>Q6</b>	Do you know whether the sewer flooding on your property was due to any of the causes listed on SHOWCARD 1?				
	Blockage in the sewer pipe	1		Equipment failure in the sewer pipe	4
	Collapse of the sewer pipe	2		Other cause (please specify) _____	5
	Overload/sewer pipe not large enough	3		Don't know	6

<b>Q7</b>	What was the weather like at that time? Was it ....(READ OUT) MULTICODE POSSIBLE				
	Dry	1		Prolonged rain	4
	Light rain/drizzle	2		Other (please specify) _____	5
	Heavy rain	3		Don't know/can't remember	6

<b>Q8</b>	I am now going to ask you about the areas in and around your property which were affected by sewer flooding. As we work through this, I'd like you to tell me only about your most recent experience of sewer flooding. There will be an opportunity to add any additional comments you want to make about any earlier problems at the end of the interview.  So, thinking about your most recent experience, which of the following were affected? (READ OUT) ENSURE EACH ASPECT OF THE PROPERTY IS CODED YES, NO OR N/A (CODE N/A WHERE THE PROPERTY DOES NOT HAVE THE ASPECT, E.G. GARDEN, GARAGE/SHED)				
			Yes	No	N/A
	8.1	Local road outside your property	1	2	3
	8.2	Your garden and/or driveway	1	2	3
	8.3	Detached garage, garden shed or greenhouse	1	2	3
	8.4	Your cellar or basement area of your home	1	2	3
	8.5	Elsewhere inside your home &/or integral/attached garage	1	2	3
	8.6	Any other areas not mentioned (please specify) _____	1		

IF Q8.1 CODED 'Yes' (LOCAL ROAD) ASK Q9. OTHERS GO TO Q10:

<b>Q9</b>	How long did the sewage, including any rubbish or debris, remain in the road before it drained away or was cleaned away? Was it.....(READ OUT)					
	Less than an hour	½ day or less	1 day	2 days	3 – 5 days	More than 5 days (specify)
	1	2	3	4	5	6 _____

IF Q8.2 or Q8.3 or Q8.4 or Q8.5 or Q8.6 CODED 'Yes' (INSIDE OR OUTSIDE PROPERTY) ASK Q10. OTHERS GO TO Q12:

<b>Q10</b>	How long did the sewage, including any rubbish or debris, remain at your property before these areas were cleaned and disinfected .....(READ OUT ONLY THOSE AREAS THAT FLOODED AT Q8)							
		Less than 1 day	1 – 2 days	3 – 4 days	1 week	2 weeks	3 - 4 weeks	More than 1 month (specify)
10.1	Your garden and/or driveway	1	2	3	4	5	6	7_____
10.2	Detached garage/garden shed/greenhouse	1	2	3	4	5	6	7_____
10.3	Your cellar or basement area of your home	1	2	3	4	5	6	7_____
10.4	Elsewhere inside your home &/or integral / attached garage	1	2	3	4	5	6	7_____
10.5	Any other areas	1	2	3	4	5	6	7_____

IF Q8.4 or Q8.5 CODED 'Yes' (IN CELLAR/BASEMENT OR INSIDE HOME/INTEGRAL GARAGE) ASK Q11. OTHERS GO TO Q12:

<b>Q11</b>	Looking at SHOWCARD 2, what were the main points of entry of the sewage into your property?				
	Seepage up through floor	1		Bath or shower drain/plug hole	5
	Air bricks	2		Drain or gully	6
	External door	3		Other	7
	Toilet	4			

### Sewer flooding in the cellar/basement area of the home

IF Q8.4 CODED 'Yes' (SEWAGE AFFECTED CELLAR/BASEMENT) ASK Q12. OTHERS GO TO Q16:

<b>Q12</b>	(a) How do you use the cellar/basement area of your home? IF WHOLLY HABITABLE (BASEMENT FLAT) GOTO Q16 (b) How did you use your cellar/basement prior to your first experience of sewer flooding? <b>MULTICODE POSSIBLE</b>		
		(a) now	(b) before
	Not used	1	1
	Storage	2	2
	Utility area	3	3
	Workshop, studio or office in regular use	4	4
	Toilet provision	5	5
	Other (please specify) _____	6	6
	Wholly habitable	(GOTO Q16)	

<b>Q13</b>	How deep was the flooding inside your cellar/basement? Was it....(READ OUT)				
	A small damp patch	1		Up to skirting board level, up to 3" (7.6cm)	5
	Larger damp floor area	2		Deeper than 3" (7.6cm) (specify depth) _____	6
	A trickle	3			
	Covered floor area to a depth of ½" (1.2cm) or less	4			

<b>Q14</b>	Looking at SHOWCARD 3, what work was done to return your cellar/ basement to its original condition and by whom, once the flooding subsided? MULTICODE POSSIBLE					
		Not applicable	Self/family/ friends	Water Co. (or appointed contractors)	Insurance Co. (or appointed contractors)	Other (please specify)
	Sewer flooding pumped out	1	2	3	4	
	Cellar disinfected	1	2	3	4	
	Cellar cleaned with any debris removed	1	2	3	4	
	Property/ items redecorated, repaired, replaced:(specify what & by whom)					
	a)	1	2	3	4	
	b)	1	2	3	4	
	c)	1	2	3	4	
	d)	1	2	3	4	

<b>Q15</b>	Who PAID for the work to be undertaken? (CONSIDER COST OF DISINFECTANT, HIRE OF EQUIPMENT, CLEANING MATERIALS, ETC. IF RESPONDENT PAID FOR WORK BUT WAS REFUNDED BY THE WATER COMPANY, FOR EXAMPLE, CODE WATER COMPANY) MULTICODE POSSIBLE					
		No cost	Self/family/ friends	Water Co. (or appointed contractors)	Insurance Co. (or appointed contractors)	Other (please specify)
	Sewer flooding pumped	1	2	3	4	
	Cellar disinfected	1	2	3	4	
	Cellar cleaned with any debris removed	1	2	3	4	
	Property/ items redecorated, repaired, replaced: (specify what & paid by whom)					
	a)	1	2	3	4	
	b)	1	2	3	4	
	c)	1	2	3	4	
	d)	1	2	3	4	

## Sewer flooding in the home or integral garage

IF Q8.5 CODED 'Yes' (SEWAGE AFFECTED ELSEWHERE INSIDE THE HOME) OR Q12a='Wholly habitable basement flat' ASK Q16. OTHERS GO TO Q23

<b>Q16</b>	Which of the following rooms or areas in your property were affected? READ OUT ENSURE EACH ASPECT OF THE PROPERTY IS CODED YES, NO OR N/A (CODE N/A WHERE THE PROPERTY DOES NOT HAVE THE ASPECT, E.G. AREA UNDER FLOOR BOARDS)				
		Yes	No	N/A	
16.1	Integral/attached garage	1	2	3	
16.2	Porch, door step, entry to your home	1	2	3	
16.3	Under the floor boards	1	2	3	
16.4	Hall	1	2	3	
16.5	Kitchen	1	2	3	
16.6	Dining or living room	1	2	3	
16.7	Bathroom/toilet	1	2	3	
16.8	Bedroom	1	2	3	
16.9	Any other areas not mentioned (please specify) _____	1	2	3	

<b>Q17</b>	How deep was the flooding in your property? Was it...(READ OUT)				
	A small damp patch	1		Up to skirting board level, up to 3" (7.6cm)	5
	Larger damp floor area	2		Deeper than 3" (7.6cm) (specify depth) _____	6
	A trickle	3			
	Covered floor area to a depth of ½" (1.2cm) or less	4			

<b>Q18</b>	Were you able to flush your toilet during the period of the flooding? (IF MORE THAN ONE – FOCUS ON THE ONE AT GROUND LEVEL)					
	Yes	1	No	2	D/K/ can't remember	3
	GO TO Q20		GO TO Q19		GO TO Q20	

IF 'No' AT Q18 (NOT ABLE TO FLUSH TOILET) ASK Q19. OTHERS GO TO Q20

<b>Q19</b>	How long weren't you able to flush your toilet?				
	Less than an hour	1		3 to 5 days	4
	Half a day or less	2		More than 5 days (please specify) _____	5
	A day	3			
	2 days	4		Don't know	6

<b>Q20</b>	Once the flooding subsided in your property, what was done to return it to its original condition? READ OUT & CODE ALL THOSE APPLICABLE. SPECIFY NO. OF ROOMS AFFECTED. TREAT INTEGRAL GARAGE AS ONE ROOM. MULTICODE POSSIBLE		
	Sewer flooding pumped out	1	No. of rooms _____
	Disinfecting	2	No. of rooms _____
	Cleaning, including the removal of any debris	3	No. of rooms _____
	Replacement of floor coverings/carpets	4	No. of rooms _____
	Redecoration of walls	5	No. of rooms _____
	Replacement or repair of furnishings	6	No. of rooms _____
	Replacement or repair of appliances	7	No. of rooms _____
	Rewiring of electrics	8	No. of rooms _____
	Replacement or repair of other items (please specify) _____	9	No. of rooms _____

<b>Q21</b>	RECODE ALL THOSE CIRCLED AT Q20 INTO COLUMN (a) BELOW, THEN ASK FOR EACH WORKS UNDERTAKEN: (b) Who did the work? MULTICODE POSSIBLE					
		(a)	(b) Who did work?			
		Work done from Q20	Self/ family/ friends	Water Co. (or their contractors)	Insurance Co. (or contractors)	Other (specify)
	Sewer flooding pumped out	1	1	2	3	
	Disinfecting	2	1	2	3	
	Cleaning, including the removal of any debris	3	1	2	3	
	Replacement of floor coverings/carpets	4	1	2	3	
	Redecoration of walls	5	1	2	3	
	Replacement or repair of furnishings	6	1	2	3	
	Replacement or repair of appliances	7	1	2	3	
	Rewiring of electrics	8	1	2	3	
	Replacement or repair of other items (please specify) _____	9	1	2	3	

<b>Q22</b>	AGAIN RECODE ALL THOSE CIRCLED AT Q21a INTO COLUMN (a) BELOW, THEN ASK FOR EACH WORKS UNDERTAKEN:					
	(b) Who PAID for the work to be undertaken?		MULTICODE POSSIBLE (IF RESPONDENT PAID FOR WORK BUT WAS REFUNDED BY THE WATER CO., E.G. CODE WATER COMPANY)			
		(a)	(b) Who PAID			
		Work done from Q21a	Self/ family/ friends	Water Co. or their contractors	Insurance Co., or contractors	Other (specify)
	Sewer flooding pumped out	1	1	2	3	
	Disinfecting	2	1	2	3	
	Cleaning, including the removal of any debris	3	1	2	3	
	Replacement of floor coverings/carpets	4	1	2	3	
	Redecoration of walls	5	1	2	3	
	Replacement or repair of furnishings	6	1	2	3	
	Replacement or repair of appliances	7	1	2	3	
	Rewiring of electrics	8	1	2	3	
	Replacement or repair of other items (please specify) _____	9	1	2	3	

### Sewer flooding outside the home

**CHECK Q8.** IF Q8.2, Q8.3 or Q8.6 CODED 'Yes' (SEWAGE AFFECTED OUTSIDE THE HOME) ASK Q23. OTHERS GO TO Q26.

<b>Q23</b>	Once the flooding subsided in .....(COMPLETE FOR EACH AREA AFFECTED OUTSIDE THE HOME), what had to be done to return it to its original condition? MULTICODE POSSIBLE			
		(Q8.2) Garden/ driveway	(Q8.3) Detached garage/ garden shed/ greenhouse	(Q8.6) Other areas
	Disinfecting	1	1	1
	Cleaning, including the removal of any debris	2	2	2
	Replacement of soil, gravel or other ground covering	3	3	3
	Replacement of plants/vegetables	4	4	4
	Repair or replacement of toys or play equipment	5	5	5
	Repair or replacement of garden furniture or appliances	6	6	6
	Repair or replacement of other items (please specify) _____	7	7	7

<b>Q24</b>	RECODE ANY WORK MENTIONED AT Q23 INTO COLUMN (a) BELOW, THEN ASK FOR EACH WORKS UNDERTAKEN: (b) Who did the work? MULTICODE POSSIBLE					
		(a)	(b) Who did work			
		Work done from Q23	Self/ family/ friends	Water Co. or their contractors	Insurance Co., or contractors	Other (specify)
	Disinfecting	1	1	2	3	
	Cleaning, including the removal of any debris	2	1	2	3	
	Replacement of soil, gravel or other ground covering	3	1	2	3	
	Replacement of plants/vegetables	4	1	2	3	
	Repair or replacement of toys or play equipment	5	1	2	3	
	Repair or replacement of garden furniture or appliances	6	1	2	3	
	Repair or replacement of other items (specify)	7	1	2	3	
	_____					

<b>Q25</b>	AGAIN RECODE ANY TYPE OF WORK MENTIONED AT Q24a INTO COLUMN (a) BELOW, THEN ASK FOR EACH WORKS UNDERTAKEN: (b) Who PAID for the work to be undertaken? MULTICODE POSSIBLE (IF RESPONDENT PAID FOR WORK BUT WAS REFUNDED BY THE WATER COMPANY FOR EXAMPLE CODE WATER COMPANY)					
		(a)	(b) Who PAID			
		Work done from Q24a	Self/ family/ friends	Water Co. or their contractors	Insurance Co. or their contractors	Other (please specify)
	Disinfecting	1	1	2	3	
	Cleaning, including the removal of any debris	2	1	2	3	
	Replacement of soil, gravel or other ground covering	3	1	2	3	
	Replacement of plants/vegetables	4	1	2	3	
	Repair or replacement of toys or play equipment	5	1	2	3	
	Repair or replacement of garden furniture or appliances	6	1	2	3	
	Repair or replacement of other items (specify)	7	1	2	3	
	_____					

<b>Q25c</b>	How has the sewer flooding incident changed the way in which you use the affected areas (i.e. garden, garage, shed), if at all? PROBE

### Things done well or poorly

<b>Q26</b>	Was anything done to help you that you think was particularly good? PROBE

<b>Q27</b>	Is there anything else that you think should have been done at the time to help you but wasn't?

### Insurance claim

<b>Q28</b>	Do you currently have: (READ OUT)			
		Yes	No	Don't know/ Can't remember
	a) Buildings insurance	1	2	3
	b) Contents insurance	1	2	3

<b>Q29</b>	At the time of your last sewer flooding incident, did you have: (READ OUT)			
		Yes	No	Don't know/ Can't remember
	a) Buildings insurance	1	2	3
	b) Contents insurance	1	2	3

IF EITHER GOTO Q30    IF BOTH GOTO Q36    GOTO Q36

IF 'Yes' AT Q29a OR Q29b (HAD INSURANCE) ASK Q30. OTHERS GO TO Q36

<b>Q30</b>	Did you make an insurance claim?								
	Yes	1		No	2		Can't remember	3	
	GO TO Q32			GO TO Q31			GO TO Q36		

IF 'No' AT Q30 (NOT CLAIMED ON INSURANCE) ASK Q31. OTHERS GOTO Q32

<b>Q31</b>	Which of the reasons listed on SHOWCARD 4 best describe why you did not make an insurance claim?		
	The cost was below the premium excess	1	
	A claim would have resulted in an increase in the premium cost	2	
	A claim would have been rejected by the insurance company	3	
	My policy does not cover sewer flooding	4	
	Sewer flooding is not the responsibility of the insurance company	5	
	No real damage/not worth claiming	6	
	Did not think of claiming	7	
	Other reason (please specify) _____	8	

NOW GOTO Q36

IF 'Yes' AT Q30 (CLAIMED ON INSURANCE) ASK Q32. OTHERS GO TO Q36

<b>Q32</b>	Has your insurance policy come up for renewal since your most recent sewer flooding incident?							
	Yes	1		No	2		Can't remember	3

GOTO Q33

GOTO Q36

GOTO Q36

IF 'Yes' AT Q32 (POLICY DUE FOR RENEWAL) ASK Q33. OTHERS GO TO Q36

<b>Q33</b>	At the time of the renewal, were you able to: (READ OUT)			
		Yes	No	Not applicable/ Don't know
	a) Get insurance that still covered sewer flooding?	1	2	3
	b) Shop around and seek out the most competitively priced policy?	1	2	3

<b>Q34</b>	As a direct result of the sewer flooding, has your		
	(a) Annual insurance premium remained the same or increased in price?		
	(b) What about your insurance excess, has this remained the same or increased in price?		
		(a) Insurance premium	(b) Insurance excess
	Remained the same	1	1
	Increased (by how much):		
	£1 - £50	2	2
	£51 - £100	3	3
	£101 - £250	4	4
	£251 - £500	5	5
	£501 - £1000	6	6
	£1001 or more (specify) _____	7	7
	Don't know	8	8

<b>Q35</b>	Have any additional conditions or clauses been added to your insurance policy since the sewer flooding incident?

## The cost

ASK ALL:

<b>Q36</b>	<p>a) In total, how much would you say it cost YOU to put things right on your property, (e.g. clean and repair or replace items)?</p> <p>b) Were there any other costs that you incurred that were later refunded by your water and sewerage company, insurance company, local council or any other organisation?</p> <p>c) IF YES: Who refunded these costs, and how much were they?</p> <p>(ANY INCREASES IN INSURANCE PREMIUM COSTS, LOST EARNINGS SHOULD BE EXCLUDED)</p>									
	a)	Respondent cost	£	b)	Yes	1	Ask (c)	No	2	GOTO Q37
				c) IF YES:						
				Water & sewerage company				£		
				Insurance company				£		
				Local council				£		
				Other organisation (specify)				£		
				_____						

<b>Q37</b>	How many hours or days do you think you and your family spent dealing with the sewer flooding incident, including cleaning up and contacting your water and sewerage company?		
	_____ Hours	_____ Days	

<b>Q38</b>	How many hours or days were taken off work, if any?			
	Hours		Days	

<b>Q39</b>	Did your water and sewerage company give you a Guaranteed Service Standard payment, which is a rebate off your sewerage bill? (READ OUT)			
	Yes	1	How much was it?	£
	No	2		
	Don't know/ Can't remember	3		

<b>Q40</b>	Overall, thinking about the distress, cost and any payments you may have received, do you think you have been adequately compensated by your water and sewerage company?							
	Yes	1		No	2		Don't know	3

## Moving out

<b>Q41</b>	Did you have to leave your home and stay elsewhere at any time during the most recent sewer flooding incident?					
	Yes	1	GOTO Q42	No	2	GOTO Q45

IF 'Yes' AT Q41 (LEFT HOME) ASK Q42. OTHERS GO TO Q45

<b>Q42</b>	How long did you stay away from home?				
	Just overnight	1		A week	4
	Couple of days & nights	2		Other (please specify) _____	5
	Several days & nights	3			

IF 'Yes' Q41 (LEFT HOME) ASK Q43. OTHERS GO TO Q45

<b>Q43</b>	Where did you stay?				
	With friends/relatives	1		Other (please specify) _____	4
	Hotel	2			
	Rented temporarily	3			

IF 'Yes' AT Q41 (LEFT HOME) ASK Q43. OTHERS GO TO Q45

<b>Q44</b>	Who PAID for the accommodation? (IF RESPONDENT PAID BUT WAS REFUNDED BY THE WATER CO., FOR EXAMPLE, CODE WATER COMPANY)				
	Not applicable	1		Insurance company	4
	Self	2		Local Council	5
	Water & sewerage company	3		Other (please specify) _____	6

## Overall experience

<b>Q45</b>	Thinking about your last experience of sewer flooding, how upsetting would you say it was overall?				
	Very upsetting	1		Not very upsetting	3
	Fairly upsetting	2		Not at all upsetting	4

<b>Q46</b>	Using SHOWCARD 5, to what extent do you agree or disagree with the following statements? ROTATE. MARK STARTING POINT AND ROTATE WITH EACH QUESTIONNAIRE						
<b>Mark start</b>		Strongly agree	Slightly agree	Neither	Slightly disagree	Strongly disagree	Don't know
	a) I wouldn't wish my experience on anyone else	1	2	3	4	5	6
	b) Things could have been a lot worse	1	2	3	4	5	6
	c) Recovering from this sewer flooding incident has been very difficult emotionally	1	2	3	4	5	6
	d) It is one of those things that happen from time to time; I soon forgot about it	1	2	3	4	5	6
	e) I have been kept awake at night by the worry of sewer flooding	1	2	3	4	5	6
	f) I need to look at ways in which I could reduce the risk of sewer flooding to my property	1	2	3	4	5	6
	g) Sewer flooding was inconvenient but not traumatic	1	2	3	4	5	6

<b>Q47</b>	How concerned were you about the health and sickness implications of the sewer flooding on you and your household? (READ OUT)				
	Very concerned	1		Not very concerned	3
	Fairly concerned	2		Not at all concerned	4
				Don't know	5

<b>Q48</b>	With sewer flooding in mind, how concerned are you generally about leaving your property .....? (READ OUT)					
		Very concerned	Fairly concerned	Not very concerned	Not at all concerned	Don't know/ N/A
	For a week, perhaps to go on holiday	1	2	3	4	5
	For a day, perhaps to go to work or visit a friend	1	2	3	4	5
	For an hour or so, to pop down to the local shops for example	1	2	3	4	5

<b>Q49</b>	a) Which, if any, of the actions on SHOWCARD 6 have been taken at any time to help reduce the risk or effect of any future sewer flooding incident?				
	b) ASK FOR ALL MENTIONED AT Q49a: Who took these actions - yourself, your water & sewage company or someone else? (Multicode possible)				
		(a)	(b)		
		Done	Self/ family/ friends	Water company	Other (please specify)
a)	Ground landscaping or building of boundary wall to divert the sewage flow	1	1	2	3 _____
b)	Fitting of flood boards	2	1	2	3 _____
c)	Fitting of air brick protectors	3	1	2	3 _____
d)	Fitting of UPVC doors	4	1	2	3 _____
e)	Fitting of non return valves in the sewer pipes	5	1	2	3 _____
f)	Bolting down of sewer pipe inspection covers	6	1	2	3 _____
g)	Installation of a pump in your home	7	1	2	3 _____
h)	Disconnection of your cellar drainage	8	1	2	3 _____
i)	Replacement of wooden floor boards with concrete floor	9	1	2	3 _____
j)	None of these	10			

<b>Q50</b>	What other actions, if any, have been taken to reduce the risk of future sewer flooding to your property?	
	None taken	1
	Action taken	By whom? (RESPONDENT, WATER COMPANY OR SOMEONE ELSE?)

IF ACTION TAKEN BY SELF/ FAMILY OR FRIENDS AT Q49 OR Q50 ASK Q51. OTHERS GOTO Q52

<b>Q51</b>	<p>a) Approximately, how much did this work cost YOU?</p> <p>b) Were there any other costs that you incurred that were later refunded by your water and sewerage company, insurance company, local council or any other organisation?</p> <p>c) IF YES: Who refunded these costs, and how much were they?</p>									
	a)	Respondent cost	£	b)	Yes	1	Ask (c)	No	2	GOTO Q52
				c) IF YES:						
				Water & sewerage company					£	
				Insurance company					£	
				Local council					£	
				Other organisation (specify)					£	
				_____						

<b>Q52</b>	If it were not possible to completely remove the risk of flooding, how would you rank the four actions on SHOWCARD 7? Rank the most important action 1, the next as 2 and so on to 4 for the least important.	
		Ranking <b>DO NOT 'TICK'</b>
	Help to reduce the effect of sewer flooding through actions like those on showcard 6	
	Full compensation for damage caused by flooding	
	Advance warning that flooding is possible	
	Help with cleaning up and putting things right	

<b>Q53</b>	How concerned are you that your property could be flooded again?				
	Very concerned	1		Not very concerned	3
	Fairly concerned	2		Not at all concerned	4
				Don't know	5

<b>Q54</b>	How likely do you think it is that your property will be flooded again by sewage?				
	Very likely	1		Fairly unlikely	3
	Fairly likely	2		Very unlikely	4
				Don't know	5

<b>Q55</b>	How important is reducing the risk of any future sewer flooding of your property?				
	Very important	1		Not very important	3
	Fairly important	2		Not at all important	4
				Don't know	5

<b>Q56</b>	As a result of your sewer flooding experience, which of the statements on SHOWCARD 8 best describe your attitude towards moving from your home? MULTICODE POSSIBLE	
	I don't want to move home	1
	I would move home only if I could get similar accommodation locally	2
	I would move home if I could and go anywhere	3
	I would move home only if I could get the full market value for my home	4
	I would move home if someone was willing to buy it	5
	Currently trying to move	6

<b>Q57</b>	Lastly I would like to ask you a small number of questions about yourself. However, before I do this, is there anything else you would like to tell me about or other experiences you have had of sewage flooding at this property?

## Demographics

<b>Q58</b>	Can I just check within which age band you fall please? READ OUT							
	18 - 24	1		35 - 44	3		55 - 64	5
	25 - 34	2		45 - 54	4		65+	6

<b>Q59</b>	How many adults and children are there are in your household?			
	Adults			Children(< 18 yrs)

<b>Q60</b>	Is your home:			
	Detached	1		Terraced
	Semi-detached	2		Bungalow
	Flat/maisonette	3		Other (please specify)_____
				4
				5
				6

<b>Q61a</b>	Is your home:			
	Owned by yourself	1		Rented from local authority/housing association
	Rented privately	2		Other (please specify)_____
				3
				4

IF 'Owned' AT Q61a ASK Q61b. OTHERS GO TO Q62

<b>Q61b</b>	How do you think the sewer flooding has affected the market value of your home, if at all?							
	Devalued it	1		No change	2		Increased it	3

IF 'Owned' AT Q61a ASK Q61c. OTHERS GO TO Q62

<b>Q61c</b>	Have you tried to sell your home since your sewer flooding experience?				
	Yes	1		No	2

<b>Q62</b>	What is your current working status?				
	Employed full-time	1		Not working & not looking for work	4
	Employed part-time	2		Not working & looking for work	5
	Retired	3		Student	6
				Other (please specify) _____	7

<b>Q63</b>	What is the occupation of your household's chief income earner, that is the person with the largest income whether from employment, pensions, state benefits, investments or other source?					
	Occupation		Position/rank/grade			
	No. of staff responsible for		Industry/ type of company			
	Qualification/apprenticeships					
	Social Grade (INTERVIEWER CODE)					
	A	B	C1	C2	D	E
	1	2	3	4	5	6

<b>Q64</b>	To help ensure that we interview a good cross-section of people, could you please give me the number from SHOWCARD 9 that most closely approximates your total household income from all sources before tax and other deductions?		
	<b>Per Week</b>	<b>Per Year</b>	
	Up to £48	Under £2,500	01
	£48 - £86	£2,500 - £4,499	02
	£87 - £125	£4,500 - £6,499	03
	£126 - £144	£6,500 - £7,499	04
	£145 - £182	£7,500 - £9,499	05
	£183 - £221	£9,500 - £11,499	06
	£222 - £259	£11,500 - £13,499	07
	£260 - £298	£13,500 - £15,499	08
	£299 - £336	£15,500 - £17,499	09
	£337 - £480	£17,500 - £24,999	10
	£481 - £576	£25,000 - £29,999	11
	£577 - £769	£30,000 - £39,999	12
	£770 - £961	£40,000 - £49,999	13
	£962 - £1,441	£50,000 - £74,999	14
	£1,442 or over	£75,000 or over	15
	Don't know		16
	Refused		17

<b>Q65</b>	Looking at SHOWCARD 10, which one of these best describes your ethnic origin? Just tell me the number on the showcard						
	White	British	1		Mixed	White & Black Caribbean/African	11
		Irish	2			White & Asian	12
		Other	3			Other	13
	Black	Caribbean	4		Chinese		14
		African	5		Other (WRITE IN)	_____	15
		Other	6		Refused		16
	Asian	Indian	7				
		Pakistani	8				
		Bangladeshi	9				
		Other	10				

<b>Q66</b>	Location (INTERVIEWER CODE) MULTICODE POSSIBLE				
	Rural/village	1		Edge of town/suburbs	3
	Town/city	2		Coastal (less than 1 mile/1.6km from shoreline)	4

<b>Q67</b>	GENDER (INTERVIEWER CODE)	Male	1		Female	2
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READ OUT: In order that ..... can check the quality of my interviews, I am asked to provide the contact details of those who have kindly participated in this survey. These details remain confidential and are not passed to Ofwat, WaterVoice, the water and sewerage companies or any other organisation. May I ask your name please...

<b>Q68</b>	NAME:	Mr/Mrs/Ms/Miss
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<b>Q69</b>	ADDRESS:	

<b>Q70</b>	TELEPHONE NO :	
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<b>Q71</b>	CODE NO. (FROM LIST):	
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Without these details the interview can not be authenticated.

**Thank you very much for taking part in this survey.**

If the respondents wish to contact someone at their water and sewerage company to discuss any outstanding sewer flooding problems then you may give them one of the following numbers:

**Severn Trent Water**

For customers in Nottinghamshire, Derbyshire, Leicestershire, Warwickshire:

Contact Margaret Burrup 0116 234 3575

For customers in Worcestershire, Gloucestershire, West Midlands, Staffs and Shropshire:

Contact Paul Gregory 0121 452 3385

Also Dave Wilkes covers all the company on 0116 234 3527

**Northumbrian Water**

Contact the bill centre on 08457 171 100

**Yorkshire Water**

Contact Patrick Hargreaves on 01274 804537

The numbers are not 24/7 and therefore should not be used to report emergencies or new issues.

**Interviewer Declaration**

I confirm that I have carried out this interview face-to-face with the above named person and that I asked all the relevant questions fully and recorded the answers in conformance with the survey specification and within the MRS Code of Conduct.

Interviewer Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Interviewer no.: \_\_\_\_\_ Date of interview: \_\_\_\_\_

Length of interview: \_\_\_\_\_

**MRS statement:** This survey has been conducted by ..... and the answers you have provided will be treated as confidential. You will not be identified as having participated in the study. Should you have a query about the survey please call the MRS on Freephone 0500 39 69 99 or Saeeda Ajaib on 0121 623 1321.

# SHOWCARD 1

1. Blockage in the sewer pipe
2. Collapse of the sewer pipe
3. Overload in the sewer pipe/sewer pipe not large enough
4. Equipment failure in the sewer pipe
5. Other cause

## SHOWCARD 2

1. Seepage up through the floor
2. Air bricks
3. External door
4. Toilet
5. Bath or shower drain/plug hole
6. Drain or gully
7. Other point of entry

## **SHOWCARD 3**

1. Sewer flooding pumped out of the cellar
2. Cellar disinfected
3. Cellar cleaned with any debris removed
4. Property/items redecorated, repaired or replaced

## SHOWCARD 4

1. The cost was below the premium excess
2. A claim would have resulted in an increase in the premium cost
3. A claim would have been rejected by the insurance company
4. My policy does not cover sewer flooding
5. Sewer flooding is not the responsibility of the insurance company
6. No real damage/not worth claiming
7. Did not think of claiming
8. Other reason

## **SHOWCARD 5**

1. Strongly agree
2. Slightly agree
3. Neither agree nor disagree
4. Slightly disagree
5. Strongly disagree

## SHOWCARD 6

- a. Ground landscaping or building of boundary wall to divert the sewage flow
- b. Fitting of flood boards
- c. Fitting of air brick protectors
- d. Fitting of UPVC doors
- e. Fitting of non return valves in the sewer pipes
- f. Bolting down of sewer pipe inspection covers
- g. Installation of a pump in your home
- h. Disconnection of your cellar drainage
- i. Replacement of wooden floor boards with concrete floor

## SHOWCARD 7

- Help to reduce the effect of sewer flooding through actions like those on showcard 6
- Full compensation for damage caused by flooding
- Advance warning that flooding is possible
- Help with cleaning up and putting things right

## SHOWCARD 8

1. I don't want to move home
2. I would move home only if I could get similar accommodation locally
3. I would move home if I could and go anywhere
4. I would move home only if I could get the full market value for my home
5. I would move home if someone was willing to buy it
6. Currently trying to move

## SHOWCARD 9

	Per Week	Per Year
1	Up to £48	Under £2,500
2	£48 - £86	£2,500 - £4,499
3	£87 - £125	£4,500 - £6,499
4	£126 - £144	£6,500 - £7,499
5	£145 - £182	£7,500 - £9,499
6	£183 - £221	£9,500 - £11,499
7	£222 - £259	£11,500 – £13,499
8	£260 - £298	£13,500 - £15,499
9	£299 - £336	£15,500 - £17,499
10	£337 - £480	£17,500 - £24,999
11	£481 - £576	£25,000 - £29,999
12	£577 - £769	£30,000 - £39,999
13	£770 - £961	£40,000 - £49,999
14	£962 - £1,441	£50,000 - £74,999
15	£1,442 or over	£75,000 or over

## SHOWCARD 10

1. White: British
2. Irish
3. Other
4. Black: Caribbean
5. African
6. Other
7. Asian: Indian
8. Pakistani
9. Bangladeshi
10. Other
11. Mixed: White & Black Caribbean/African
12. White & Asian
13. Other
14. Chinese
15. Other