

# South Staffs Water

## PR14 Customer Research

Summary of Findings on  
Customer Willingness to Pay



**In 2014 Ofwat, the water regulator, will set new limits on the prices and bills that South Staffs Water can charge its customers over the period 2015-20.**

As part of this price setting process South Staffs Water will be submitting to Ofwat in December 2013 a proposed business plan for 2015-20. This plan will set out in detail a set service and spending priorities for the water supply services provided by South Staffs Water to over 500,000 household and business customers.

This plan will take into account an extensive programme of consultation and engagement with customers. South Staffs Water will be expected to demonstrate how its plan and the impacts on bills align with customer priorities and expectations.

In early 2013 South Staffs Water commissioned ICS Consulting & EFTEC to conduct research on customer priorities for services and bills.

This report summarises the high level findings from this research.



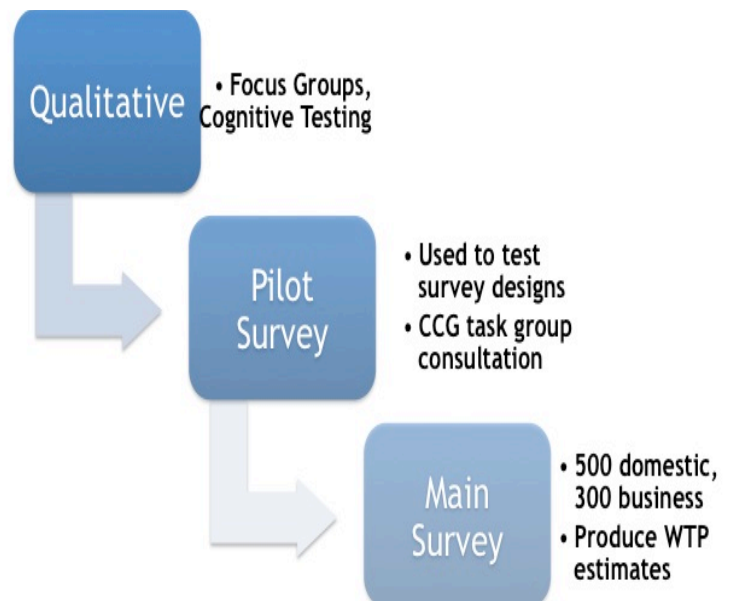
## Our approach to this study

Ofwat's process for PR14 places significant emphasis on engaging with customers to understand their service priorities and the value they put on different aspects of their water service.

Our study method follows industry best practice for undertaking stated preference research. We used focus groups and cognitive testing with customers to develop the initial survey instrument. This was then pilot tested and discussed with the CCG task group. The survey was refined at this stage before conducted the main study fieldwork.

The main study fieldwork was conducted with 500 domestic customers face to face in their homes. 300 business customers were recruited by telephone and completed an online survey.

The study at all stages was peer reviewed by Professor Ken Willis, University of Newcastle upon Tyne.



# KEY FINDINGS

## CUSTOMER VIEWS ON CURRENT SERVICE & BILLS

**We asked customers about the areas of service that require improvement and how they feel about current and future bills.**

- The quality of the tap water supplied by South Staffs Water came out as the main area for improvement
- About half of all customers thoughts current bills were about right. About 35% felt bills were slightly too high.
- 70% of households & 57% of businesses prefer bills to remain the same. Only 2-3% said they would prefer lower bills with lower service.



## WILLINGNESS TO PAY BY SERVICE ASPECT

**We presented choices to customers about different levels of service and bills covering 11 measures of service. Their responses are used to estimate willingness to pay for changes to individual areas of service**

- We find strong evidence that South Staffs Water customers value more highly avoiding service reductions compared to their value for service improvements.
- Household customers value more highly than business customers aspects of drinking water quality. Business customers value more highly environmental impacts and aspects of supply reliability.



## WILLINGNESS TO PAY FOR OVERALL SERVICE IMPROVEMENTS

**We also presented respondents with choices about overall packages of service improvements. This is to test the validity of the valuations by service aspect.**

- For households we find an overall willingness to pay of £9.80 per annum (= 6.7% of current bills) for a maximum improvement in all aspects of service.
- For business the equivalent value estimate is 5.1% on current bills
- These values represent upper limits on any overall bill impacts



## USING THE RESULTS

**This research estimates the benefits in monetary terms to customers of changing the current service to customers.**

- South Staffs Water will use this research to identify the balance between maintaining and improvements in service that will provide maximum value for customers.
- This research provides a key input to that decision making. Its does not determine the outcome for customer bills.
- Further steps are envisaged - using tools like cost benefit analysis - before the plan can be finalised.





## introduction

In preparation for the 2014 Periodic Review South Staffs Water commissioned this study to help understand the value to customers of different levels of service.

The pilot and main fieldwork for this study was conducted between January to May 2013.

Representative samples of 500 household and 300 business bill payers completed the survey.

The results of this study are being used to help South Staffs Water to prepare their business plan submission to Ofwat in December 2013.

Respondents completed a 20-25 minute survey covering a range of questions about their current and future water services.

In the survey respondents are asked to make choices about the combination of service and price that they would prefer from South Staffs Water. Service was defined in terms of 11 measures covering the 3 areas:

- the quality of tap water
- The availability of water and impacts on the water environment; and
- the reliability of the water supply.

These choices are used to infer or estimate the value in monetary terms - known as willingness to pay - of each service measure.

We report on:

- the willingness to pay for each service measure
- the willingness to pay for packages of service improvements
- how the valuations are used in South Staff's business planning,

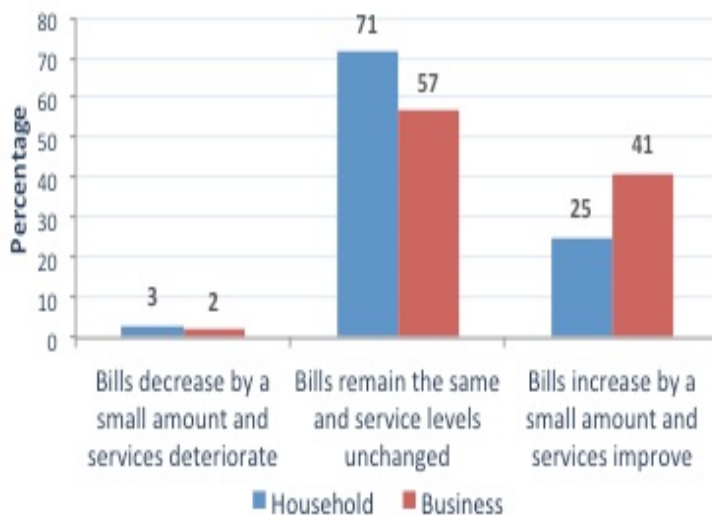
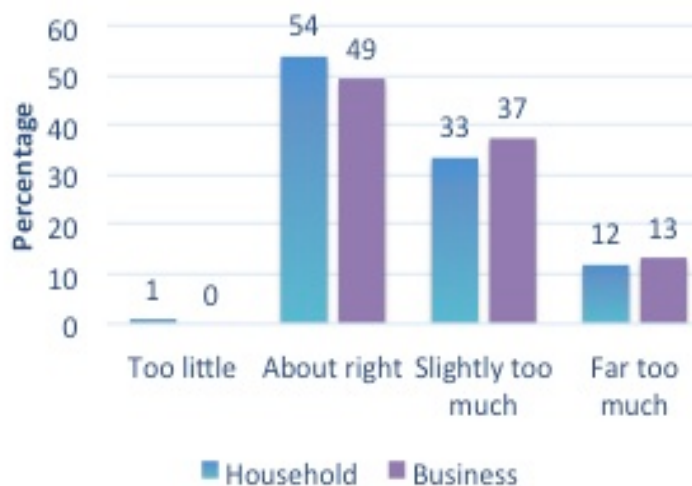
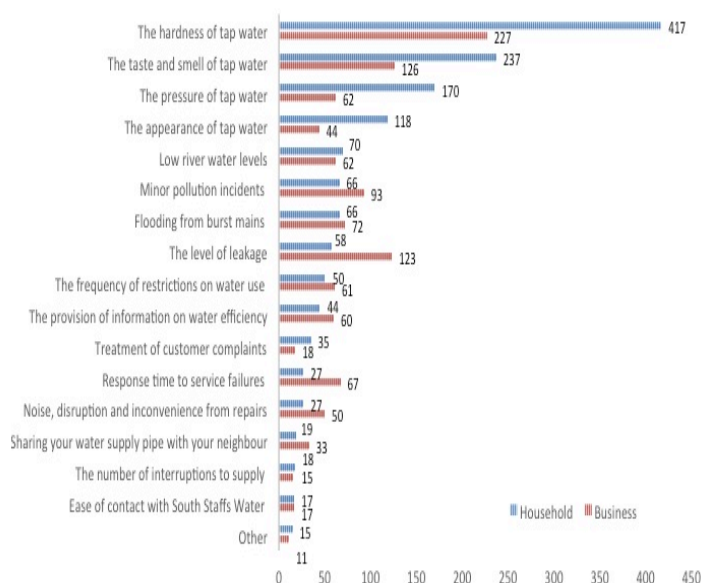


Before doing the choice tasks in the survey respondents were asked about their views on the current service provided by South Staffs Water and the bills they pay.

The first chart shows how respondents rated the different aspects of service they identified in 'need of improvement'. They were asked to indicate their top 3 priorities and in this chart a 1st priority is scored as '3', a second priority as '2' and a third priority as '1'. The scores are then summed to give a total rating. Both households and business rated the hardness of tap water as the top priority for improvement. Households generally rated more highly issues relating to tap water quality. Businesses placed relatively more weight on leakage and response times to service failures.

Respondents were then asked about their current bills. 54% of households said their current bills were 'about right'. This figure was slightly lower for businesses - 49%. 33% of households said current bills were 'slightly too much', while 37% of businesses felt this. Just over 1 in every 10 households and businesses felt current bills were 'far too much'.

Finally, when asked about future bills and service 71% of households said they would opt for bills and service remaining unchanged. This was lower at 57% for businesses. 25% of households would pay a small bill increase for improved service, while 41% of businesses would opt for improved service and a small bill increase. Very few customers would choose reductions in service even if bills were decreased by a small amount to compensate.





## what we mean by willingness to pay

Willingness to pay measures the value or benefit people get from consuming a product or service.

In a traditional market setting people make the decision to buy a product or service if the price or cost is worth paying. This is based on comparing its value or benefit with the price or cost. Where value exceeds or matches price or cost, then people will decide it is worth buying.

Willingness to pay therefore measures the maximum price a customer would pay.

Water companies can use this idea to decide if it is worth supplying more or less of the services they provide.

Comparing the estimates of benefit to cost will allow South Staffs Water to determine the most economic level of service to customers.

In this study we provide two types of Willingness to pay estimate.

The first is the ***Willingness to Pay for a unit of service change***. This is akin to the value of buying a single unit of a single product or service.

The second type of estimate is the ***Willingness to pay for a package of service improvements***. This is akin to the value of buying a shopping basket containing multiple units of more than one product or service.

Used in combination these estimates help us measure the independent value of each service measure, but also the value of the service measures when presented together as a package.

| Drinking water quality  | Availability & Environment  | Supply Reliability   |
|---|---|--|
| <ul style="list-style-type: none"> <li>• Boil water notices</li> <li>• Discolouration</li> <li>• Taste &amp; Smell</li> <li>• Hardness</li> </ul> | <ul style="list-style-type: none"> <li>• Hosepipe bans</li> <li>• Pollution incidents</li> <li>• Low flows in rivers &amp; streams</li> </ul> | <ul style="list-style-type: none"> <li>• Internal water flooding</li> <li>• Leakage</li> <li>• Unexpected interruptions (3-6 hrs)</li> <li>• Low pressure</li> </ul> |

The 11 service measures above were valued in the study. They were presented in 3 groups for the purposes of generating the combinations of service and price offered to customers.

Group 1 relates to the quality of tap water and covers the risk of precautionary measures before consuming tap water (Boil Water Notices), the aesthetic quality of tap water (its appearance, taste and smell) and the chemical composition of tap water (hardness).

Group 2 is defined in terms of water availability and environmental impacts. Water availability is expressed in terms of the frequency of restrictions on customer use of water, i.e. how often the available volume of water is insufficient to meet customer demands. For households the most likely restriction is a hosepipe ban, while for businesses it is a non-essential use ban.

Environmental impact is measured in terms of pollution incidents caused by South

Staffs Water. When equipment fails at works, chemicals can be discharged to rivers causing minor pollution impacts.

The abstraction of water by South Staffs Water can also affect the level of flow in rivers and streams. Low flows can have adverse impacts on river ecology, habitats and wildlife.

Group 3 is focused on the reliability of the supply provided by the network of pipes operated and maintained by South Staffs Water. The chosen measures cover impacts like flooding (caused by burst water mains), leakage from mains, unexpected short duration interruptions to supplies and low water pressure at the tap.

In principle, South Staffs Water can target its spending and effort at improving any of these service areas. To prioritise this effort it helps to understand the value of each area. Where the 'bucks' will deliver the most 'bangs' for its customers.





## drinking water quality

The quality of tap water comes out high as a service priority especially for households customers.

Both household and business customers place significantly higher value on avoiding reductions in tap water quality. Willingness to pay for even higher service by comparison is much lower.

Households values for drinking water quality are higher than business customer values.

In this section we present the findings on how household and business customers valued changes in the quality of the tap water they receive.

In the survey 4 aspects of tap water quality were presented:

- **Boil water notices** - these are statutory notices that advise tap water be boiled as a precaution in the event of contamination. They are needed very rarely. Currently only 30 properties are affected each year on average.
- **Discoloured water** - Tap water can be discoloured due to natural variations or sediments in water mains. Currently 2,500 properties are affected (4.4 per thousand)
- **Taste & Smell** - Currently 1,000 (1.8 per thousand) receive tap water that was unpleasant to taste or smell.
- **Hardness** - South Staffs Water is a hard water area. Currently 12,000 properties receive very hard water and 558,000 moderately hard water. Hardness can cause problems with appliances like kettles & washing

| Service Measure   | Units                      | Change in Service Level |              |                            |                 |
|-------------------|----------------------------|-------------------------|--------------|----------------------------|-----------------|
|                   |                            | Reduction -2            | Reduction -1 | Improvement +1             | Improvement +2  |
| Boil Water Notice | <b>Properties affected</b> | <b>5,970</b>            | <b>970</b>   | <b>-30</b>                 | <b>N/a</b>      |
|                   | Annual % WTP per household | -70                     | -11          | 0.1                        |                 |
|                   | Annual % WTP per business  | -34                     | -6           | 0.1                        |                 |
| Discoloured water | <b>Properties affected</b> | <b>2,500</b>            | <b>1,000</b> | <b>-500</b>                | <b>-1,000</b>   |
|                   | Annual % WTP per household | -36                     | -14          | 1.0                        | 2.0             |
|                   | Annual % WTP per business  | -26                     | -10          | 1.7                        | 3.4             |
| Taste and smell   | <b>Properties affected</b> | <b>500</b>              | <b>250</b>   | <b>-250</b>                | <b>-500</b>     |
|                   | Annual % WTP per household | -9                      | -5           | 0.5                        | 1.0             |
|                   | Annual % WTP per business  | -7                      | -4           | 0.9                        | 1.9             |
| Hard water        |                            | <b>N/a</b>              | <b>N/a</b>   | <b>All moderately hard</b> | <b>All soft</b> |
|                   | Annual % WTP per household |                         |              | 2.4                        | 5.0             |
|                   | Annual % WTP per business  |                         |              | 3.2                        | 2.6             |

Note: Bold indicates estimate is statistically significant at the 95% level

The table above presents the estimated household and business valuations for each measure and service level presented in the drinking water quality choice block. Respondents were presented with up to 2 improvement options and up to 2 reduction options (where appropriate). The valuations are presented in % (of bill) terms to allow the household and business estimates to be directly comparable.

Across all of the attributes a clear pattern emerged. The willingness to pay for improvements boil water notices, discoloured water and taste and smell is relatively small - we comment further on hard water below. This contrasts notably higher values attached to reductions in these service risks. Customers, therefore, would attach more value to avoiding these risks getting worse in the future as opposed to reducing the current risks.

The service changes for each measure do differ so this needs to be borne in mind

when comparing across service measures. This broad pattern is strongest for the risk of boil water notices. Willingness to pay for a very small improvement is low for both households and business. For increased risk of boil water notices households value is about double that for business.

The values for improvements to discolouration and taste & smell are very similar once the scale of the improvements is accounted for. Businesses value these improvements more highly than households. Households value more highly avoiding increases in these service risks, while avoiding more taste & smell issues is valued more highly by both (again once the scale of the service change is accounted for).

Households place a higher value on reducing water hardness, which is consistent with the improvement priorities highlighted earlier. The magnitude of the willingness to pay value (e.g. 5% for households) appears high, but of course this is to provide soft water to *all* customers (over 560,000 properties served).



## availability and environment

Both households and businesses said environmental impact was higher priority than the frequency of water use restrictions.

Avoiding reductions in the current service is valued more highly than improving upon current service.

Businesses placed more value on reducing water use restrictions than households.

Businesses placed more value on reducing pollution incidents and low flows than households.

In this section we present the findings on how household and business customers valued changes in the availability of water and the environmental impact of South Staffs Water.

These service aspects were measured by:

- **Hosepipe bans** - in dry periods these can be required to restrict certain uses of water (e.g. garden watering with hosepipes) for household customers only. Currently there is a 2.5% chance of a hosepipe ban (1 in every 40 years).
- **Non-essential use ban** - This is a more extensive restriction that also applies to business customers. Currently there is a 1.5% chance of this occurring (about 1 in every 60 years)
- **Minor Pollution incidents** - Unplanned discharges from South Staffs works can cause minor pollutions. Currently this happens 1 in every 10 years (10% chance)
- **Low Flows** - Currently 31 miles of river length (9%) experience low water levels and flows.

| Service Measure     | Units                       | Change in Service Level |              |                |                |
|---------------------|-----------------------------|-------------------------|--------------|----------------|----------------|
|                     |                             | Reduction -2            | Reduction -1 | Improvement +1 | Improvement +2 |
| Hosepipe ban        | % change in likelihood      | 2.5                     | 0.8          | -1.5           | -2.5           |
|                     | Annual % WTP per household  | -8                      | -3           | 1.3            | 2.1            |
|                     | Annual % WTP per business   |                         |              |                |                |
| Non-essential use   | % change in likelihood      | 1.8                     | 1.0          | -0.5           | -1.5           |
|                     | Annual % WTP per household  |                         |              |                |                |
|                     | Annual % WTP per business   | -9                      | -5           | 1.0            | 3.1            |
| Pollution Incidents | % change in likelihood      | 10.0                    | 4.0          | -3.0           | -5.0           |
|                     | Annual % WTP per household  | -37                     | -15          | 2.1            | 3.5            |
|                     | Annual % WTP per business   | -30                     | -12          | 3.4            | 5.6            |
| Low Flows Rivers    | % change in length affected | N/a                     | N/a          | -3             | -9             |
|                     | Annual % WTP per household  |                         |              | 0.9            | 2.7            |
|                     | Annual % WTP per business   |                         |              | 1.3            | 4.0            |

Note: Bold indicates estimate is statistically significant at the 95% level

The table above presents the estimated willingness to pay values for each measure presented in the availability and environment choice block. Values are shown for each alternative service level presented in the survey. We have also presented both household and business estimates in % (of bill) terms to allow the household and business values to be directly comparable.

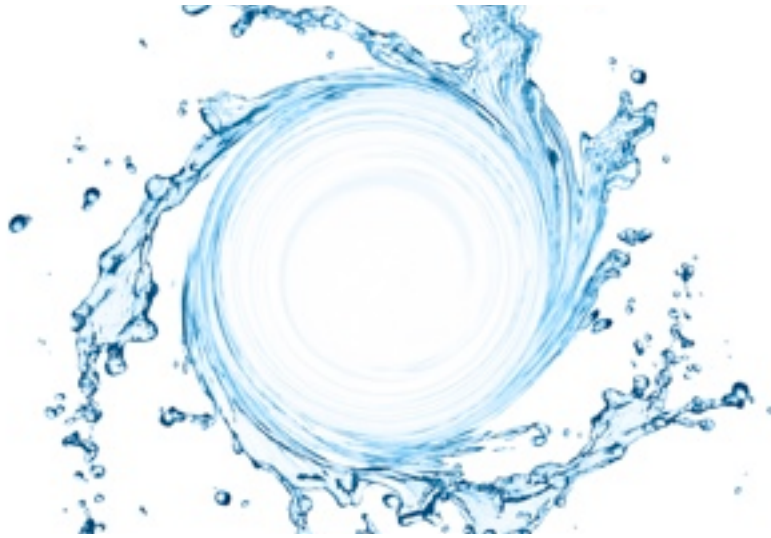
We can observe a similar pattern to that for the drinking water block. The willingness to pay for improvements is lower than the values associated with reductions in the service offered (in the cases of restrictions on water use and pollution incidents).

Therefore we can again say that customers attach more value to avoiding these risks getting worse in the future compared to reducing the current risks. As before the service changes for each measure do differ so this needs to be borne in mind when comparing across service measures.

Hosepipe bans were presented to household respondents, while business customers saw choices with non-essential use bans. Allowing for the differences in the service levels, the business valuation of water use restrictions appears higher than household valuations. This aligns with the earlier evidence on service priorities.

Both households and business customers place a high value on avoiding or reducing pollution incidents. Business customers value more highly reducing the current chance of incidents, while households value more highly avoiding increases in the chance of pollution incidents.

For low flows in rivers only improvements in service were offered. This is consistent with the no deterioration requirement of the EU Water Framework Directive which is monitored in England & Wales by the Environment Agency. Both households and business customers place value on reducing the % of river length affected by low flows, with businesses on average valuing this aspect of service more than households.



## reliability of supply

Avoiding reductions in the current reliability of supply service is again valued more highly than improving upon current service levels.

Reducing the flooding of properties has greater benefit than reducing unexpected interruptions of 3-6 hours.

Businesses placed more value on reducing still further South Staff's leakage compared to households. This aligns with the evidence on priorities for improvement.

In this section we present the findings on how household and business customers valued changes in the reliability of the supplies provided by the network of pipes operated by South Staffs Water.

This aspect of service was measured by:

- **Low water pressure** - Currently zero properties experience low water pressure (as defined in regulations). Therefore, the only alternatives included for this measure are reductions in service.
- **Unexpected supply interruptions** - This was measured as interruptions lasting between 3 to 6 hours. Currently this is experienced on average by 2,660 properties per year (4.7 every 1,000 properties).
- **Internal Water Flooding** - Currently 50 properties per year (0.1 every 1,000) experience flooding from burst water mains.
- **Leakage** - This is measured as water lost from the South Staffs network of pipes. Current losses equate to the volume of water supplied to 69,000 properties (12%).



| Service Measure | Units                      | Change in Service Level |              |                |                |
|-----------------|----------------------------|-------------------------|--------------|----------------|----------------|
|                 |                            | Reduction -2            | Reduction -1 | Improvement +1 | Improvement +2 |
| Low Pressure    | <b>Properties affected</b> | <b>2,000</b>            | <b>1,000</b> | <i>N/a</i>     | <i>N/a</i>     |
|                 | Annual % WTP per household | -45                     | -23          |                |                |
|                 | Annual % WTP per business  | -24                     | -12          |                |                |
| Interruptions   | <b>Properties affected</b> | <b>2,040</b>            | <b>1,040</b> | <b>-660</b>    | <b>-1,160</b>  |
|                 | Annual % WTP per household | -29                     | -15          | 1.4            | 2.5            |
|                 | Annual % WTP per business  | -24                     | -12          | 2.3            | 4.0            |
| Flooding        | <b>Properties affected</b> | <b>200</b>              | <b>50</b>    | <b>-25</b>     | <b>-45</b>     |
|                 | Annual % WTP per household | -55                     | -14          | 1.1            | 1.9            |
|                 | Annual % WTP per business  | -32                     | -8           | 1.3            | 2.4            |
| Leakage         |                            | <i>N/a</i>              | <i>N/a</i>   | <b>-5,000</b>  | <b>-10,000</b> |
|                 | Annual % WTP per household |                         |              | 1.6            | 3.2            |
|                 | Annual % WTP per business  |                         |              | 2.8            | 5.6            |

Note: Bold indicates estimate is statistically significant at the 95% level

The table above presents the estimated willingness to pay values for each measure presented in the reliability of supply block. Values are shown for each alternative service level presented in the survey. We have again presented both household and business estimates in % (of bill) terms to allow the household and business values to be directly comparable.

Consistent with the other choice blocks we observed significantly higher value attached to service reductions compared to service improvements. This reiterates that both household and business customers attach greater benefit to avoiding reductions in current service levels and notably less benefit to increases in current service levels. This is highly consistent with the earlier headline finding that the vast majority of respondents preferred stable or improving service levels over worsening service levels.

Households value more highly avoiding any increase in low pressure problems than business customers.

Business customers, however, value more highly reductions in properties affected by supply interruptions. Increases in these risks (worsening service) were broadly similar in value to households and businesses.

Allowing for differences in the scale of the service changes, flooding from mains was valued more highly than interruptions by both households and businesses. This difference is even more significant when comparing reductions in service for these measures.

South Staffs considers its current leakage level to be around the economic level. Both household and businesses attach value to further reductions in leakage. These values can be used to assess whether there is a case for going beyond the current leakage control activity at South Staffs Water.

| Service Attribute | Units               | Change in Service Level |               |
|-------------------|---------------------|-------------------------|---------------|
|                   |                     | Reduction £             | Improvement £ |
| Boil Water Notice | 1 property affected | 10,320                  | 1,915         |
| Discoloured water | 1 property affected | 13,490                  | 2,290         |
| Taste and smell   | 1 property affected | 17,610                  | 2,400         |
| Hard water        | 1 property affected |                         | 8             |
| Low Pressure      | 1 property affected | 20,260                  |               |
| Interruption      | 1 property affected | 13,830                  | 2,440         |
| Flooding          | 1 property affected | 249,970                 | 44,680        |

|                       |                          | Reduction £000s | Improvement £000s |
|-----------------------|--------------------------|-----------------|-------------------|
| Hosepipe ban          | 1% change in likelihood  | 2,447           | 659               |
| Non-essential use ban | 1% change in likelihood  | 1,072           | 455               |
| Pollution incident    | 1% change in likelihood  | 3,516           | 789               |
| Low flows in rivers   | 1% change                |                 | 325               |
| Leakage               | 1000 properties supplied |                 | 376               |

The chart across summaries the benefit values that can be derived from the household and business customer willingness to pay values.

The values are derived by aggregating the average willingness to pay values across all household and business customers.

For improvements these values represent the maximum benefit (in monetary terms) of improving service by one unit. These values represent the maximum price customers would pay to receive an additional unit of service.

For reductions these values represent the minimum benefit value that is lost to customers if service is reduced by one unit. These values can also be thought of as the minimum amount of compensation customers would require to accept a unit of foregone service.

Consistent with the willingness to pay evidence we see significantly higher benefit values for service reductions compared to service improvements.

## using the values

South Staffs Water can make choices about how to prioritise investment in line with the benefit value to customers. If the cost of an investment is less than this benefit value then it will be worth doing.

Take water hardness as illustration. Providing soft water to 1 property is valued at £8 (per year). Summed across all properties this equates to £4.4 million.

Suppose the investment required to achieve soft water at all properties is £100 million. Expressed as an annual cost this is £6.3 million (over 30 years).

Hence, annual benefit < annual cost. It is not worth providing soft water to all properties. The value to customers would not support doing this project.



## checking validity

Experience shows that packages of service changes are valued differently to the independent valuations. Typically a package of service changes attracts a lower valuation.

We find evidence of lower package valuations. For households, willingness to pay for a maximum improvement in all services is £9.80 (per year). This is 28% of the independent valuations added together.

For businesses this package valuation is 5.1% (on current bills). This is 84% lower than the independent valuations.

This evidence can be used to constrain the scale of the overall service changes and bill impacts that are being considered by South Staffs Water.

It is important to recognise that the choices presented to survey respondents and the values derived from those choices are not based on real market situations.

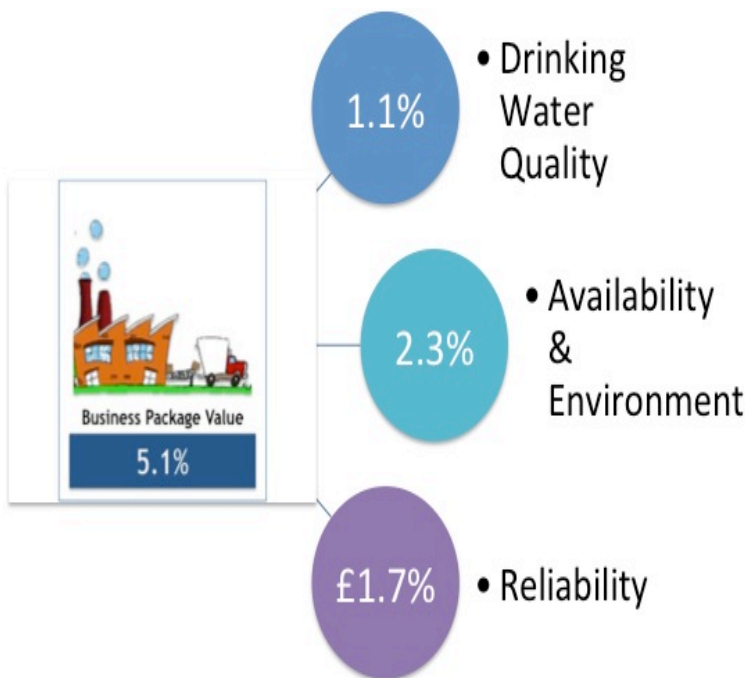
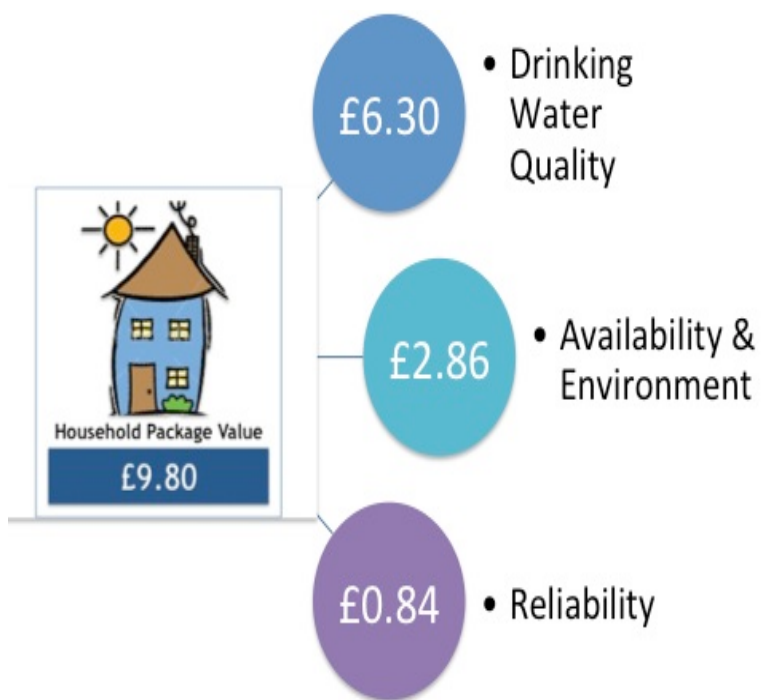
Such markets do not exist for water services. This is why the stated preference techniques used in this study are employed in the first place.

This makes it important, nevertheless, to understand the validity of the benefit values so that they may be used appropriately.

One important validity check is whether customers would value a package of service changes that are bundled together differently to the same service changes valued individually.

Experience shows that people do value packages differently and usually a package of service changes will attract a lower value than the sum of the individual values.

Take the familiar example of a decision to purchase a new car. Any new car purchase involves deciding about a package of attributes that may offer value to a customer.



Suppose a new car comes with the options of metallic paint, in car DAB radio and leather upholstery. Without these options the additional cost is zero. Individually the customer is prepared to pay up to £500 for each option. Together the total would be £1,500.

But the customer may not wish to forgo £1,500 in total as this reduces by too much the money available to spend on other things. Their limit for extras may be £900, which means they might limit themselves to one extra or even none at all.

We tested for these package effects with our household and business respondents by asking them further choice questions involving a maximum improvement in all service areas or by grouping. The headline results are shown in the charts across.

In both cases we found significant package effects. The household value of £9.80 for a maximum improvement was 28% of the summed individual valuation (£34.80). For businesses the package value of 5.1% was 16% of the summed individual valuations.

The charts also show how the packages values break down by grouping. For households this was weighted towards drinking water quality (£6.30 = 64%) with reliability lowest (£0.84 = 9%). Businesses were more even with their package valuations.

These package values can be used to constrain the overall scale of spending by South Staffs Water to within the limits of overall willingness to pay.

# Survey Methodology

## SAMPLE & SURVEY DESIGN

The surveys were conducted by the market research agency FACTS International and household and business customer samples were designed to be representative of the South Staffs customer base.

### Households

Random sampling was used and the resulting customer samples are compared against available population statistics, based on Census data for the South Staffs Water region based on the local authorities covered.

Sample quotas were set on the basis of Age, Gender and Socio-Economic Grouping (SEG). In general the sample is in line with the population statistics and the results can be considered representative.

53% of sampled households were female bill payers compared to 51% in the population. 27% of sampled households were SEG A/B compared to 30% in the population. 34% of sampled households were SEG D/E compared to 38% in the population.

### Business

As with the domestic survey, random sampling was used for the business customer survey. The resulting sample was compared against available population statistics for the South Staffs Water business customer base.

The business sample was stratified by economic sector and size of bill.

## VALUATION METHODS

The survey uses two methods for estimating customer willingness to pay.

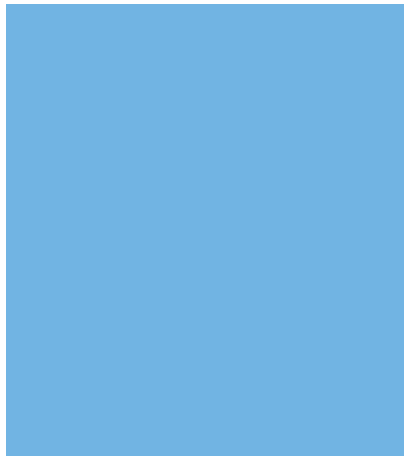
### Choice Experiments

In choice experiments survey respondents are asked to choose their preferred option from a set of three options. These options comprise a level of service for each service measure and a price (expressed as a change in the water bill). One of the options is a no change option - i.e.. the current situation, while the two other options are hypothetical combinations of service and price. It is assumed that respondents will choose the combination of service and price that generates for them the most benefit. By varying the combinations of price, the choices made across a sample of respondents helps to reveal the importance or weight that respondent attach to each aspect of service and price. This method provides independent valuations for each service measure.

### Contingent Valuation

This method is used to estimate the monetary value that respondents would put on a *simultaneous* improvement scenario across all service measures. This allows for the estimation of 'package' effects and can be used to test the validity of the independent valuations derived from choice experiments





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