Chapter C1

Consumers' Views

1. Overview

We have included in this chapter details on:

- The views held by our consumers, both through the results of our tracking research and our Willingness to Pay (WTP) survey.
- The consultation activities we have undertaken with our stakeholders.
- How the results of our consultation have helped to shape our business plan for the period 2010-15.
- How we have listened to our stakeholders

We have provided information on the work we have done to understand what our consumers want, what they are prepared to pay for, their ability to pay for our services, and how this links through to our strategy for the period 2010-15.

Customers and the environment are at the centre of our plan. We have taken into account customer views through market research, including a major willingness to pay survey carried out in 2007. This established the value which customers put on improvements in the different areas of service provision and we have used this in our BRITE Investment Manager which balances costs and benefits to produce the best overall plan.

Our tracking survey shows that our customers' perception of us, which had been stable, worsened in July 2006. This coincided with adverse media coverage which we received, linked to over charging and Ofwat investigations, and the wider industry issue of water shortages. The issues surrounding the loss of water supply in Gloucestershire in July 2007 do not appear to have impacted the ratings to any great extent, we maintain favourable perceptions amongst customers for our core services of delivering high quality tap water, and sewage treatment. Additionally customers' overall satisfaction with the services we provide has remained high, yet again averaging above the 'satisfied' level.

This chapter contains the following sections:

2. Consultation with stakeholders
3. Cost-benefit analysis – assessing customer willingness to pay
4. Evaluation of stakeholder response to the Draft Business Plan
5. CCWater customer research on the impact of Gloucester flooding
6. Our customer tracking research
7. Research on acceptability of drinking water
8. Customer complaints
9. Conclusions

2. Consultation with our stakeholders

We maintain regular contact with our Regulators and their views, alongside those of our other stakeholders, are recognised in our plans for 2010-15. Throughout 2008 we proactively communicated with our Regulators and stakeholders in meetings, workshops and via extensive information contained on our Severn Trent Water website. For PR09, we have valued the Quadripartite meeting process, led by CCWater, which began in summer 2007. Through the quadripartite process, CCWater, the Drinking Water Inspectorate, the Environment Agency, Natural England and Severn Trent Water meet quarterly to discuss PR09 issues. These meetings have been particularly useful due to the open discussions of key issues, such as metering, quality investment and affordability. In addition, we have been able to present and discuss our willingness to pay research, cost benefit analysis methodology, BRITE investment manager and the optimisation process for investment and the key proposals in both our DBP and FBP.

In July 2008 we also published the first in a series of PR09 newsletters, informing stakeholders about our Draft Business Plan (DBP) and seeking their important views. Issue 2 of the newsletter was published in December 2008 and this set out the feedback we received on our DBP. The below table shows some examples of their key concerns and issues, and how we have responded to them. The table also shows the frequency of interaction with our Regulators and stakeholders.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Customers – National Deliberative Research (June 2008)	Resistance to paying higher bills. Strongest support for reducing leakage and maintaining water quality.	We are proposing a balanced programme of improvements, with broadly stable prices. Our DBP is based on achieving an economic level of leakage – we recognise that this may not fully meet all stakeholder expectations.	Acceptability of DBP was high. Unacceptability was generally linked to water being too expensive already or improvements not worth the money	Our FBP reviews the path and level of prices over the five-year period. It aims to show us moving towards the lowest level of water charges across water companies.	Research undertaken to support development of these reports.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Customer Research – STW Willingness to Pay Survey	Customers support a wide range of improvements. Top priorities are interruptions and water quality. Lowest priorities include metering and river quality improvements.	The results of this survey have been used to determine the programme of improvements included within the DBP. The DBP also includes mandatory improvements not supported by customer priorities.	Customers support the DBP in terms of bill increases and the emphasis of the DBP as it impacts on them. Top priority was improving the resilience of the network. Too much was being spent on river quality improvements.	The results of this survey have been used to determine the programme of improvements included within the FBP. The FBP includes a reduced number of mandatory improvements not supported by customer priorities following proactive challenge with the EA.	Face to face survey in 2007 and 2008 over a number of phases

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Ofwat	All improvements must be justified using cost benefit analysis and grounded in consumer priorities. "Companies must provide safe and reliable water services" ('Ofwat's strategy: taking a forward look' April 2008)	These requirements are integral to both the Strategic Direction Statement (SDS) and (DBP)	Companies should clearly explain how cost of capital links to the approach to risks underpinning operating and capital cost estimates and proposals on the risk mitigating mechanisms, including notified items. "The impact of climate change remains a topic of concern, including increased weather volatility and the carbon impacts of the sector. At the same time the economic climate is turbulent, and value for money and meeting consumers' needs remain core objectives" ('Setting price limits for 2010-15: Overview of companies' draft business plans' October 2008) "The view we set out here [the 'draft baseline'] includes a significant challenge to the costs companies have forecast on efficiency and on other grounds. This will prompt them to review and revise their costs estimates in their final business plans." ('Capital expenditure for 2010-15: Ofwat's view on companies' draft business plans' December 2008)	Our Final Business Plan (FBP) includes a detailed assessment of risks and the impact on cost of capital assumptions. We have put forward a balanced plan on service improvements including increased resilience of our assets whilst keeping price increases at a low level. Our FBP includes revisions to costs and necessary levels of spend.	Formal meetings as set out in Ofwat's 2009 price review programme. Ad-hoc meetings as required on issues including sewer flooding, pricing, competition in the water and sewerage industries. Responses to consultations including the review of competition in the water and sewerage industries (Part I and II), accounting separation.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Defra	Issues included in "Future Water" (February 2008): "We emphasise the importance of ensuring that water companies carry out essential works to ensure resilience against natural hazards and the predicted effects of climate change" "We must continue to manage demand, especially through increased water efficiency and reduced water wastage" "It is essential that good quality drinking water, and the investment by companies necessary to achieve it, is maintained into the future"	Our DBP includes a significant programme to increase resilience and to reduce risk of water quality failures. Our programme to balance supply and demand includes leakage reduction and management of demand through increased metering and water efficiency measures. Our plan includes provision for higher maintenance to replace post-privatisation assets which are now approaching the end of their lives.	Issues included in "Statutory Social and Environmental Guidance to Ofwat" (August 2008): "Protecting and supporting vulnerable groups remains a key Government priority" "The Government expects companies to continue to reduce their energy usage and to find new ways of minimising the impact that future demand and regulations could have on energy use" "…when considering the need for new supply measures, companies would be expected to provide sufficient analysis of the costs and benefits of additional demand management measures"	Our FBP updates our approach to protecting vulnerable customers. Our FBP sets out our aim to use 30% of self-generated renewable energy by December 2012. Our FBP is based on economic appraisals of costs and benefits	Ad-hoc meetings on competition, vulnerable customers, etc. Regulatory submissions including the Strategic Direction Statement, Draft Water Resources Management Plan. Responses to consultations including the appraisal for flood and coastal erosion risk management, financial arrangements for self-lay and requisitioning agreements. Response to the Walker Review: call for evidence.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Environment Agency (EA)	There is a need to achieve good chemical and ecological status for rivers to meet the Water Framework Directive. Water resources – metering, leakage and water efficiency should be pursued ahead of new resource development The EA wishes to see a zero target for pollutions "The EA have also identified the need for key utilities to put better protection of critical infrastructure higher on their list of priorities in the face of climate change" (Paul Leinster, EA)	Our DBP takes affordability into account and links improvements to customer priorities. We support further sewage treatment changes if justified by the benefits to river quality relative to costs. Our DBP includes a balanced programme between demand management and capacity increases based on cost-benefit analysis.	60% of NEP schemes presented as not being cost beneficial and validity of willingness to pay queried along with benefit expressed in river lengths. Water resources – Leakage rise and fall over 25-year WRMP, low meter penetration at 66%, water efficiency improvement implementation does not fully account for Government and EA objectives and policies. Clarify work on flood resilience and risk. Clarify method for tackling intermittent discharges causing pollution complaints.	Application of cost benefit analysis is clarified in the FBP. Length of river remains as the most meaningful way of defining improvement. Our FBP includes maintaining the required target headroom over the 25-year planning period once the leakage target level has been achieved. Our meter penetration level is appropriate given we are not in a water stressed area. Our improvements are also in line with Government and EA objectives. . Our FBP includes our commitment to work with the EA on Surface Water Management Plans. In addition to our on-going work on drainage area planning, we have investigated the list of overflows identified as potential unsatisfactory intermittent discharges (UIDs) for PR09 and the FBP reflects this.	Quarterly Quadripartite meetings. Monthly regulatory meetings. Responses to consultations.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Drinking Water Inspectorate (DWI)	Standards must be met 100% of the time – there needs to be a reduction in the level of risk.	We have included a significant programme to reduce risk of water quality failures.	Many companies propose a significant increase in maintenance expenditure for Security and Emergency Direction measures, acceleration of meter installation, energy costs, water resource planning and improved flood resilience. Provision made for specific capital and operational expenditure for routine water supply asset maintenance is difficult to establish. Confirmation required that provision proposed is sufficient for sustainable long-term risk-based approach to water supply management.	We have put forward a balanced plan which includes our metering strategy and increased resilience of our assets whilst reflecting the price impacts of falling energy costs. We have followed the Common Framework for Maintenance Planning and have identified what we believe is the appropriate level of maintenance investment to maintain service, which is more than we have spent historically.	Bi-annual liaison meetings. Quarterly Quadripartite meetings. Ad-hoc meetings as required on PR09, lead etc.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Consumer Council for Water (CCW)	Affordability (rising levels of water poverty). Internal sewer flooding is unacceptable in the 21st Century. "The number one priority for customers is that they have a safe, uninterrupted supply of water" (Sir James Perowne, CCWater) "Customers expect their water quality to be of a high standard consistently" (CCWater Wales)	Our DBP reflects our strategic intent for broadly stable bills (in real terms). Our programme includes action to deal with sewer flooding. We have included investment to reduce interruptions to supply and for maintaining a high standard of water quality.	Real terms reduction in bills at start of period followed by a relatively large real terms increase. Mains renewal at 0.63% per annum (1300km of mains) around half the level in 2005-10. Overall number of properties that remain at risk of internal sewer flooding by the end of 2015. Estimated water shortfall by 2015, despite proposals to improve water efficiency.	Our FBP reviews the path and level of prices over the five-year period. Based on an improved investment model, the FBP recommends 2,100km of mains renewal (a 40% increase on the DBP). Since the DBP we have been working with Ofwat on the 'risk register' position and have reviewed our plans for the FBP. Our FBP includes our plan to remove any headroom deficit by the end of AMP5 and maintain the required target headroom over the 25-year planning period. The water efficiency proposals in our FBP will deliver water savings of 15Ml/d by 2015.	Quarterly Quadripartite meetings. Quarterly at public meetings. Ad-hoc meetings on specific issues such as financeability, resilience and sewer flooding.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Natural England	Biodiversity Catchment protection and sustainable development	We will continue to support biodiversity via our public access sites and will work with Natural England on catchment protection projects.	Contribution to the natural environment and delivery of objectives for biodiversity, landscape, recreation and access undervalued. Clarify use of environmental benefits and overall cost benefit analysis (CBA) results. Water efficiency and demand management measures and limited metering campaign. Explain protection of sites designated for Habitats Directive, SSSI and BAP; address rising per capita consumption; and better collaboration on neighbouring resources. Clarify catchment management proposals by issues, actions and timeframes.	Our FBP sets out our contribution to the natural environment in Chapter B4 and clarifies the information on CBA including environmental benefits. Our leakage and metering strategy is based on an economic appraisal of costs and benefits. Chapter B4 of the FBP includes our plans for Habitats Directive, SSSI projects. There are no identified BAP issues in the NEP for AMP5.. Our FBP includes our proposals for catchment investigations (forming part of the EA's PR09 NEP) and catchment management trials.	Quarterly Quadripartite meetings. Ad-hoc meetings on specific issues such as the SDS. Communication through PR09 newsletters. November 2008 joint regional workshop.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Welsh Assembly Government			Interested in our proposals for metering, climate change, water quality, affordability, sewer flooding and SuDS.	The FBP sets out a balanced approach for metering, climate change, water quality, affordability, sewer flooding and SuDS.	Communication through PR09 newsletters. Ad-hoc meetings on the DBP and pre-FBP.

	Pre-Draft Business Plan		Post-Draft Business Plan		Contact frequency
Stakeholder	**Key Concerns**	**Our Response**	**Key Items**	**Our Response**	
Investors and Analysts	Investors need returns commensurate with the level of risk – the perception is that risk is higher than at PR04.	We have set a cost of capital which is lower than at PR04 but which we believe will allow us to maintain a strong credit rating.	Economic conditions have deteriorated significantly since the DBP was submitted. Investor perception remains that risk is higher than at PR04. Areas highlighted include: - WACC - The impact of sustained deflation (negative inflation) - Bad debts - Pension deficit	We have reviewed the cost of capital for the FBP in the light of recent economic developments and have included proposals for price adjustments in the event that deflation continues.	Regular meetings with City investors and consultation with our top 20 active investors in preparing our report on the cost of capital Cost of capital paper entitled 'The world has turned: but which way?' circulated to more than 30 investors and analysts in August 2008. Paper updated in November 2008 with further releases scheduled. Ad-hoc presentations on cost of capital and wider PR09 issues.

3. Cost-benefit analysis – assessing customer willingness to pay

3.1 Our approach

Customer priorities are central to the development of our plans. Therefore customer willingness to pay (WTP) for improvements is the main basis for assessing the benefits of potential improvements. However, we have supplemented our survey of willingness to pay by additional analysis, in order to:

- cover those issues not incorporated within our willingness to pay survey.
- provide more detailed assessment based on characteristics of individual projects than could be derived from a customer survey.

Not all issues could be incorporated within the WTP survey because:

- The number of aspects of service included in the survey had to be limited in order to give a manageable number for putting questions to customers.
- Some issues could not readily be expressed in a way which would be meaningful to customers in the survey.

Details of how we have supplemented our WTP survey are set out in C8. The WTP survey is set out below.

3.2 Willingness to pay survey

3.2.1 The research

Our WTP survey involved face-to-face interviews with business and domestic customers to establish their priorities and their willingness to pay for improvements in the different areas of service provision. This was to enable the whole of our future programme to be optimised based on an analysis of costs and benefits, with customer willingness to pay forming a major part of the assessment of benefits.

The research was carried out by Accent and RAND Europe and took place over 4 phases:

1. Identification of service levels and their attributes.
2. Qualitative customer research to identify broad customer priorities over different service attributes and to obtain a broad understanding of customer preference.
3. Quantitative research to robustly determine customer priorities and to value monetary benefits of service using stated preference choice experiments - results from a total of 443 business customers and 991 residential customers were analysed.
4. Analysis of the results by RAND.

The results are set out in the following reports, completed in October 2007:

Severn Trent Water Customer Priorities Research – Modelling report, RAND Europe

Customer Priorities and Willingness to Pay Research – Final Report, Accent

3.2.2 The methodology

Phase 1 involved individuals from across the business and other stakeholders and identified the services shown in the table below for inclusion in the research. These service levels were then discussed within focus groups in phase 2 to establish customer priority areas and to ensure that our customers understood what we were asking them. For the quantitative research in phase 3 each area of service had an associated current level of performance, at

least one improved level of service and in some cases a deterioration in the level of service, as shown in the table below:

	Attribute		Levels			
			Deterioration	Current	Improvement	
					1	2
1	Hosepipe ban frequency	1 in x years	1 in 10 years	1 in 33 years	1 in 100 years	N/A
2	Sewer flooding – properties flooding p.a.	Internal	1,000	740	450	150
3		External	4,000	3,500	2,500	1,600
4	Leakage	litres/day	N/A	160	140	110
5	Interruptions	no. of properties	N/A	11,500	7,500	3,500
6	Change to river ecology due to pollution	% of river unable to sustain wildlife	N/A	43%	30%	20%
7	Customer contact	success rate in getting through	66%	90%	95%	98%
8	Metering	% of customers metered	N/A	33%	50%	66%
9	Low pressure	no. of properties	15,000	10,000	5,000	2,000
10	Discoloured water	no. of complaints	5,000	3,000	1,500	1,000
11	Odour and flies	no. of complaints	N/A	4,500	2,000	1,000
12	Taste and smell	% of customers	N/A	10%	7%	5%
13	Energy conservation	no. of households	N/A	40,000	70,000	100,000
14	Hardness	% of customers	N/A	12%	9%	8%
15	Low flow rivers	% of river unable to sustain wildlife due to low flows	N/A	16%	10%	5%
16	Supply pipe adoption		N/A	Repairs paid for by us	All repairs and replacements paid for by us	N/A

In order to obtain a balanced view from customers, the sample was split across the nine counties which we serve. Each county was then segmented, using 2001 Census data, according to socio-economic group, age and gender so that it was representative of our domestic customer base. The business interviews were also spread across the nine counties and segmented according to business sector and bill size so that it was broadly representative of our business customer base, although a decision was taken to focus on larger customers. The final results were scaled down to reflect the fact that average bills of the sample were higher than for our customer base as a whole.

A stated preference (SP) approach was adopted. In a SP discrete choice experiment, hypothetical choice situations - where each alternative is described by a set of attributes (taste of water, hardness, etc.) - are presented to each individual. Each of the attributes in the experiment is described by a number of levels. The attribute levels are combined using principles of experimental design to define different service packages, which respondents evaluate by choosing one of the packages, dependent upon the levels offered and their own personal preferences. Of key interest for this study were the trade-offs that customers are prepared to make when comparing increases in service attributes with increases in bill size.

This gives a measure of Willingness to Pay, which provides a quantification of the customer benefits to feed into a cost-benefit analysis.

Sixteen attributes are too many to evaluate in detail in a single exercise, alongside cost. So the attributes were divided into four thematic blocks, evaluated in four separate exercises.

Division of attributes into blocks for choice experiments

Experiment 1	Experiment 2	Experiment 3	Experiment 4
Customer contact	Leakage	Discoloured water	Change to river ecology due to pollution
Sewer flooding - internal	Interruptions to supply	Drinking water taste and smell	Low flow rivers due to abstraction
Sewer flooding - external	Low water pressure	Hardness	Renewable electricity generated
Metering	Hosepipe ban frequency	Odour & flies	Supply pipe adoption
Cost	Cost	Cost	Cost

Cost levels were specified as absolute changes in the annual bill for domestic customers (from -£10 to +£40) and percentage changes in the bill for businesses. The percentage adjustments varied from 2% reductions to 10% increases.

An example of the choices from the first experiment is shown below:

	As Now	Alternative 1	Alternative 2
Customer contact			
Number of calls where customer manages to get through	66 times in 100 calls	66 times in 100 calls	90 times in 100 calls
Sewer flooding - internal			
Number of properties experiencing internal sewer flooding per year	740 out of 3.7 million	150 out of 3.7 million	1,000 out of 3.7 million
Sewer flooding - external			
Number of properties experiencing external sewer flooding per year	3,500 out of 3.7 million	4,000 out of 3.7 million	4,000 out of 3.7 million
Metering			
Proportion of customers on a metered supply	33% on meters	60% on meters	60% on meters
Cost			
Change to annual water bill before inflation	No change	Increase by £10 per year	No change
Choice (mark "X" in preferred option)	☐	☐	☒

The data from the first four experiments allows estimation, through statistical analysis, of the willingness to pay for improvements in each of the service attributes. However, it is possible that the estimation of willingness to pay using subsets of the attributes leads to an overstatement of the total willingness to pay for all of the improvements. A fifth experiment was included in the study which included all sixteen service attributes (and cost) in a single experiment.

Our market researchers advised that it would be too difficult for respondents to examine all sixteen attributes individually, so the exercise was simplified to present the attributes as their four constituent blocks and presenting the attributes within each of these blocks at their best or worst level (all attributes in that block being at the best or worst level simultaneously). The results from this fifth experiment showed lower willingness to pay, and were used to scale down the results of the first four experiments.

3.2.3 Results of WTP research

The results from the willingness to pay survey were used to produce an aggregate willingness to pay for our area as a whole. Average willingness to pay from the survey was scaled down to reflect the fact that the average bill of customers in the survey was higher than our overall average bill:

- For domestic customers, the average bill was £298 in the survey compared with £263 overall average bill.
- For non-household customers, the average bill was £25,566 in the survey compared with an overall average bill of £2,843 (a large difference as we deliberately targeted larger customers, though the customers surveyed were representative in terms of industrial sectors sampled).

Aggregate willingness to pay was calculated as follows:

Aggregate willingness to pay for domestic customers =

Average survey WTP x (average STW domestic bill / average survey domestic bill) x number of domestic customers

The same calculation was carried out for non-household customers, using the average non-household bill in the survey relative to the overall average non-household bill. The number of customers used for grossing up the survey results is shown in the table below.

Number of customers (000s)

	Household	Non-household	Total
Water	197	3,048	3,245
Sewerage	218	3,467	3,685

The table below shows willingness to pay for a change in the level of service (or accept compensation for a deterioration):

- An average business customer – e.g. an average business customer would pay an extra £7.26p per year to reduce supply interruptions from 11,500 per year to 3,500 per year.
- Average domestic customers – e.g. willingness to pay for reducing leakage from 160 litres per property per day (lpd) to 140 lpd is, on average, £1.19 per year.
- An overall willingness to pay for all customers – e.g. the 3.7 million customers in the Severn Trent area would pay £3.9m per year to reduce hosepipe ban frequency from 1 in 33 years to 1 in 100 years.

These willingness to pay results were used in our optimisation modelling, which is described in Chapter C8. For example, for a project to improve resilience of a water treatment works against flooding, the benefits of the project were assessed in terms of:

- Probability of water supply interruption before and after the scheme.
- Numbers of customers affected.

This gives an average number of customers affected by interruptions per year, which is multiplied by the willingness to pay to give a total benefit from the scheme. The net present value of the benefits was then compared with the net present value of costs (including the cost of carbon) to determine whether there were net benefits from the project.

The analysis allowed for the possibility that WTP changes as the level of improvement changes. In some cases, the WTP does change. For example:

- The WTP to reduce internal sewer flooding is £20,200 to reduce flooding by one incident when there are between 1,000 and 450 incidents per year.
- The WTP to reduce flooding is £9,790 to reduce flooding by one incident when there are less than 450 incidents per year.

Where WTP is negative, this represents the compensation customers would require to accept a deterioration in service.

Results of willingness to pay survey

	Change in service level		**Per customer**		**Total**	Per unit of improvement			
	From	To	All Business	All residential	All customers (£'000)	Units	From	To	**Annual WTP (£'000)**
Customer contact – phone call success rate in getting through	90%	95%	£2.36	£0.31	1,407	1% improvement	90	95	281.39
	90%	98%	£3.75	£0.49	2,246	1% improvement	95	98	279.79
Internal flooding – number of incidents p.a.	740	1,000	-£3.93	-£1.27	-5,264	1 flooding incident	740	1,000	-20.25
	740	450	£4.42	£1.41	5,859	1 flooding incident	740	450	20.20
	740	150	£7.51	£2.06	8,796	1 flooding incident	450	150	9.79
External flooding – number of incidents p.a.	3,500	4,000	-£3.93	-£0.52	-2,663	1 flooding incident	3,500	4,000	-5.33
	3,500	2,500	£1.94	£1.03	4,002	1 flooding incident	3,500	2,500	4.00
	3,500	1,600	£3.69	£1.96	7,597	1 flooding incident	2,500	1,600	3.99
Metering - % of customers metered	33%	50%	£3.75	£0.17	830	1,000 meters	1,006	1,524	1.60
	33%	66%	£7.20	£0.33	1,598	1,000 meters	1,524	2,012	1.57
Leakage – litres per property per day	160	140	£11.99	£1.19	5,995	1 Ml/d	519	454	92.37
	160	110	£19.86	£2.97	12,979	1 Ml/d	454	357	71.75
Interruptions – number per year	11,500	7,500	£7.26	£1.76	6,785	1 interruption	11,500	7,500	1.70
	11,500	3,500	£14.53	£3.51	13,570	1 interruption	7,500	3,500	1.70
Low pressure – number of customers at risk	10,000	15,000	-£8.17	-£1.38	-5,807	1 customer	10,000	15,000	-1.16
	10,000	5,000	£8.17	£1.38	5,807	1 customer	10,000	5,000	1.16
	10,000	2,000	£8.17	£2.21	8,336	1 customer	5,000	2,000	0.84
Hosepipe ban frequency (1 in 10/33/100 years)	1 in 33	1 in 100	£2.66	£1.11	3,914	Per 100 years	33	100	3,914
	1 in 10	1 in 33	£0.91	£0.38	1,336	Per 100 years	33	10	-1,336
Discoloured water – no of complaints p.a.	3,000	5,000	-£10.47	-£2.60	-9,999	1 complaint	3,000	5,000	5.00
	3,000	1,500	£7.81	£1.95	7,484	1 complaint	3,000	1,500	4.99
	3,000	1,000	£10.41	£2.59	9,961	1 complaint	1,500	1,000	4.95
Taste - % of customers dissatisfied	10	7	£3.15	£1.83	6,188	1,000 dissatisfied	10	7	63.57
	10	5	£5.21	£1.83	6,594	1,000 dissatisfied	7	5	6.25
Hardness - % of customers dissatisfied	12	9	£5.51	£1.10	4,448	1,000 dissatisfied	12	9	45.69
	12	8	£7.32	£1.46	5,909	1,000 dissatisfied	9	8	45.02

	Change in service level		Per customer		Total	Per unit of improvement			
	From	To	All Business	All residential	All customers (£'000)	Units	From	To	Annual WTP (£'000)
Treatment works odour – no of complaints	4500	2000	£7.99	£1.99	8,657	1 complaint	4,500	2,000	3.46
	4500	1000	£11.14	£2.79	12,097	1 complaint	2,000	1,000	3.44
River Ecology - % of rivers affected by discharges	43%	30%	£12.95	£2.31	10,842	1% good status	43	30	833.97
	43%	20%	£22.88	£4.09	19,157	1% good status	30	20	831.51
Low Flow Rivers - % of rivers affected	16%	10%	£14.77	£1.35	7,028	1% good status	16	10	1,171.32
	16%	5%	£14.77	£2.46	10,417	1% good status	10	5	677.77
Energy Generated – equivalent to no. of households' use	40,000	70,000	£6.60	£1.06	5,111	1 household's use	40,000	70,000	0.17
	40,000	100,000	£13.14	£2.13	10,239	1 household's use	70,000	100,000	0.17
Supply Pipe Adoption	Customer	Company	£19.86	£4.90	18,843	All adopted			18,843

3.2.4 Willingness to pay – low income groups

The willingness to pay survey results were produced for different income groups in order to be able to take account of affordability for those with the lowest incomes. The table below shows the results for the lowest two groups compared with the average. Where income was under £10,000, willingness to pay was generally between 80% and 100% of the average; for the £10,000 to £20,000 group willingness to pay was generally very close to the average.

Average willingness to pay per household (£ per year)

			Annual Household Income		
	From	To	under £10,000	£10,000 - £20,000	Weighted average
Contact – phone call success rate in getting through	90	95	£0.29	£0.31	£0.31
	90	98	£0.46	£0.50	£0.49
Flooding – internal incidents	740	450	£0.88	£0.94	£1.41
	740	150	£1.79	£1.92	£2.06
Flooding – external incidents	3500	2500	£0.96	£1.03	£1.03
	3500	1600	£1.82	£1.95	£1.96
Metering - % of customers metered (metered customers only)	33	50	£0.17	£0.19	£0.19
	33	60	£0.34	£0.36	£0.37
Leakage – litres per property per day	160	140	£1.02	£1.10	£1.35
	160	110	£2.55	£2.74	£3.37
Interruptions – number per year	11500	7500	£1.63	£1.75	£1.99
	11500	3500	£3.27	£3.51	£3.98
Low pressure – number of customers at risk	10000	5000	£1.29	£1.38	£1.56
	10000	2000	£2.06	£2.20	£2.50
Hosepipe ban frequency (1 in 33/100 years)	33	100	£1.04	£1.11	£1.26
Discoloured water – no of complaints p.a.	3000	1500	£2.06	£2.22	£2.21
	3000	1000	£2.75	£2.96	£2.94

			Annual Household Income		
	From	To	under £10,000	£10,000 - £20,000	Weighted average
Taste - % of customers dissatisfied	10	7	£1.70	£1.82	£2.07
	10	5	£1.70	£1.82	£2.07
Hardness - % of customers dissatisfied	12	9	£1.02	£1.10	£1.25
	12	8	£1.36	£1.46	£1.66
Treatment works odour – no of complaints	4500	2000	£1.85	£1.99	£2.26
	4500	1000	£2.59	£2.79	£3.16
River Ecology - % of rivers affected by discharges	43	30	£2.70	£2.90	£2.62
	43	20	£4.78	£5.14	£4.63
Low Flow Rivers - % of rivers affected	16	10	£0.97	£1.04	£1.53
	16	5	£1.77	£1.90	£2.79
Energy Generated – equivalent to no. of households' use	40000	70000	£0.99	£1.06	£1.20
	40000	100000	£1.98	£2.12	£2.41
Supply Pipe Adoption	Customer	Company	£2.91	£3.12	£5.55

We do not consider that there is any need to adjust our cost-benefit analysis results to allow for willingness to pay among lower income groups since:

- Willingness to pay was close in absolute terms to the average.
- Average bills are, on average, lower for low income groups (particularly for unmeasured customers where there is a clear association between rateable value and income), so for a given average increase they will pay slightly less.
- Our proposals keep bills as low as possible for AMP5.
- We have adjusted our programme to defer some schemes on affordability grounds, e.g. a major resilience scheme for Birmingham has been deferred to AMP6.
- Most of our programme is clearly cost-beneficial, so making a marginal adjustment for willingness to pay of low income groups would have little impact on the programme.
- The national post-DBP research suggested that our proposals are supported amongst low income groups (see Section 4.4 below).

3.2.5 Implications of willingness to pay results

The details of our application of the willingness to pay results in cost-benefit analysis are set out in Chapter C8 and the proposals to improve services are set out in Chapters B4 to B6. A summary of the results of comparing willingness to pay with the costs of improvements is shown below. This gives a high-level view but the analysis is carried out at a project level. Where significant improvements are not generally supported, because costs are less than benefits, some projects are included. For example, some external flooding projects are included where costs are low or the problem is particularly severe. Similarly, in areas where benefits exceed costs, some projects have been excluded as being not cost-beneficial.

All enhanced service projects are supported by cost-benefit analysis, with the exception of some resilience schemes to protect sewage treatment works from power loss. Our customers have no experience of the scale of pollution consequences that would result from complete loss of service at a large sewage treatment works upon which to value a willingness to pay for enhanced resilience. Also, we have no direct experience of the cost of managing such an incident upon which to value internally avoided costs. The Willingness to Pay and cost benefit process is therefore inherently difficult to apply in such circumstances. This difficulty is specifically recognised in the Pitt report [section 5 para 16.32].

Willingness to pay compared with costs of improvement

Significant improvements supported	Low pressure	Taste and odour
	Internal flooding	Sewage treatment works odour
	Interruptions	Discoloration
	Supply pipe ownership	Renewable energy
Improvements may be supported	Hosepipe bans	Water hardness
	Leakage	Customer contact
Significant improvements probably not supported	River quality	External flooding
	Low flow rivers	Metering

3.2.6 Peer review of methodology used for performing economic analysis

The peer review was carried out by Professor Ian Bateman, of the University of East Anglia. His conclusion was that:

"A number of reports and supporting documents pertaining to the above research are reviewed. The review finds that generally the research has been carried out well. There are, however, a substantial number of issues which require further review to ensure that values can be considered robust for wider cost-benefit application".

The key issues he raised, and our comments, are set out in the table below.
:

Professor Bateman's comments	Our view
I would have reservations about the use of customer valuation of leakage reduction without further valuation research – Severn Trent should consider pursuing this.	We have not used the results of the leakage valuation. The appropriate leakage level has been determined by a conventional Economic Level of Leakage approach, assessing the value of water saved, costs of leakage control, congestion costs of leakage control work, and the environmental impact of abstraction.
Business customer questions were put in terms of percentage increases in bills. It is unclear whether respondents would have been aware of the absolute amounts of money implied.	We have reviewed the possible effect of uncertainty about business customer results in our sensitivity analysis. % changes were only used in the contingent valuation questions; in the choice experiments absolute values were used.
If the analysis did not allow for deterioration in service to be valued differently from improvement in service then there will be bias in the estimates.	We did allow for deterioration to be valued differently from improvement.
The use of a "package" contingent valuation experiment, bringing in all service attributes simultaneously, may lead to too much focus on price and depress valuations of service improvements.	We agree that this is possible – it is considered in the sensitivity analysis.
Where customers were presented with a package of improvements along with an initial starting amount, from which they iterated to a final willingness to pay amount then that final	We agree that this is possible but we have not used the contingent valuation results in our cost-benefit analysis.

sum may be influenced by the level of the starting point. For example, if customers were initially asked whether they would be willing to pay £100, the average willingness to pay may be higher than if the starting point was £50. It is unclear whether there were any tests for this effect.	
I have reservations about some of the sub-divisions of the results – I am not convinced that presenting results by county is appropriate, and it is not clear whether differences between business sectors are statistically significant.	We have not used the sub-divided results.

The issues which Professor Bateman has raised do not, therefore significantly affect the validity of applying the analysis for assessing benefits from our proposals.

We have commissioned further peer review on the value which we have applied to pollution incidents, as this is driving some enhanced service expenditure. Following initial comments from Professor Bateman on this value we have carried out further work (see Appendix 3 of Chapter C8). When Professor Bateman has commented on this we will provide the peer review.

3.2.7 Ofwat feedback on willingness to pay

The Ofwat feedback on our DBP raised some questions on our WTP analysis. In summary, the issues raised by Ofwat were:

- Was gain-loss asymmetry tackled sufficiently in our submission?
- Did the order in which questions were asked affect the results?
- Would alternative model formulations have had better statistical properties?
- Was the exclusion of a small number of outlier responses from business customers justified?

Gain-loss asymmetry was considered through including deterioration in service for four measures. These appear as negative values in the table in Section 4.2.3 above. With the exception of external flooding, there was no significant difference between WTP for improvements and willingness to accept compensation for deterioration. In any event, we have not used any valuations for deterioration in service in valuing improvements.

We passed the remaining three issues to RAND, who carried out the analysis for us. Their response is included as an appendix to Chapter C8.

RAND's response was that:

- Adjustments made to the results excluded any bias from ordering of the questions. As noted above, results from the first experiment were scaled by results from a second experiment in which all service measures were considered together. There was no clear tendency for scaling of later questions to be higher or lower than for earlier questions.
- A number of alternative formulations were considered and that chosen was assessed to be the most satisfactory both theoretically and in terms of statistical properties.
- Within a stated preference study a small number of respondents may exhibit extremely different responses to those of the rest of the sample which could have a substantial

impact on the model results. This can arise if there were respondents that were either significantly different in some immeasurable way that we could not discover from the characteristics we have available for the models or respondents that were responding to the choices in a less rational way than other respondents. In such cases, it is good practice to remove such outliers thus to avoid biasing the results.

3.3 Sewer Flooding cost-benefit analysis

Additional research was needed on sewer flooding to allow flooding problems of different frequency and severity to be evaluated. Our approach to application of cost-benefit analysis to sewer flooding is summarised as follows:

1. Establishing willingness to pay to reduce sewer flooding within an overall assessment of customer priorities for changes in service levels.
2. A more detailed assessment of customer priorities for flooding of different severity and frequency, resulting in a ranking of cases of sewer flooding

The results of these two stages can then be combined to produce a valuation for resolving individual problems, taking into account severity and frequency.

3.3.1 Why Two Stages?

We consider that the assessment of willingness to pay is most appropriately done at the strategic level, in the context of choices between different aspects of service. As noted in the current UKWIR project draft guidance, assessment at the level of an individual service may lead to an overstatement of benefits.

The strategic assessment of willingness to pay has been carried out through contingent valuation, by presenting customers with packages of services and bills, and asking them to choose between them. The results have then been analysed to attribute valuations to changes in each element of service.

In order to produce a manageable list of service measures, there is only scope to include two aspects of sewer flooding. Customers were presented with a change in service in terms of a reduction in number of properties flooding internally in a year, and in number of properties flooding externally. This has produced a value for reducing sewer flooding. Average willingness to pay is £20,000 p.a. to reduce the number of properties flooding internally by one, equivalent to a capex scheme of around £400,000. On this basis, it would be worth paying £80,000 to eliminate flooding problems with properties flooding once every five years, or £40,000 to eliminate problems with properties flooding once every ten years.

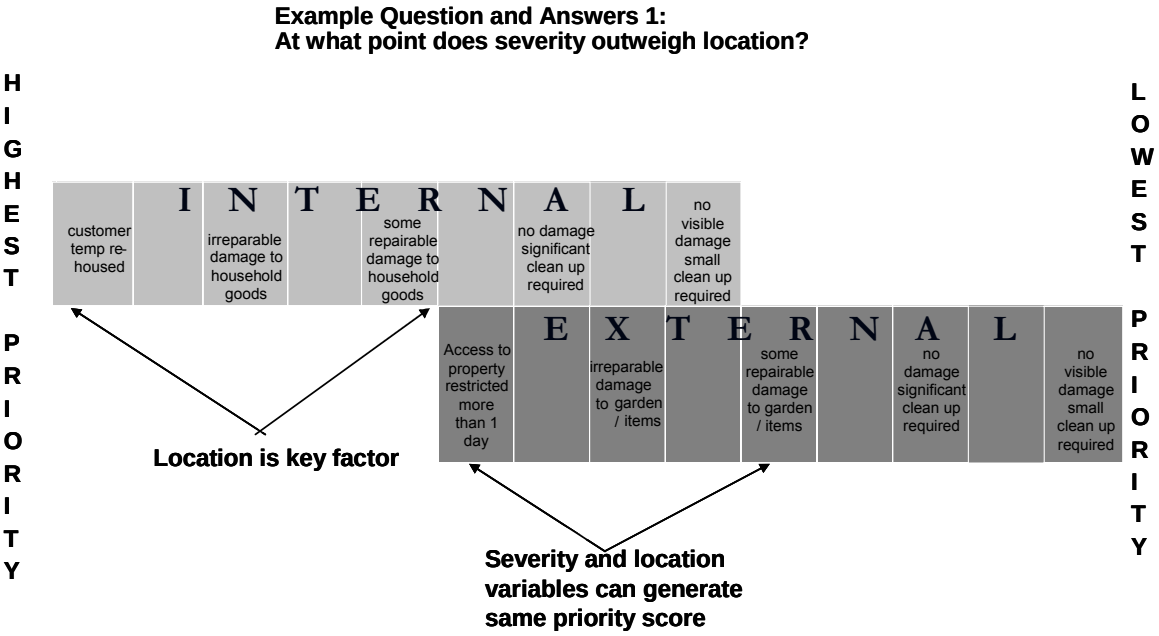
The limitations on this approach are that:

- It takes no account of variations in severity of flooding.
- It assumes that removing one problem property flooding every five years has the same value as removing two problems flooding every ten years; this is not necessarily the case.

Therefore we have carried out a separate exercise to establish customer priorities in more detail for sewer flooding. We have not carried this out in terms of willingness to pay. As noted above, assessment of willingness to pay based on single service assessment may result in overestimation, and the exercise is sufficiently complex without including monetary valuation. This two-stage approach is endorsed in the UKWIR report “The Role and Application of Cost-Benefit Analysis Volume 2: Sewer Flooding Guidance” and the method set out below is that included in Appendix 6 of the report.

3.3.2 Sewer flooding prioritisation

This involves assessing the relationship between three variables: severity, frequency and flooding location. The point at which one aspect becomes more significant than the other is identified through customer interviews. There is a set of standard questions, completed under controlled conditions, with standard text and examples to ensure consistency of approach. An example is set out below. Customers were asked to consider alternative internal and external flooding examples, with five different levels of severity. In the example, a customer considers internal flooding with some repairable damage to household goods to be worse than any case of external flooding. However, external flooding with access restricted for more than one day is considered worse than internal flooding with no damage – significant cleaning up required. Similarly, trade-offs were presented between location and frequency.



Customers were also given a list of thirteen potential flooding locations and asked to rank them – all internal locations were ranked above external locations e.g. a domestic room was ranked first, a basement fifth, a garden sixth, and wasteland 13th.

3.3.3 Ranking the Problems

The results of these questionnaires are then used to produce average overall results and draw up a rank of flooding problems for every combination of frequency, severity and location. This ranking is shown in the table below:

Rank	Problem		
	Location	Frequency	Severity
1	Internal	Monthly	Severe
2	Internal	4 times per year	Severe
3	Internal	Yearly	Severe
4	Internal	1 in 5	Severe
5	Internal	1 in 10	Severe
6	Internal	Monthly	Moderate irreparable
7	Internal	4 times per year	Moderate irreparable

Rank	Problem		
	Location	Frequency	Severity
8	Internal	Yearly	Moderate irreparable
9	Internal	1 in 5	Moderate irreparable
10	Internal	1 in 10	Moderate irreparable
11	Internal	Monthly	Moderate reparable
12	Internal	4 times per year	Moderate reparable
13	Internal	Annual	Moderate reparable
14	Internal	1 in 5 years	Moderate reparable
15	Internal	1 in 10 years	Moderate reparable
16	Internal	Monthly	Minor (significant clean)
17	Internal	4 times per year	Minor (significant clean)
18	Internal	Annual	Minor (significant clean)
19	Internal	1 in 5 years	Minor (significant clean)
20	Internal	1 in 10 years	Minor (significant clean)
21	External	Monthly	Severe
22	Internal	Monthly	Minor (small clean)
23	External	4 times per year	Severe
24	Internal	4 times per year	Minor (small clean)
25	External	Annual	Severe
26	Internal	Annual	Minor (small clean)
27	External	1 in 5 years	Severe
28	Internal	1 in 5 years	Minor (small clean)
29	External	1 in 10 years	Severe
30	Internal	1 in 10 years	Minor (small clean)
31	External	Monthly	Moderate irreparable
32	External	4 times per year	Moderate irreparable
33	External	Annual	Moderate irreparable
34	External	1 in 5 years	Moderate irreparable
35	External	1 in 10 years	Moderate irreparable
36	External	Monthly	Moderate repairable
37	External	4 times per year	Moderate repairable
38	External	Annual	Moderate repairable
39	External	1 in 5 years	Moderate repairable
40	External	1 in 10 years	Moderate repairable
41	External	Monthly	Minor (significant clean)
42	External	4 times per year	Minor (significant clean)
43	External	Annual	Minor (significant clean)
44	External	1 in 5 years	Minor (significant clean)
45	External	1 in 10 years	Minor (significant clean)
46	External	Monthly	Minor (small clean)
47	External	4 times per year	Minor (small clean)
48	External	Annual	Minor (small clean)
49	External	1 in 5 years	Minor (small clean)
50	External	1 in 10 years	Minor (small clean)

3.3.4 Attributing a score to each element of a flooding problem

As a first stage in attributing a value to different flooding problems, we have attributed a prioritisation score (referred to as a P score) to each element of a flooding problem. This is done by assuming that a constant value can be attributed to each of the characteristics and those values multiplied to produce an overall value, i.e. that:

Overall value = location value x frequency value x severity value

So if resolving an internal problem of particular severity and frequency is valued at 10 times an external problem of the same severity and frequency, then that 10 times relationship will apply to any other severity and frequency. The same assumptions of a constant relationship apply for severity and frequency.

Scores have been attributed to each element by identifying scores which, when multiplied together, reproduce the ranking set out in the table above. There has also been some judgement applied to extend the results to flooding issues or frequencies not covered in the survey, e.g. twice per year flooding, not included in the survey, has been taken to be half-way between the value for annual flooding and the value for 4 times per year flooding. The table below shows the values used:

Frequency		**Severity**	
More than 4 times a year	12	Short term impact	1.2
4 times a year	11	Minor impact (Domestic)	3
Twice a year	10.25	Irreparable damage (Domestic)	5.2
Once every Year	9.5	Property uninhabitable	14.5
Once every 2 Years	8.85	Damage to materials (Non-domestic)	11.5
Once every 5 Years	8.2	Loss of production/business	8
Every 5 to 10 Years	7.5	Closure of factory/business/shop	16
Every 10 to 20 Years	5	Exceptional circumstances	1
Greater than once every 20 Years	2.5		
Location – internal		**Location – external**	
No internal flooding	1	No external flooding	1
Domestic room	22	Restricted toilet use	1.6
Garage	16	Domestic curtilage	1.4
Conservatory	14	Domestic outbuilding	1.3
Suspended floor	15	Non-domestic curtilage	0.9
Habitable basement	19	Highway/Footpath	0.4
Cellar (Storage)	13	Landscaped area	0.6
Commercial	12	Sports Ground	1
Food Outlet	18.5	Public open space	0.5
Health Facility	24	Field	0.3
Educational	22	Wasteland	0.1
		Play Area/School	1.1
		Environmental	0.9

An extract from the ranking table shows how these scores reproduce the rankings from the survey:

	Location	**Frequency**	**Severity**	**Total score**
1	Internal =22	More than 4 times per year = 12	Severe = 14.5	22 x 12 x 14.5 = 3,828
2	Internal = 22	4 times per year = 11	Severe = 14.5	22 x 11 x 14.5 = 3,509
3	Internal = 22	Annual = 9.5	Severe = 14.5	22 x 9.5 x 14.5 = 3,031
4	Internal =22	1 in 5 = 8.2	Severe = 14.5	22 x 8.2 x 14.5 = 2,616
5	Internal = 22	1 in 10 = 7.5	Severe = 14.5	22 x 75 x 14.5 = 2,393
6	Internal = 22	Monthly = 12	Moderate irreparable = 5.2	22 x 12 x 5.2 = 1,373
7	Internal = 22	4 times per year =11	Moderate irreparable = 5.2	22 x 11 x 5.2 = 1,258
..	…..			
49	External = 1.4	1 in 5 = 8.2	Short-term impact = 1.2	1.4 x 8.2 x 1.2 = 13.8
50	External = 1.4	1 in 10 = 7.5	Short-term impact = 1.2	1.4 x 7.5 x 1.2 = 12.6

3.3.5 Attributing values to sewer flooding problems

The above procedure produces a score for problems but does not establish how much it is worth paying to remove a particular problem. This is done by combining the results with the outcome of the Willingness to Pay survey. The survey has indicated that customers are willing to see an increase in annual bills of £20,224 pa (see table in section 3.2.3) to reduce internal flooding incidents by one.

We have analysed the P scores attributable to over 1,500 internal flooding problems to relate the number of flooding incidents to P scores. The expected number of incidents has been derived from the frequency assessment for P scoring. For example, a property flooding severely four times per year has a P score of 3,509; the P score per flooding incident is 3,509 / 4 = 877. The following formula has then been applied:

Average number of P points per flooding incident =
Σ Expected number of flooding incidents p.a. / Σ P scores
Average number of P points per flooding incident = 849
Value per P point = WTP value per flooding incident / Number of P points per flooding incident
= 20,224 / 849
= £23.80 per P point

For any scheme, the total P score is multiplied by £23.80 to produce an annual benefit value which is compared with the annualised cost. The application to individual schemes is set out in Chapter C8.

The same calculation applied to external flooding gives:
£4,000 (WTP per flooding incident) / 80 (average P points per flooding incident) = £50 per P point

However, we have used the lower value of £23.80 throughout to maintain consistency with the ranking produced by the sewer flooding survey.

4. Evaluation of stakeholder response to the Draft Business Plan

4.1 Methodology

As part of the ongoing consultation process, further research was undertaken with the main objectives of determining stakeholder support for the proposed business plan, both in terms of planned bill increases and the planned programme of improvements.

Both qualitative and quantitative methodologies were required for domestic and business customers. For domestic customers, focus groups and hall tests were recommended whilst for business customers, tele-depth interviews followed by a series of quantitative telephone interviews were undertaken. In addition, a programme of stakeholder interviews were undertaken.

4.2 Qualitative Findings

The key finding from the qualitative stage of research is that customers support our DBP in terms of the bill increases. Respondents did not find an average increase for ‘new’ investment of just under £13 a year difficult to afford, with many saying that that only works out at an extra £1 a month. These findings were particularly reinforced when it was understood that there were efficiency savings to trade off here also so that the real impact on bills would be only £2.65.

Respondents also supported the emphasis of the DBP as it impacted on them. They believe that the focus on the operational aspects of the business in terms of delivering a continuous supply of quality water and ensuring an efficient and effective sewerage service are of paramount importance to our future plans. There was consensus from most business respondents that these Key Strategic Intentions were the correct ones for us to focus on.

In particular, customers spontaneously focused on three or four specific areas of the key strategic intentions. These were leakage, water conservation and metering. The Gloucester groups, unsurprisingly, felt that eradicating the risk of being without water by improving the resilience of the network was crucial to our plans. Business respondents also mentioned areas of improvement that included dealing speedily with leaks, consumer water conservation, having adequate contingency water provision and responding in a timely fashion to any complaints received.

Some people also spontaneously mentioned customer service as an area that required attention with many registering their concern about the delays in us coming out to fix problems, especially leaks, and the difficulties people have when trying to read their meters. In the main however, most people said the customer contact experience was positive once they got through to a person. Overall, people were quite satisfied with our service as most gave it a 7 out of 10 rating. The majority of business respondents also made very positive remarks about us, in particular our communications.

Respondents welcomed the variety of communication channels that we are offering and many said they would carry out basic transactions on line, such as change of address and setting up direct debits. However, people would generally use the phone if they have a problem and prefer to speak to a person as opposed to going through an automated system.

A minority of business respondents did have some problems with our service where we had reputedly failed to follow up on a problem that they felt needed resolving. Hence, these respondents felt that we could be more proactive and vigilant regarding responding to outstanding queries.

On the whole customers struggled to understand how our operations could impact on the carbon footprint. Indeed, people expressed surprise when they were told that the water industry is the fifth largest carbon producing industry in the country. The implication of this is that more education may be required to help customers understand the extent of our potential impact on the environment.

However, once respondents understood the magnitude of our operations they considered any measures to reduce carbon emissions as worthwhile, as long as they were cost effective and not at the expense of carrying out our core service of ensuring a continuous supply of water and the effective removal and treatment of waste.

Customers, residential and business alike, were generally quite impressed with the current service levels and, although having nothing to compare with, when told what the average water and sewerage bill was they thought the current level of service represented value for money.

Given the number of households in our region many customers said the proportion of people affected by various problems was very small. While they were not necessarily affected by these problems, they acknowledged that they would not like to experience some of the issues, particularly sewer flooding, which was felt to be an appalling experience for anyone.

The major concern for customers was the extent of leakage. There was incredulity at the perceived high levels of leakage because of what was seen to be a waste of resource as well

as a feeling of injustice that ‘this is water that we have paid to be treated and distributed, and it’s just going to waste’.

Despite being reasonably satisfied with the current levels of service there was unanimity about the need for continuous improvement and ‘always striving to do better’. The same was true of businesses where most respondents were happy with the current service levels although this was tempered by an acknowledgement that there was still room for improvement.

When customers were presented with the improvements there was an overall sense that, while any improvement is better than nothing, if anything the DBP lacked ambition, especially as the improvements were over five years. Businesses took a more pragmatic view saying that although the proposed improvements to service levels were modest they were content that they were still moving in the right direction. The perspective from these respondents is that we are supporting slight incremental progress that will be both manageable and achievable in the future and hence likely to succeed.

They recognised some improvements as being significant like improving river quality, the network being more resilient to ensure water supplies could be maintained in the event of severe events and interruptions to supply.

However, customers quickly focused on two issues which they felt needed more improvement than is being planned for. The cost to reduce leakage by four litres per household per day compared to three times the cost for getting customers to reduce their consumption by the same amount.

Respondents also believed that improving internal sewer flooding by 100 and no improvement to external sewer flooding over five years was not acceptable. There was a feeling that £4 over the five years to stop 100 properties being flooded was not enough and that some of the monies could be redistributed to improve internal sewer flooding further.

The overall bill increases were deemed to be acceptable. For most, an extra £12 a year or £1 month would hardly be noticed and respondents were surprised that the bill impacts were not more, especially given the current trend with the rise in the cost of living. This feeling was even more strongly felt when it was appreciated that there were real efficiency bill savings to balance against much of this investment based increase.

Although people were largely supportive of the average £12 increase in bills there was a strong sense that too much was being spent on river ecology. While customers were in favour of environmental improvements, many queried why such a huge improvement was required and therefore why so much, over half of the £12, had to be spent in this area. They would rather see less improvement on rivers and see the investment go elsewhere, for example into improving sewer flooding and leakage.

The extra expenditure planned for on resilience, where 1.4 million customers would be provided with alternative sources of water, was fully supported.

An alternative scenario with a slightly increased investment (to £16) was also tested out. Most people would have no issues with a £16 average bill increase either and, although customers raised the same issues around leakage and water conservation mentioned above, they felt that the extra £4 was being targeted in the right areas.

Overall then while people felt they could afford the extra £12 or £16 a year, they felt a better balance could be achieved in terms of how the expenditure was being divided up between each of the improvements.

The 'modest' bill increases do not appear to unduly concern the majority of businesses and there was much support for the balance of price increases in relation to the recommended service improvement levels. Respondents feel that we have adopted the correct balance between raising prices and service level improvements

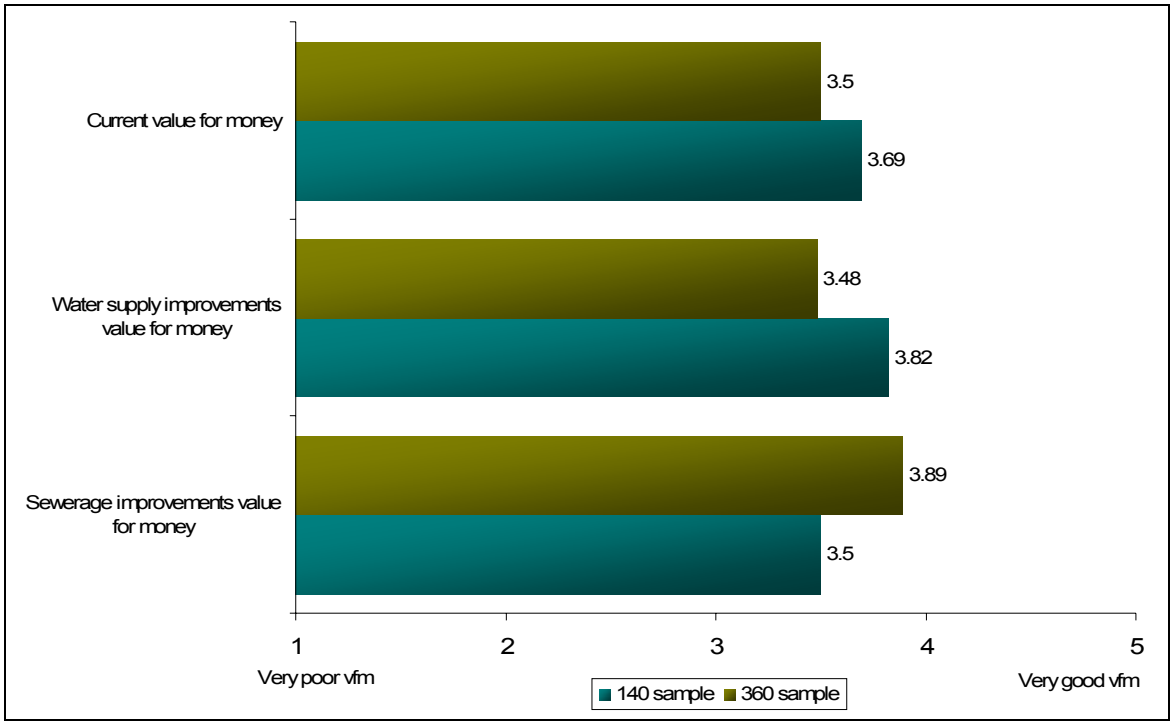
Finally, whatever the outcome of the DBP in terms of improvements and bill increases, customers were keen to receive some simple and clear information about what improvements had been made on an annual basis so that they can see where their money has gone. This supports the main willingness to pay qualitative research where customers wished for more transparency and accountability from us.

4.3 Quantitative Findings

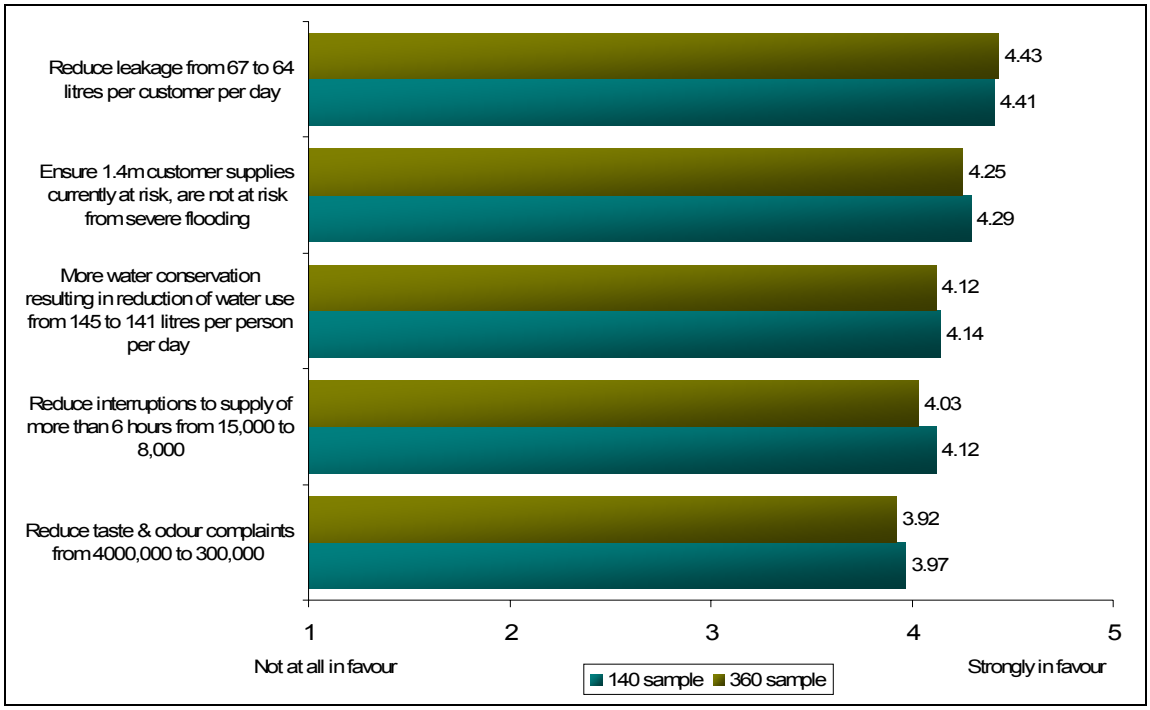
This note summarises the headline findings of the DBP evaluation research for both residential and business customers. For the residential research there are two sets of results based on different sample sizes – 140 and 360. The reason for this is that the 140 sample did not take account of net effect of the efficiency savings on waste water. This element was incorporated for all business respondents.

4.3.1 Residential Headlines

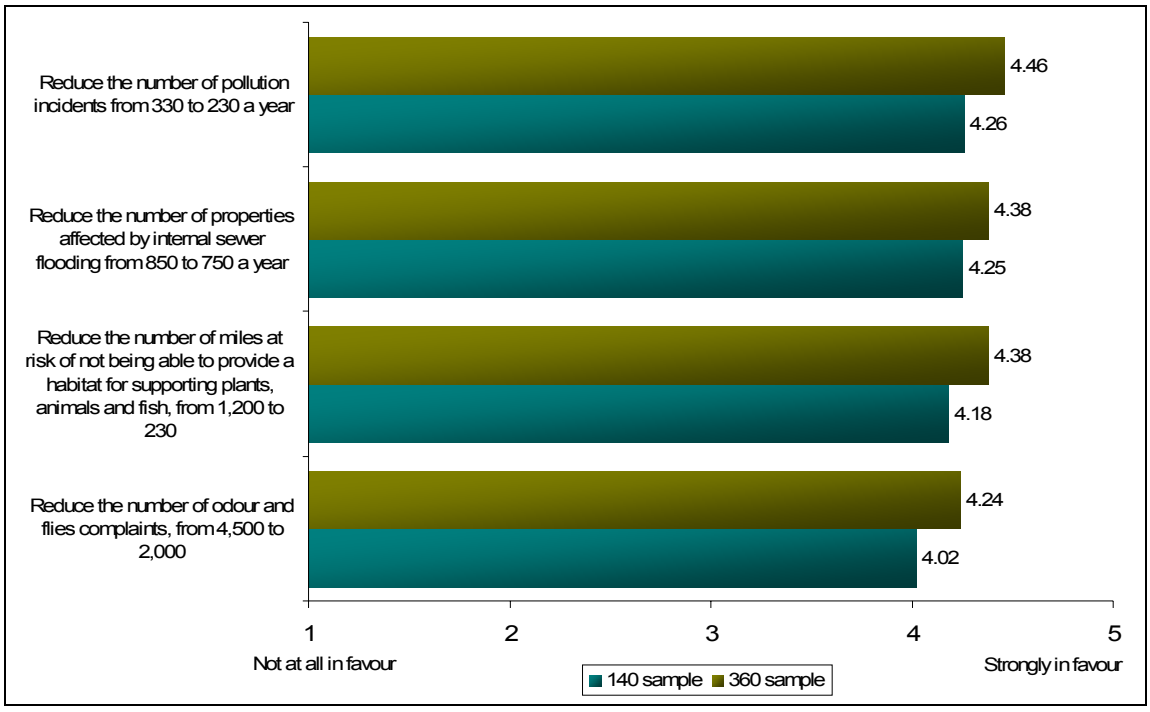
Overall, respondents were quite positive in their value for money ratings both towards the current level of service and future service improvements. It is interesting to note that despite the increase in bills, albeit small increases, the ratings stay the same or marginally improve. With the sewerage improvements, there is a stronger rating for the 360 sample size. This is likely to be due to the net effect of the efficiency savings for sewerage which were not included for the 140 sample size.



There is a very good degree of support for each of the proposed water supply improvements as shown in the Figure below. The results are very similar regardless of the sample size but this should not be surprising as the bill impact was the same across both samples i.e. an increase of £8.39.

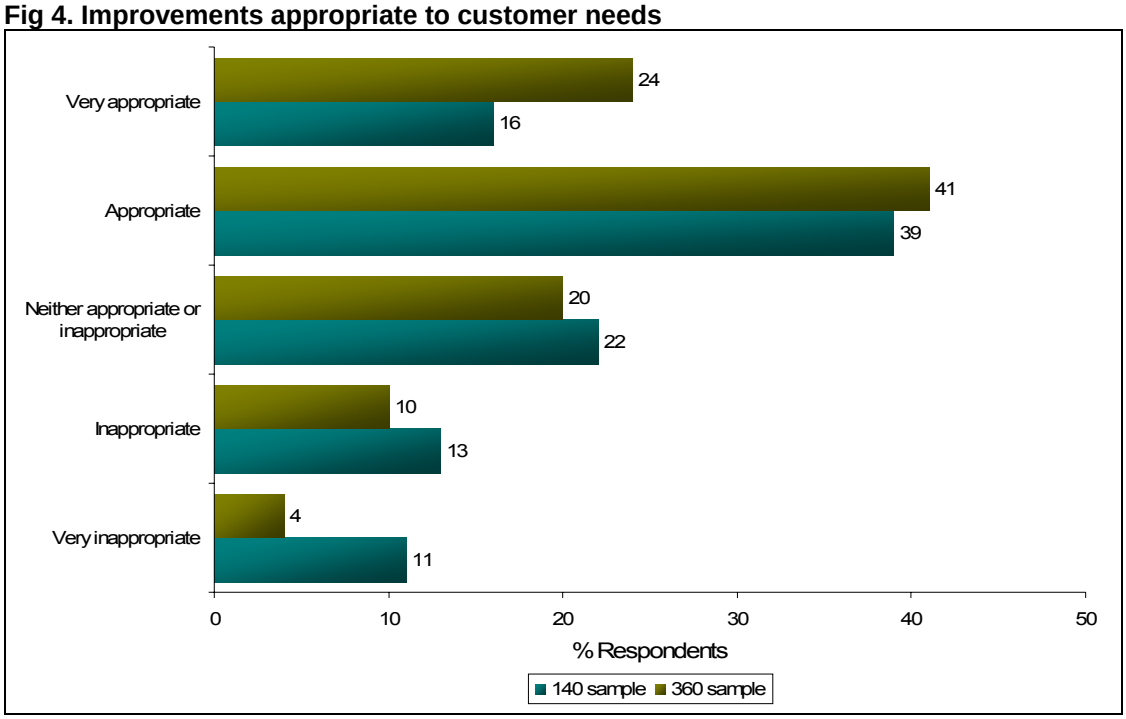


Overall, the waste water improvements were better supported than the water supply improvements as can be seen in the next Figure. There was more support for the 360 sample as this took into account the efficiency savings, and therefore a reduction in the overall bill impact of the sewerage element of the DBP.

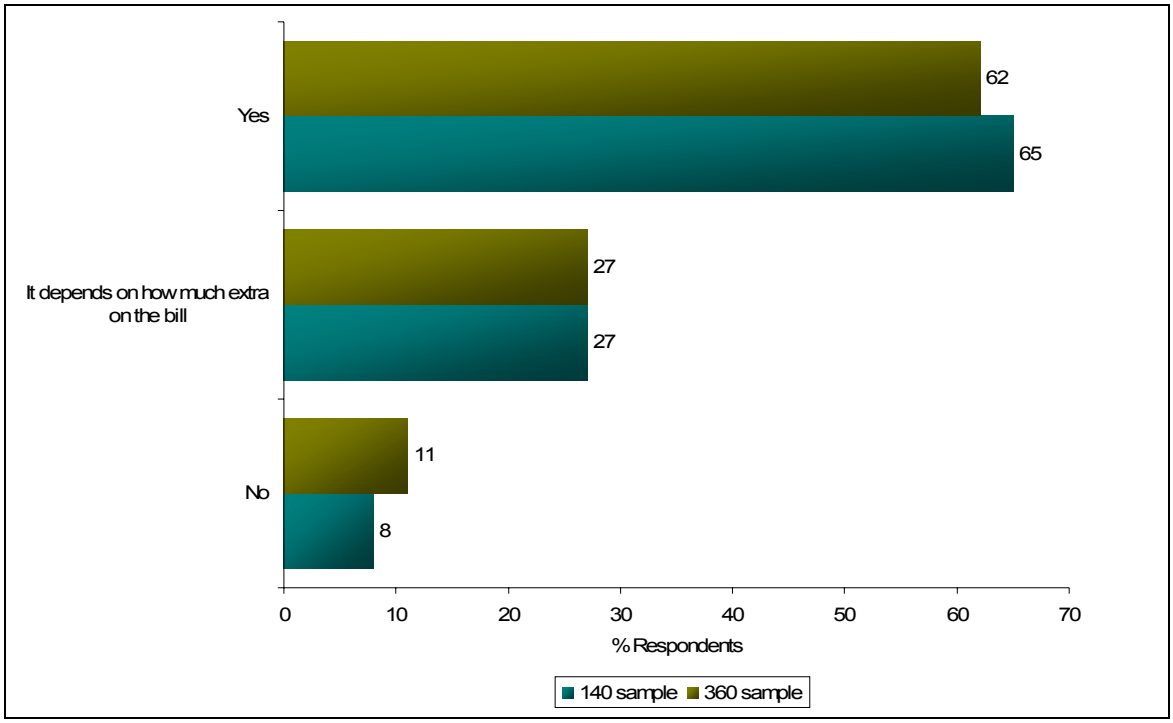


Respondents were also asked to indicate the extent to which they thought the improvements provided in the DBP were appropriate to customer needs. Between a half (55%) and two thirds (65%), depending on the sample size, said that the improvements were appropriate, with the 360 sample size saying they were more appropriate than the 140 sample.

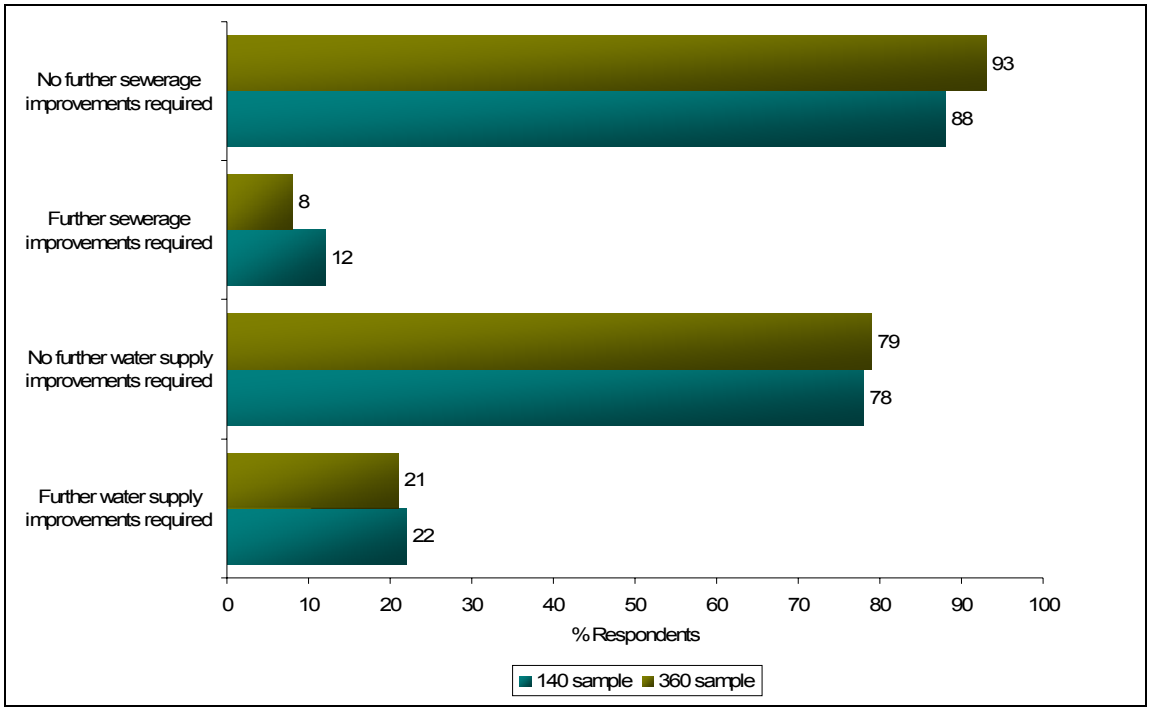
Fig 4. Improvements appropriate to customer needs



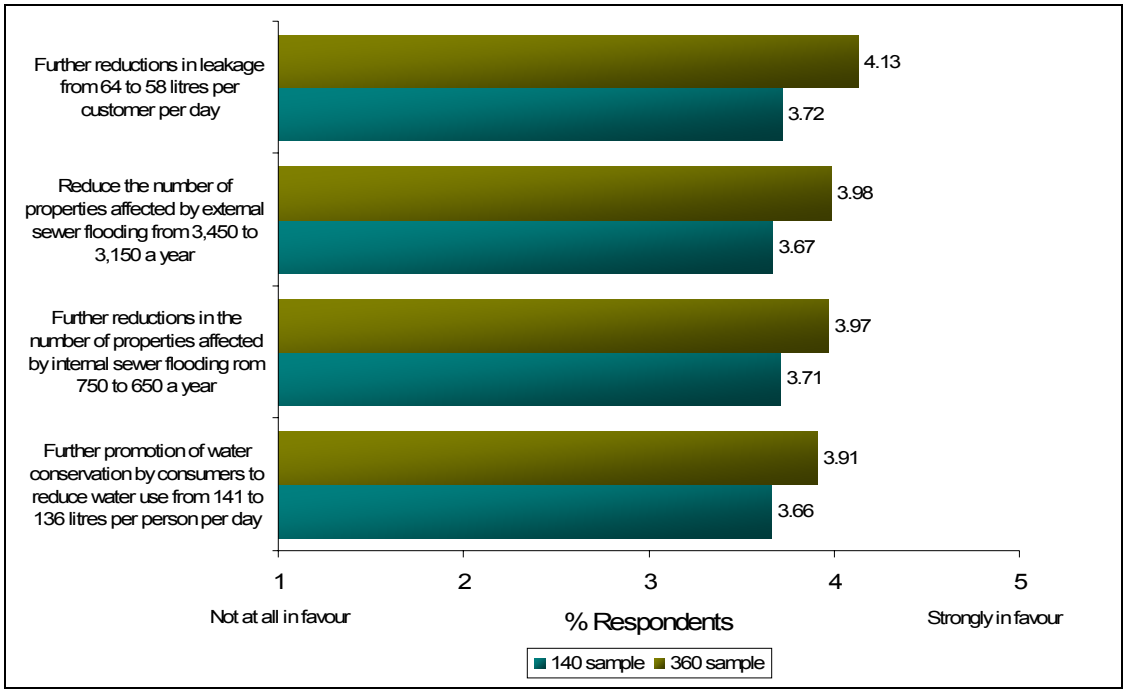
For around two thirds of respondents the proposed level of improvements were sufficient whilst for just over a quarter of respondents (27%) any additional improvements would depend on the extent of any bill increases, as shown in the Figure below.



The vast majority of respondents, regardless of the sample size, indicated that no other service level improvements were required from our proposed water and sewerage service packages as shown in the next Figure. A thorough analysis of possible further improvements will be provided within the main report.

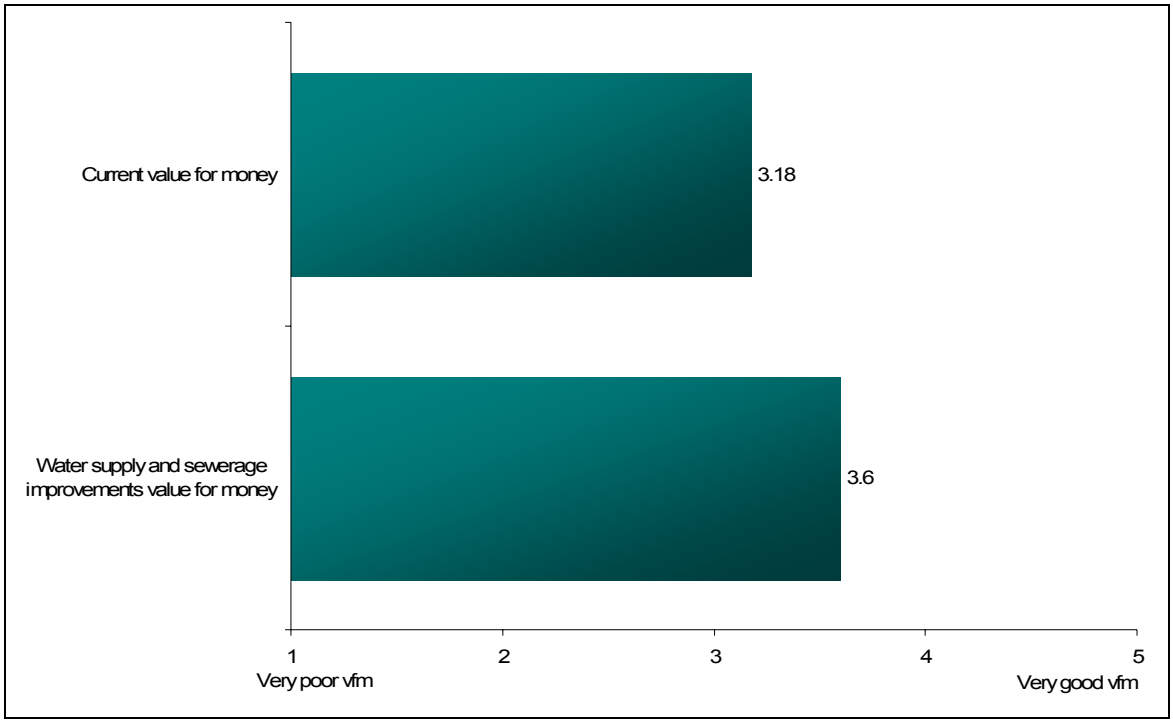


Subsequent questions were then asked to understand whether any further improvements could be made to some of the attributes already explored with respondents. The specific additional improvements comprised further reductions in internal sewer flooding, leakage and water conservation as well as reducing the number of external sewer flooding incidents. Although not as supportive as for the first set of improvements respondents were still quite in favour of the additional improvements, with those in the 360 sample being more positive than the 140 sample due to the aforementioned reasons. This indicates that the currently proposed DBP falls within the financial 'comfort zone' applied by many customers.

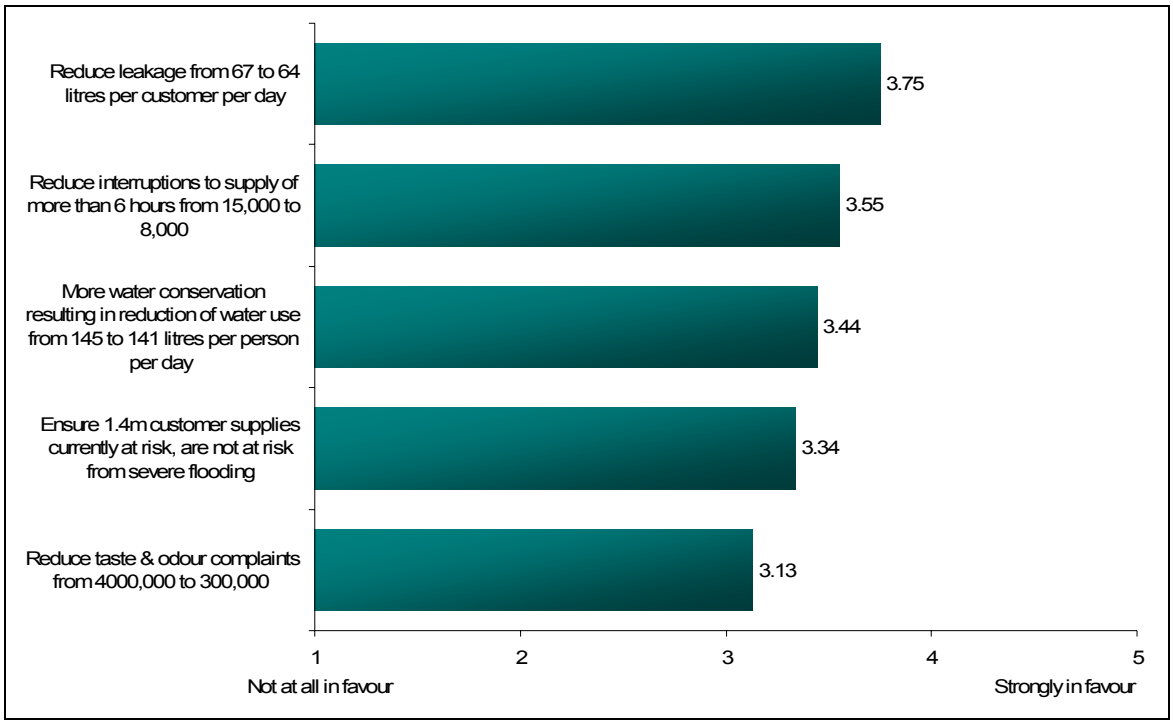


4.3.2 Business Headlines

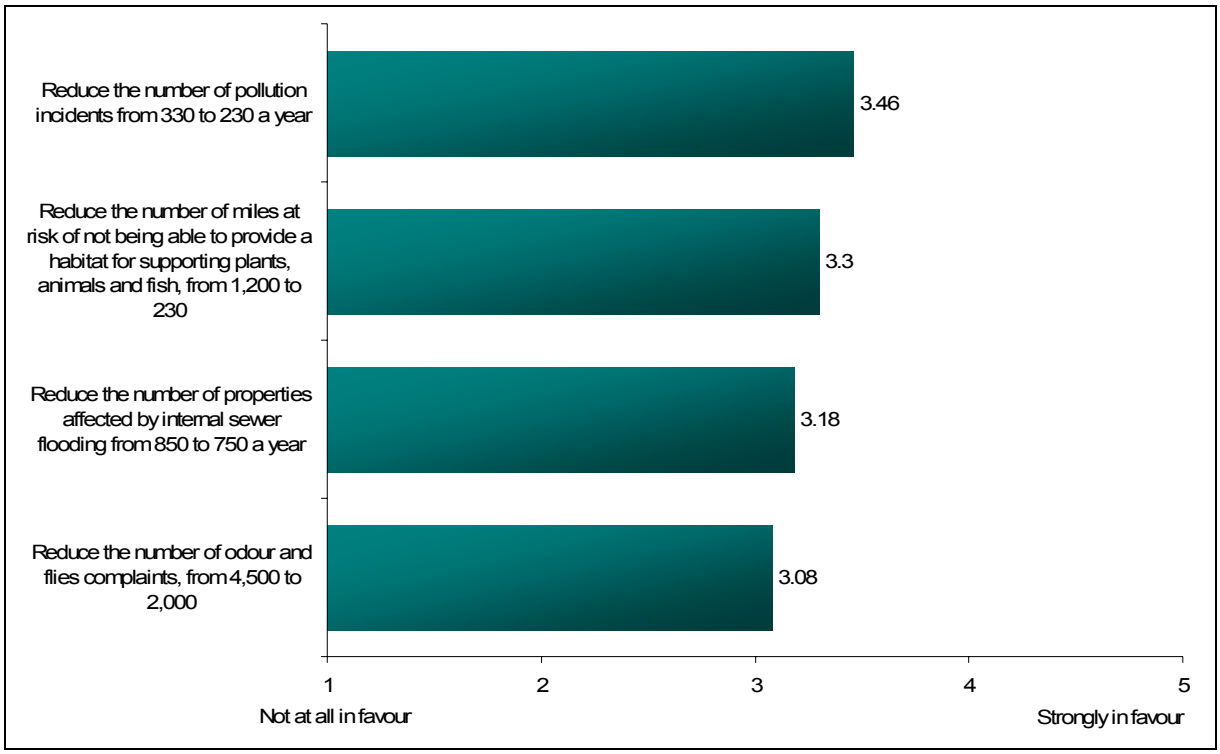
Business customers provided less positive value for money ratings for the current level of service than domestic customers. It is noticeable that value for money ratings improved in relation to the proposed water and sewerage improvements from 2010-2015.



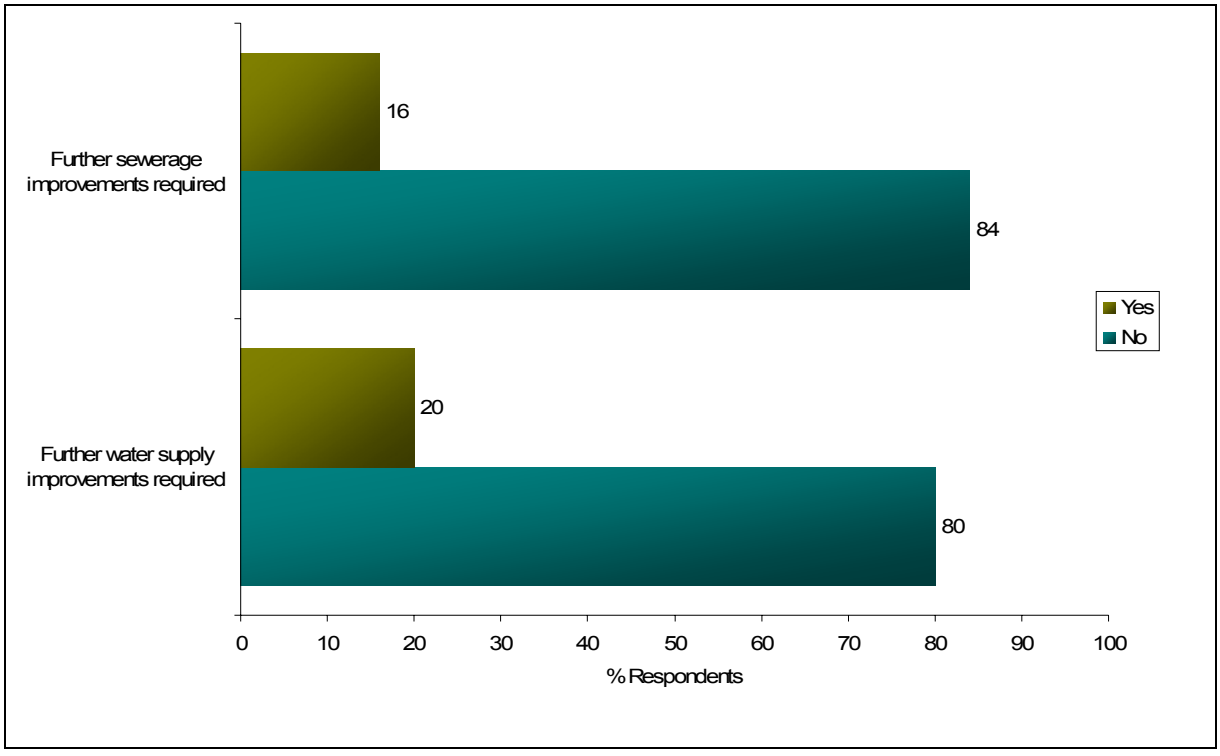
Businesses supported some of the water supply improvements more than others, as shown in the Figure below. Leakage reduction was the most strongly supported improvement followed by interruptions to supply. Least supported was the reduction in taste and odour complaints.



Business customers, as seen in the next Figure, were less supportive of waste water improvements than water supply improvements and were considerably less supportive than consumers about the package of investment for sewerage.

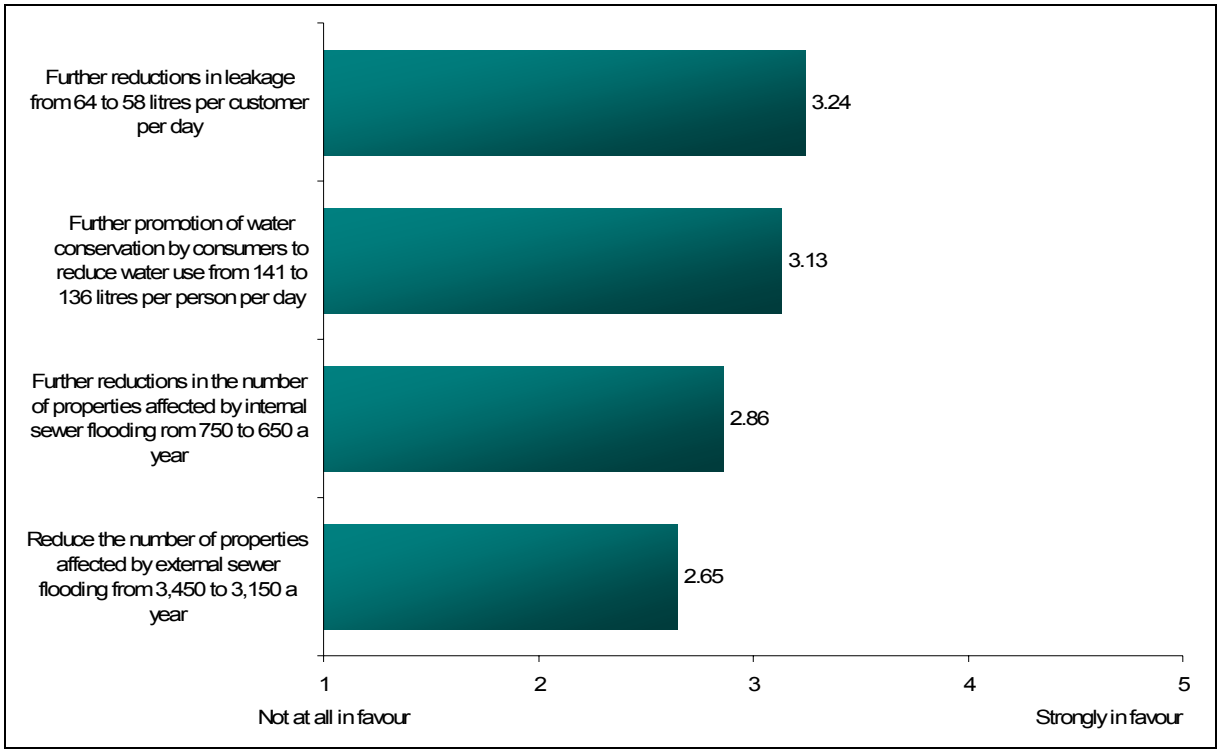


As with consumers, the vast majority of businesses indicated that no other service improvements were required from our proposed water and sewerage service packages.



Business customers were also asked whether they were in favour of any further improvements to the attributes already mentioned. The same four specific additional improvements were explored – further reductions in internal sewer flooding, leakage and

water conservation as well as reducing the number of external sewer flooding incidents. A very similar pattern emerges to consumers where there is diminishing support for the additional improvements, to the extent that businesses were not in favour of some of them as indicated in the Figure below. This indicates that the DBP is probably pushing businesses to the limit of their preparedness to provide investment support over the regulatory five year period.



4.3.3 Stakeholders Headlines

Stakeholders hold mixed views about how satisfied they are with Severn Trent Water. The main reason for people saying that they were satisfied was the reliable service and the overall lack of any problems, especially interruptions to the water supply. The main reason for dissatisfaction amongst stakeholders was that the service was perceived as too expensive. Indeed, 10 of the 31 stakeholders thought that we provided fairly or very good value for money, 15 were ambivalent in their views and six said that we provided fairly poor value for money.

Overall, stakeholders felt that a £2.65 increase in customer bills for the improvements that would be made represented value for money. In total, 25 respondents said that it was fairly or very good value for money with only one person saying it was poor value for money.

On the whole stakeholders supported the water supply improvements being put forward in our DBP. Reducing leakage and ensuring customer supplies were not at risk due to the effects of severe flooding gained the most support. The one area where support was weaker was the improvements to taste and smell as stakeholders thought that this was either not a particularly significant issue or that, because the problem did not affect their area, it was not that important.

As with business customers, stakeholders were slightly less favourable towards waste water improvements than the water supply ones. Stakeholders still supported the improvements, however, with strongest support being given to the reduction of pollution incidents and reducing the number of properties experiencing internal sewer flooding.

For the additional improvements beyond the DBP, there is a very similar pattern to consumers and business customers where there is diminishing support, although stakeholders were still in overall support of the additional improvements.

4.3.4 Conclusions

The results of our post-DBP research show that:

- There was strong support for our DBP proposals amongst both domestic and business customers, though slightly less strong with business customers.
- Our proposed improvements were supported even if the bill increase had been larger, i.e. if there had not been offsetting cost savings keeping the bill increase down.

4.4 PR09 Joint National Research

Eight stakeholders worked together on a joint research project looking to find out consumers' views of each Water/Water and Sewerage Company's DBP. Ofwat made embargoed results available for us to use in the Business Planning process.

A demographically representative sample of over 300 customers was contacted across our area. They were asked for views on the cost of current bills and what they thought of the service improvements outlined in our DBP. The importance of water and sewerage services to customers compared to all other local issues is emphasised by the 97% who rated the service as important or very important, below only crime prevention and health issues.

While 94% were right to believe that we are responsible for providing safe, reliable, clean drinking water, 93% also felt it to be the most important service we provide.

Contact with us during the last 12 months was low (5%), and is half the rate of our most recent customer tracking survey, July 2008. The majority of customers (90%) are either fairly or very satisfied with the water and sewerage service they receive, due mainly to good service and no problems. This is not dissimilar to the 84% of residential respondents who were satisfied with our provision of water and sewage service, as found in our own PR09 research.

85% of customers also feel fairly or very confident in the accuracy of their bills, and this contributes to the 62% who feel the current water and sewerage service is either fairly or very good value for money. This value for money rating was mainly because they felt the bill was affordable or that they valued the service. However, 16% felt it is fairly or very poor value for money, mainly because it is too expensive already.

When shown the current levels of service in relation to water and sewerage services, the overall current service level was rated as fairly or very good value for money by 67% (65% for sewerage and 67% for water). Of these, the main reason given was that the bill was affordable or that the service was valued. However, there was a small proportion, 12%, who felt the overall value for money was poor with over two thirds of these feeling it was 'too expensive already'.

Customers were also told about new service levels which will be introduced from 2010 and the impact on the average bill by 2015. Taking all these into account, 74% of customers felt the plan was either acceptable or very acceptable, 24% did not.

When shown more detail about the proposed plan for future water and sewerage services and the resulting bill increases by each service area for the period 2010-2015, the overall service level was rated as acceptable by 80% (83% for sewerage and 77% water). Of these,

the main reason given was that the plan was affordable (60%) or that the service was valued (30%). However, there was a proportion, 18%, who felt the overall plan was unacceptable with over half (51%) of these feeling it was 'too expensive already'.

When shown each proposed service level, around 75% of customers felt each proposed service level was good value for money. This ranged from 71% for maintaining water pipes, treatment works and reservoirs to 77% for maintaining sewers and sewage treatment works. The importance of some of these service level changes is identified by the concern customers would show if a service level improvement was delayed. Over three quarters, 76%, would be most concerned by delays to ensuring the safety of tap water – drinking water quality. Also, 65% would be concerned by delays to ensuring a reliable and continuous water supply.

Overall, the bill by 2014-15 including all proposed service levels was rated as good value by 68% (78% for the sewerage bill and 62% for the water bill) and 91% felt the plan had covered everything. However, customers do not favour one big step change in bills. Instead, 90% would prefer them to change steadily every year throughout the period.

These findings seem to confirm the results from our own PR09 research where overall, respondents were positive in their value for money ratings both towards the current level of service and future service improvements.

As the table below shows, there is a high level of acceptability of the plan where bill increases are kept below 5%. Although our proposed increase is larger than in the DBP, it remains under 5%, and this result confirms the results of our own research, that our proposed increase is acceptable.

Table 6.10 Acceptability of DBP as a whole – by Overall bill Impact / % bill change

	Overall bill impact			Overall bill % change		
	£20 or less	£21 - £49	£50+	5% or less	6 – 15%	16% +
Completely unacceptable	5%	9%	8%	5%	9%	8%
Unacceptable	12%	38%	36%	12%	36%	35%
Acceptable	70%	45%	45%	72%	45%	45%
Very acceptable	8%	3%	2%	7%	4%	2%
Don't know	4%	7%	9%	4%	6%	10%
Base	2,546	2,239	1,390	2,330	2,152	1,693

All the proposed improvements consulted on in the survey were rated as good value for money, with little variation between the proposals (the proportion of customers rating the improvements as good value for money ranged from 71% to 77%, with an average of 74%).

The results of the national research confirm those of our own research, that all our proposed improvements are regarded as good value for money and that our increase in bills is acceptable. We do not consider, therefore, that we need to make any changes in our proposals as a result of the national research.

5. CCWater research post Mythe Incident

Following the flooding of Mythe water treatment works, and the ensuing loss of water supplies to the Cheltenham, Gloucester and Tewkesbury area, CCWater carried out customer research through focus groups and a quantitative survey.

The clear view of the focus groups was that such an incident should never be allowed to happen again – not just in the affected area but anywhere. Respondents wanted to see action, not just as a reaction to recent flood levels, but rather based on the belief that in the future with the predicted increases in extreme weather, flood levels are likely to be significantly higher.

Some businesses were significantly affected. A number of respondents had lost money as a result of the loss of water supply, particularly those working in the food sector. Respondents who ran bars or coffee bars, for example, had had to close, while a musician lost work because the places he normally played in were unable to open.

Another respondent who works in a medical laboratory said that although emergency water had been brought in for the analysers, they had operated on an emergency basis because half of the staff were unable to get in to work.

Just over half of respondents in the quantitative survey (57%) felt they had experienced a 'lot of inconvenience' as a result of losing their mains water supplies. The main inconveniences, in order of priority, were not being able to use the bath/shower (78%), flush the toilet (56%), wash clothes (41%) or wash up (38%).

We have taken these results into account, along with the findings of the Pitt Report, in developing the resilience programme set out in Chapter B6 and summarised at the end of this chapter.

6. Customer Tracking

6.1 Background

Our customer satisfaction tracking research enables us to monitor customer views and build up a broad picture of their thoughts and perceptions of the services we provide.

The research focuses on satisfaction with water supply, including taste, appearance, hardness and pressure; sewerage services and customer service, including any contacts/complaints and level of satisfaction in their resolution.

The research is undertaken twice a year (January and July) and is carried out through in-home interviews and, for the last two waves, by telephone for comparative purposes.

Questions from the survey not directly related to customer satisfaction have not been included in the results. However information on these questions is available in the full report from the research agency (Accent).

6.2 Sampling Method

A combination of random and quota sampling is used. A stratified, random approach is used to identify the sampling points. Quota sampling is used to ensure a maximum of two interviews per street are undertaken, ensuring respondents were either heads of households or spouses/partners. The number of customers interviewed in July 2008 was 525 and January 2008 was 527.

In total, 525 face-to-face interviews and, in July 2008, 265 telephone interviews were undertaken as we examine the potential to move to a telephone survey in future. A representative cross section of our customers was made by social grade and age groups and the recruitment procedures also ensured a good geographical spread including rural and urban representation.

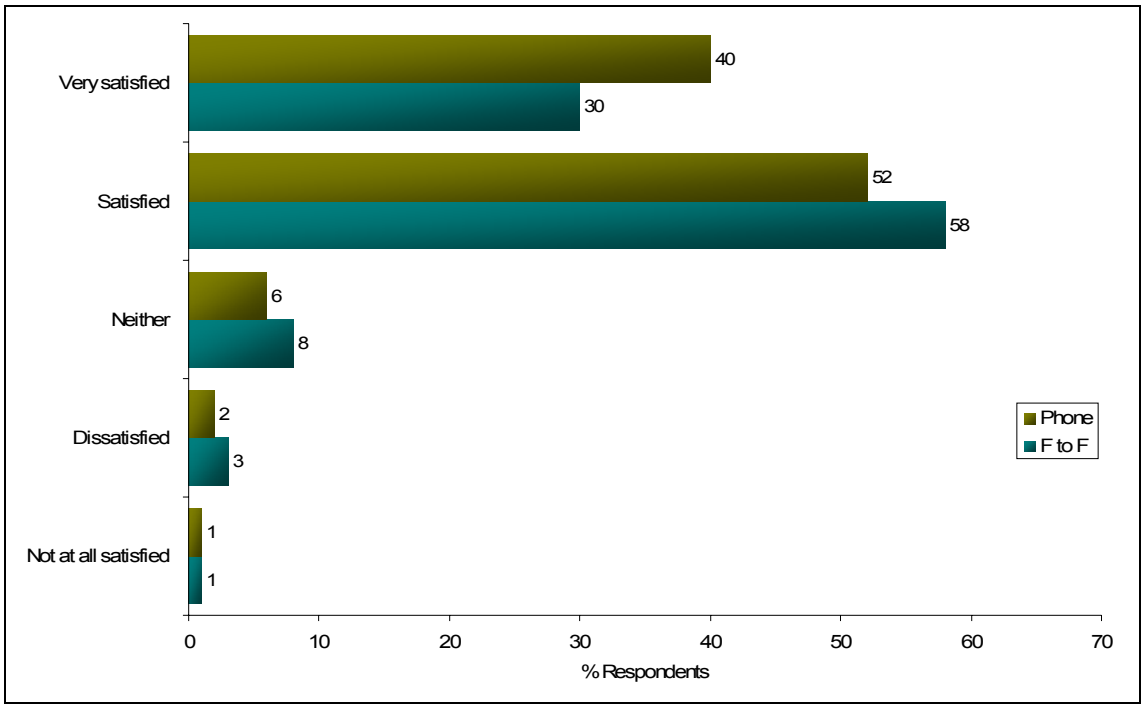
To ensure that all respondents were in scope for this research, contacts were asked a number of screening questions including whether their water supplier was Severn Trent Water. Respondents who were either unsure of their water supplier or who simply did not know that their water supplier was Severn Trent Water were excluded from the research.

The customers who complete the questionnaire were those who were responsible for paying the water bill in their household.

6.3 Results

6.3.1 Satisfaction with Drinking Water

Overall, the vast majority of customers, around nine tenths, are either satisfied or very satisfied with the water services provided by us regardless of methodology. However, the chart below shows that a greater proportion of telephone respondents were very satisfied compared to face to face respondents, 40% and 30% respectively. It should be noted that the differences between CATI (Computer Assisted Telephone Interviewing) and CAPI (Computer Assisted Personal Interviewing) respondents are statistically significant.



In comparing drinking water attributes with previous phases in the Table below, it is worth noting that some of the attributes have been amended; in particular, the taste attribute includes smell, and appearance has been changed to colour. In addition, continuity of supply and leakage are two further attributes that have been included in this survey.

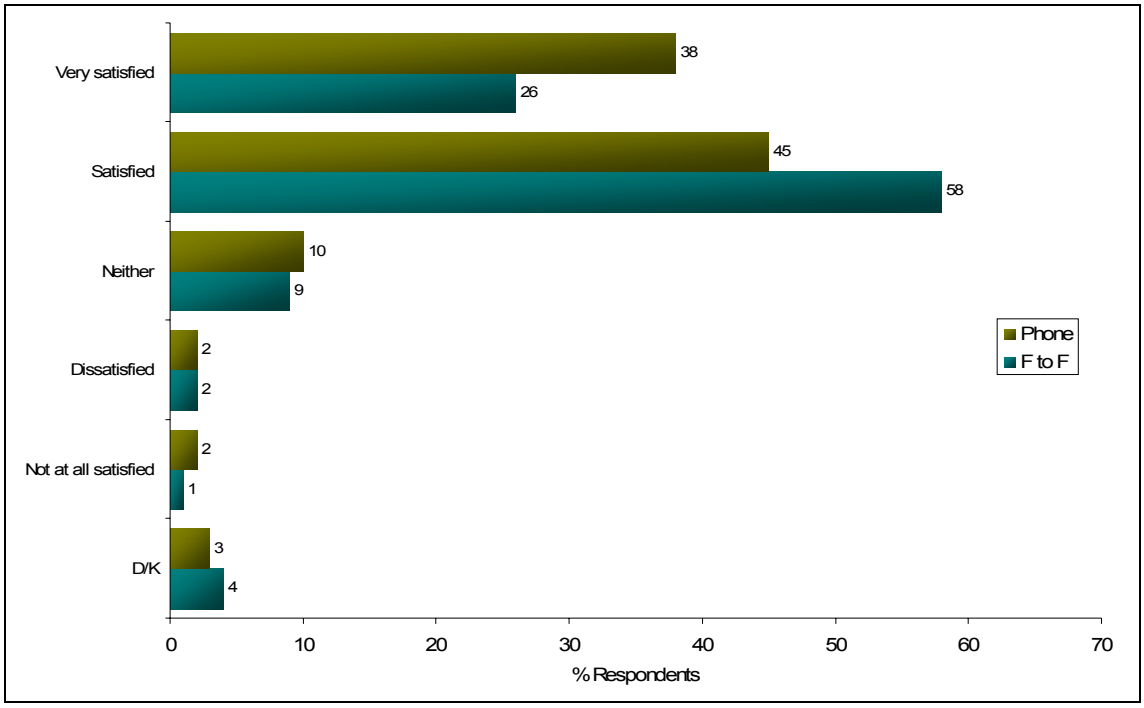
Like for like comparisons show some differences from past phases especially where hardness and pressure are concerned; the mean scores of these attributes have increased from 3.5 to 3.8 and 3.9 to 4.2 respectively (where 5 is very satisfied, 1 is not at all satisfied).

	Jan-06	Jul-06	Jan-07	Jul-07	Jan-08	Jul-08 F2F	Jul-08 Tel
Taste & smell	4	4	4.1	4	4	**4**	**4.1**
Appearance/colour	4.2	4.2	4.2	4.2	4.1	**4.2**	**4.4**
Hardness	3.6	3.5	3.6	3.5	3.5	**3.8**	**3.6**
Pressure	4	3.7	3.9	3.9	3.9	**4.2**	**4.3**
Continuity of supply						**4.4**	**4.5**
Leakage						**4.2**	**4.3**

Base – all respondents
Red = statistically significant

6.3.2 Satisfaction with Waste Water Services

Satisfaction with waste water services was not really asked about in previous surveys but overall there are strong satisfaction ratings with over four fifths being satisfied or very satisfied with the sewerage services provided by us. Again, there was a higher proportion of telephone respondents who were very satisfied, 38% compared to 26% of face to face respondents. There were no significant differences between CATI and CAPI respondents on the waste water attributes.



In terms of specific waste water attributes, the Table below shows little difference between ratings of the various attributes for both of the methodologies; suffice to say that all of the attributes received strong levels of satisfaction.

	Jul-08 F2F	Jul-08 Tel
Reducing smells from sewage treatment works	4	4
Maintenance of sewerage pipes & treatment works	4	4.1
Minimising sewer flooding	4	4
Cleaning waste water properly before returning to the environment	4.1	4.2
Reducing pollution incidents	4.1	4

Base – all respondents

6.3.3 Perceptions of Severn Trent Water

Many aspects of our image had been damaged almost two years ago due to adverse media coverage linked to over charging and Ofwat investigations with statistically significant decreases experienced in July 2006. Many ratings stabilised in January 2007 and the last 12 months have seen that stability continue with many headline figures remaining constant.

Compared to 12 months ago, the perceptions that the company 'really cares about its customers' and 'provides high quality tap water' have both fallen slightly. In contrast, the perception that the company 'will try to keep prices at a reasonable level and give good value for money' has increased slightly.

Nevertheless we maintain favourable perceptions amongst customers for our core services of delivering high quality tap water, and sewage treatment. Additionally customers' overall satisfaction with the services we provide has remained high, yet again averaging above the 'satisfied' level.

Perception….	Jan 06	Jul 06	Jan 07	Jul 07	Jan 08	Jul 08 FTF
Really cares about its customers	3.6	3.4	3.5	3.4	3.4	3.3
Provides information about itself & its plans for the future	3.6	3.5	3.4	3.4	3.4	3.3
Provides high quality drinking water	4.0	3.9	3.8	3.9	3.8	3.9
Provides high quality, reliable sewage treatment	4.2	4.0	4.0	4.0	4.0	4.0
Provides good value for money	3.3	3.1	3.0	3.1	3.1	3.5
Cares for the environment	3.8	3.5	3.6	3.6	3.6	3.7
Provides good customer service	3.8	3.6	3.6	3.6	3.6	3.6
Leading water services company	4.0	3.8	4.0	3.8	3.8	3.8

The table above shows a three year trend of customers' perceptions of us. With the average (mean) score of customers' agreement with statements (one = strongly disagree, and five = strongly agree), a relatively stable trend accelerated negatively in July 2006, coinciding with adverse media coverage we received, linked to over charging and OFWAT investigations, and the wider Industry issue of water shortages. Recent waves of the research have shown little change in perceptions since then.

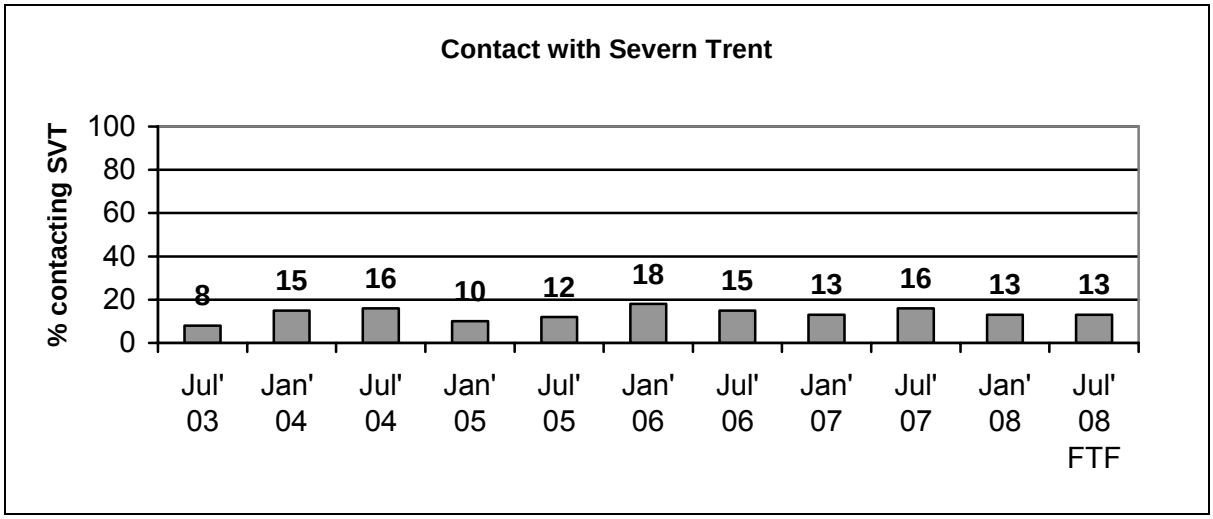
The issues surrounding the loss of water supply in Gloucestershire in July 2007 does not appear to have impacted the ratings to any great extent. Ratings of how we are perceived have shown almost no change in the last 12 months.

The level of overall perceptions in the Severn Trent Water brand is rated above a number of other brands including British Airways and Energy suppliers but remains just below Boots, Tesco and Marks & Spencer.

6.3.4 Contact with STW

Contact with us amongst those researched has remained relatively constant since the January 2007 tracking study (13%), as shown in the graph below. There has also been a fall

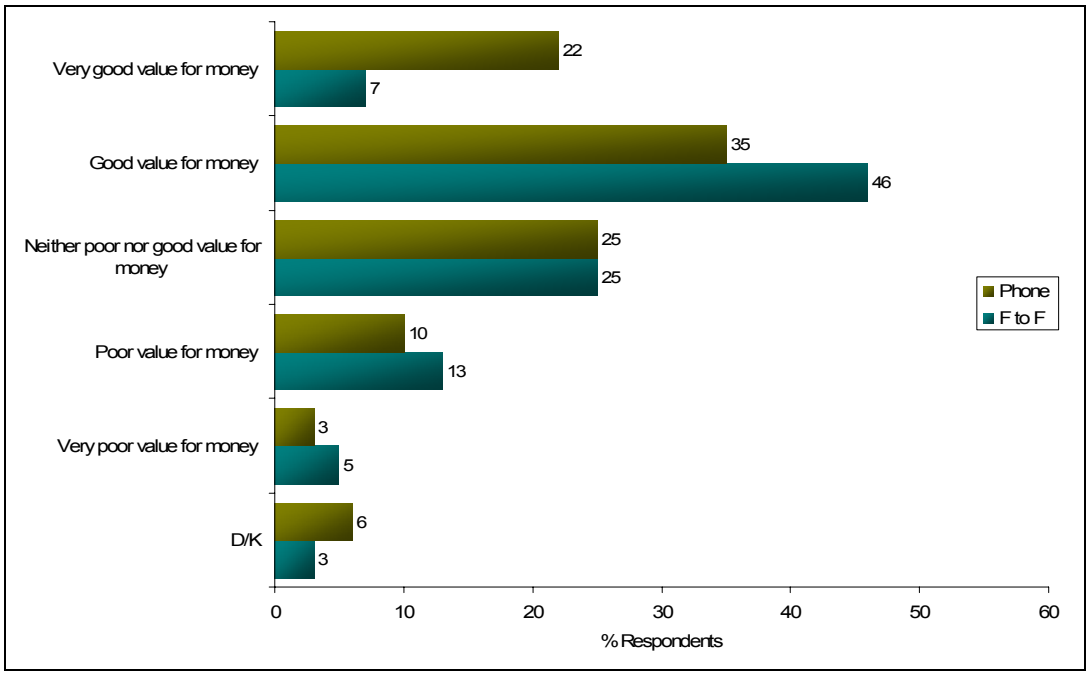
in the number of customers making repeat contact, falling to 27% over the same period. The vast majority of these repeat contacts were chasing the same issue.



Respondents have been asked over time about their most recent complaint or query and how well they felt we responded. In July 2008, 66% of respondents were either satisfied or very satisfied with the length of time it took to get through to someone who could deal with their query. Similarly, 67% of respondents had their query resolved to their satisfaction.

6.3.5 Value for Money and Affordability

Having informed respondents that the average daily charge for water and sewerage services in our region is 80 pence per day, or £292 a year, they were asked to rate the service in terms of value for money. The Figure below shows that over half said we provided good/very good value for money, with more CATI respondents saying this. A quarter of respondents said it was neither good nor poor value for money, so there are potential opportunities to reinforce the value for money message in order to promote our reputation.



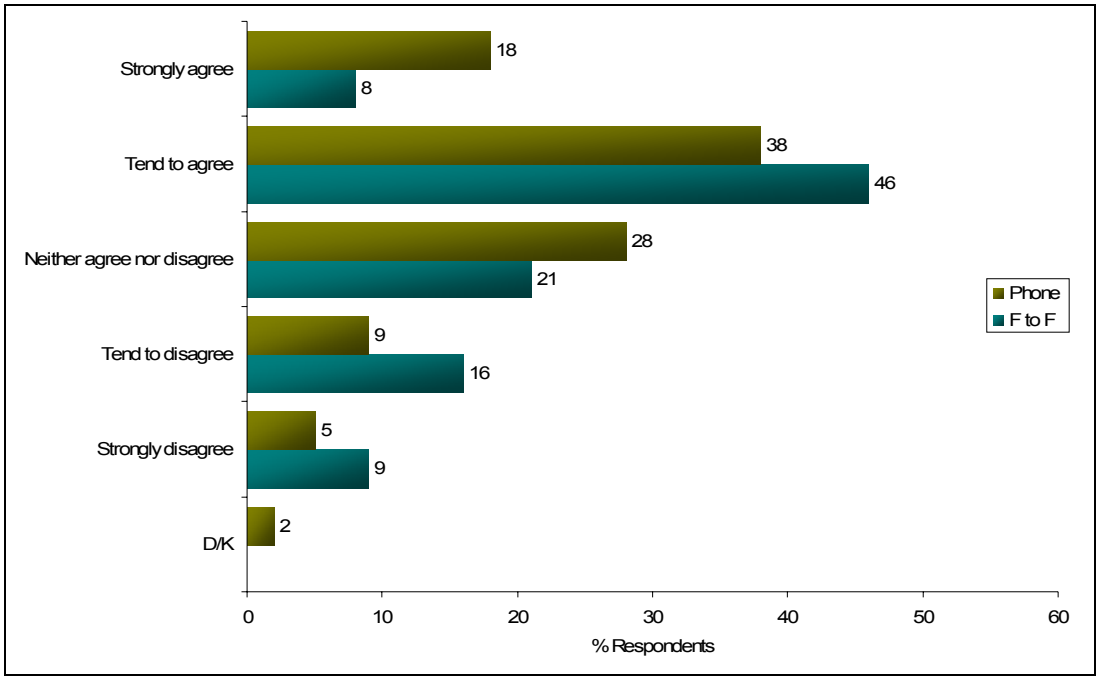
Mean value for money ratings for July '08 are compared with the previous five waves in the Table below. The results show that the CAPI approach provides ratings similar to those in

the past while CATI respondents have provided a higher rating which is statistically significant.

	Jan-06 %	Jul-06 %	Jan-07 %	Jul-07 %	Jan-08 %	Jul-08 F2F %	Jul-08 Tel %
Value for money	3.5	3.3	3.3	3.4	3.2	**3.4**	**3.7**

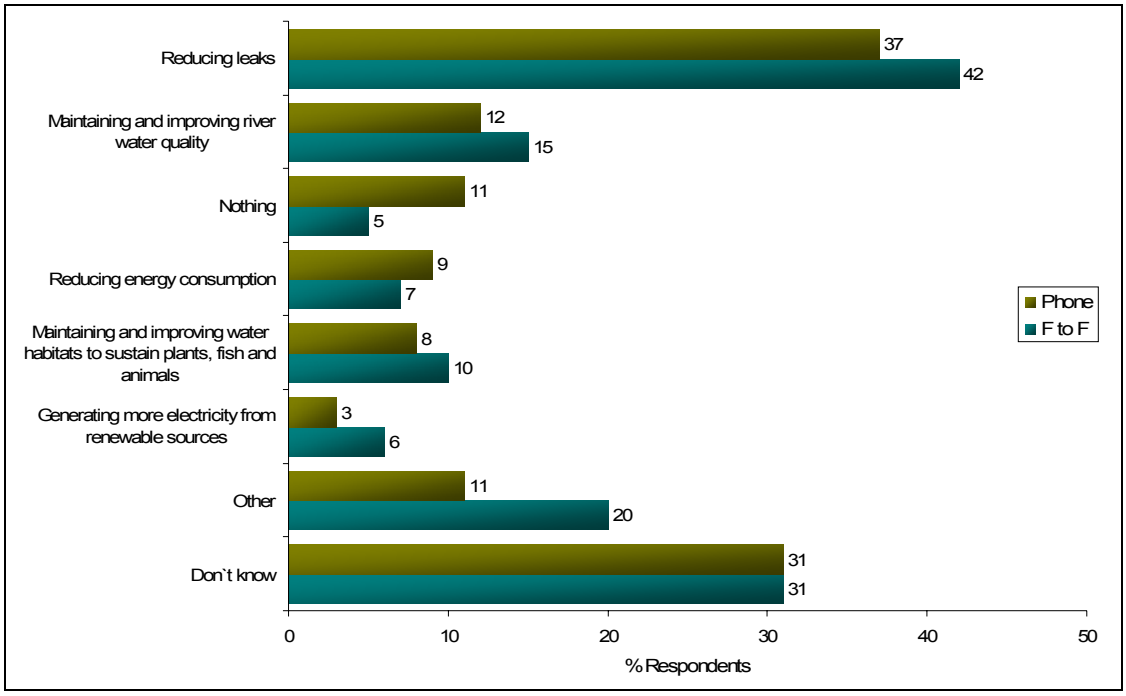
Base – all respondents
Red = statistically significant

In terms of affordability, the Figure below shows that over half of the respective samples said they agreed that the water and sewerage charges were affordable, with almost two fifths (18%) of CATI respondents saying they strongly agreed compared to less than one in ten of CAPI respondents. It is also worth noting that a quarter of CAPI respondents disagreed that their water bill was affordable compared to 14% of CATI respondents, and that these differences are statistically significant.



6.3.6 Environment and Water Conservation

Respondents were asked what we should be doing to ensure it is helping with environmental issues. Around two fifths of both samples, as shown in the Figure below, said that we should reduce leaks and over one in ten said that it should be maintaining and improving river water quality. Almost one third of respondents (31%) said they did not know what we should be doing which is perhaps surprising given the topical nature of environmental issues.



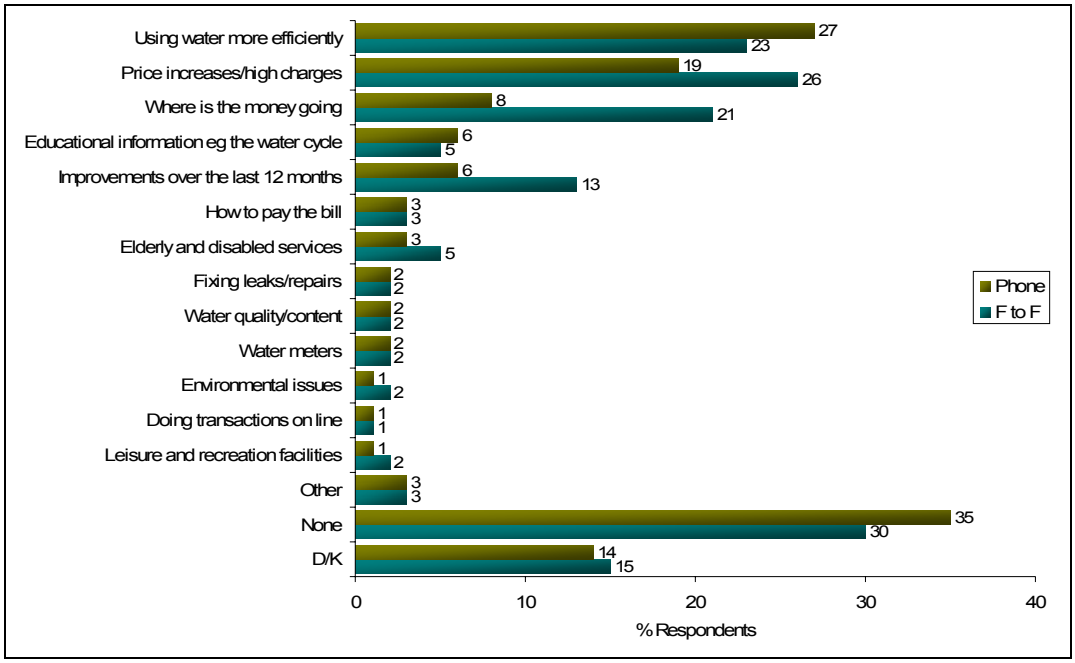
The acceptability of asking customers to conserve water has risen slightly for the 5th wave in succession to its highest level in 10 years. There has also been a significant increase in the number of people claiming to take showers not baths. This appears to be a large upward trend over time from 65% ten years ago to 76% in July 2008.

	Jan 06	Jul 06	Jan 07	Jul 07	Jan 08	Jul 08
Showers not baths	71	77	84	76	80	76
Turn off tap when brushing teeth or washing	63	54	59	52	62	68
Have water conservation device in cistern	20	16	26	27	24	9

The long term trend in the use of water conservation devices in the cistern also shows a long term rise but has shown a slight fall since January 2007 as the table above shows.

6.3.7 Communications

To understand how we might make our communications more relevant to customers, a question was asked around what aspects of the service they wanted to receive information about. The results in the Figure below show that about a quarter of all respondents wanted information about using water more efficiently. CAPI respondents seemed particularly interested in understanding more about 'why the prices are increasing', 'where the money is going' and improvements over the last 12 months. Although, there is nothing quantitative to benchmark this against, these findings back up recent qualitative work where customers have said they want more of this kind of information.



6.3.8 Media Coverage

Overall, just under a half of all respondents recalled seeing or hearing something about us, which is a significant increase on the previous three phases and is comparable to the July 2006 data.

	Jul-06 %	Jan-07 %	Jul-07 %	Jan-08 %	Jul-08 F2F %	Jul-08 Tel %
Media story recall	46	27	25	31	**49**	**46**

Base – all respondents

Comparisons with previous phases of research show that a significantly higher proportion of customers remembered hearing about us across the range of media channels as indicated in the Table below.

Table 13: Which media channels did you see/hear about STW?

	Jul-06 %	Jan-07 %	Jul-07 %	Jan-08 %	Jul-08 F2F %	Jul-08 Tel %
TV	38	19	19	24	**84**	**64**
Local newspapers	7	7	6	11	**23**	**34**
National newspapers	4	5	6	9	**27**	**22**
Local radio	4	1	2	6	**13**	**18**
National radio	3	-	2	4	**7**	**11**
Internet					**1**	**-**

Base – those who remembered see/hearing about STW

Of those who had seen or heard any stories about us in the media, a clear majority said they had done so on TV, with 64% CATI and 84% CAPI respondents saying this was the media channel where they had heard news about us. Local and national newspapers were the next most common mediums for customers hearing about us in the media.

When asked what the media story was about most respondents reported leakage as being the subject matter, which was followed by the Serious Fraud Office (SFO) and the Ofwat fine. Almost a half of the CAPI sample (47%) remembered the SFO/Ofwat fine coverage compared to just 24% of the CATI sample.

6.4 Conclusions on tracking research

Our customer satisfaction tracking research ensures that we are aware of our customers' key areas of concern, or areas where we need additional focus. The results of the last three years show that whilst customers are satisfied with the services we offer, they quickly reflect the impact of media reports; such as reports on issues that affect the wider industry (water supply shortages) and the environment (carbon footprint). We have a challenge of finding relevant and creative ways of communicating how good we are at delivering our core service and what good value our customers are getting for their water services.

7. Acceptability of drinking water

Our 2004 business plan proposed schemes to improve the taste and odour of drinking water, to be achieved by increased removal of total organic carbon (TOC), and schemes to reduce water hardness. Four schemes to reduce hardness and three schemes to improve taste and odour were included in the Final Determination.

Ofwat required us to "monitor the impact of these [taste and odour] schemes sufficiently to be able to demonstrate the cost and effectiveness of the measures taken – both in terms of change in water quality and change in customer satisfaction.… This evidence will be important for our consideration of any future schemes you may propose in the long term". We propose to monitor the impact on customer satisfaction of both the hardness and taste and odour schemes.

Two of the hardness schemes appear to be expensive compared to our customers' willingness to pay for hardness reduction. Our proposal is to complete two schemes (at Watery Lane and Newent) and to defer the remaining two schemes, until after reviewing post-commissioning customer perception data at the two commissioned sites.

In order to review the effectiveness of the taste and odour projects, a three-year chemical and biological quality sampling survey has been under way for a year and the first of the pre-commissioning customer surveys has been carried out. The treatment processes and distribution systems will not be fully optimised and ready for assessment of customer values until after September 2008, so results are not yet available.

Monitoring is being carried out at the three implementation sites and one comparison site (Melbourne) which was proposed in 2004 for improvement but not included among the three sites in the Determination.

The table below shows results on customer perception of taste from 2003 and from our pre-implementation surveys. The data is not presented in the same way as in the graphical presentation in Part C1 of our 2004 Business Plan. That showed the same relative positioning of the different treatment works but a wider dispersion than the average scores shown below. We consider the current presentation of the data to be the most accurate way to represent the comparative position.

The table shows that:

- Customer perception of taste at the proposed sites was below average in 2003.
- Perception of taste has improved and is now close to or above average at implementation sites and the comparison site.

The scores reflect operational changes to improve treatment, such as increased use of coagulant. As a result, total organic content of treated water has not increased as projected in our 2004 plan. There is, therefore, less scope to improve customer perception of drinking water at the sites where improvements are being implemented than was anticipated in our 2004 plan.

Customer rating of taste

	Average score out of a maximum of 5		% rating taste as unacceptable	
	2003	2007	2003	2007
Comparison sites				
Birmingham	4.2		4%	
Shelton	4		11%	
Bamford	3.9		16%	
Mythe	3.8		13%	
Strensham	3.8		16%	
Severn Trent average	3.9	4.0	12%	9.3%
Comparison site – proposed in 2004 for implementation but not in the programme				
Melbourne	3.7	4.0	14%	9%
Sites accepted for improvement				
Campion Hills		3.9		13%
Draycote	3.6	4.1	12%	8%
Ogston		4.2		7%

We included proposals in the DBP for further improvements in taste and odour but in view of the fact that survey results from our current schemes are not yet available, and in order to keep bills as low as possible, we have not included these schemes in our FBP.

8. Customer complaints

Reducing failures and speeding up response times

8.1 Our priorities

Our objectives are to:

- Reduce failures, such as sending customers incorrect bills or interruptions to supply, so reducing the need for customers to contact us.
- Offer a high speed of response and standard of service to those customers who do need to contact us including resolving as many customer needs at the first point of contact as possible.

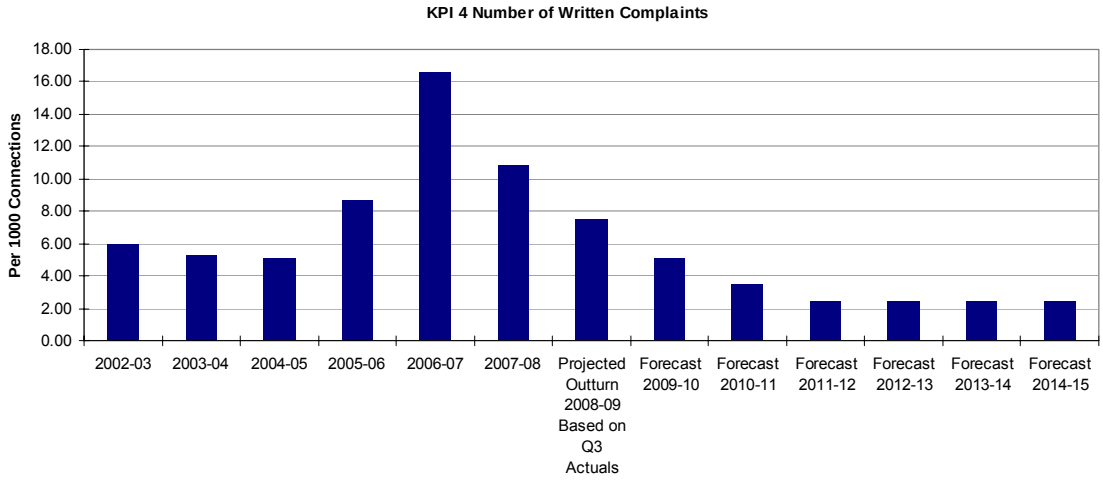
The key elements of our plan are to:

- Improving our quality and speed of response when customers contact us.
- Making improvements in the way we run our water and sewerage networks and billing systems, to minimise the need for customers to contact us due to service failures.
- Making changes which will increase the number of problems resolved at the first visit when customers need to contact us to report an issue.
- Increasing the range of channels for contact to meet customer needs.

- Introducing a new, consistent and powerful range of tools ("Safer, Better, Faster" – see B2) that will permit effective and meaningful improvements in processes.

8.2 Our improving performance

The graph below illustrates the extent of our improvement to date and our forecast performance on written complaints.



8.3 Our improvement activities

The improved performance seen in 2007/08, and which continues to be achieved in 2008/09, is the result of a number of process improvement initiatives. We expect that these will yield further improvements in future years thus allowing our rate of upward progress to be maintained.

The following improvements are currently taking place:

- Improved point of contact resolution through a programme of increasing the skills of our front-line agents.
- We are investing in additional web and voice self-serve solutions to increase the number of integrated transactions we are able to offer customers
- Continued investments in our current systems to improve efficiency and consistency of some business processes
- Reducing operational failures and speeding up response times through creating a root cause analysis team to investigate reasons why we receive written complaints.

The following benefits are expected after extending the approach throughout the company:

- Reduced written complaints through keeping customer promises and delivering service level agreements.
- Reduced abandonment of customer calls by reducing the number of calls driven by not meeting promises.
- Reduced costs by increasing "Right 1st Time" volumes.
- Reduced leakage through early identification and correct prioritisation.

Further details on the consumer service strategy are contained within Chapter B6.

9 Conclusions about customers' priorities

Our overall strategy is set out in Part A, and Chapter B6 sets out proposed service improvements and their justification in cost-benefit terms. Chapter C8 sets out our approach to cost-benefit analysis. However, the overall conclusions on customer priorities and their implications for our plan are:

- Our customer tracking research and the national research show the high priority given to safe and reliable drinking water. This is reflected in our programme to maintain high water quality compliance and in our programme to increase water supply resilience.
- The resilience programme is also supported by the results from the WTP survey and by the results of the CCWater research in the Gloucester area following the flooding in 2007.
- Customers placed a high priority on leakage – this is a key part of our plans for balancing supply and demand.
- The national customer research supports our objective of achieving stable bills.
- The WTP results show customers are willing to pay for improvements – this supports our inclusion of service improvements, rather than providing for lower bills.

Water service improvement programme

Our resilience programme will provide the following benefits:

- 1.4 million people who are currently dependent on a single source (nearly 20% of customers) will benefit from an alternative source if their normal source of water fails.
- A further 0.6 million people (8% of customers) who are currently dependent on a single pipe will be provided with an alternative piped supply. We will reduce the likelihood of failure by:
    - Protecting ten treatment works at risk of flooding from a 1 in 200 year flood event.
    - Removing a single point of failure from one critical site.
    - Providing resilient power supplies at 20 sites.

Other service improvements included in our programme are:

- Separation of joint supply pipes for 4,000 customers.

Our Sewerage service enhancement programme will provide;

- Reduce environmental risk arising from power failure to 12 of our largest sewage treatment works
- Reduced likelihood of failure by protecting 123 treatment works and pumping stations at risk of flooding from a 1 in 75 year event.
- Reduce the potential for odour nuisance at 54 treatment works.
- Reducing the number of pollution incidents by 63 per year, as a result of improved monitoring and separating dual manholes.
- Addressing over 1,200 internal flooding problems and over 1,000 external flooding problems.

The table below shows that all our enhanced service proposals yield substantial net benefits.

Enhanced service – summary of costs and benefits (£m)

	Capex	Opex	Net benefit
Water			
Resilience: WTW and Strategic Grid	124.7	0.2	2,585.2
Resilience: Borehole Resilience	18.0	0.0	838.6
Resilience: Single Points of Failure	4.2	0.0	79.6
Resilience: Flooding Risk Mitigation	5.9	0.0	584.8
Resilience: Power Risk Mitigation	12.8	0.0	1,244.6
Common Supply Pipe Separation	8.8	0.5	957.8
Sub Total	174.3	0.8	6,290.7
Sewerage			
Nuisance (Flies and Odour)	7.4	0.0	37.9
Resilience	11.3	-0.8	10.7
Sewer Flooding	136.7	0.1	163.3
Pollution Strategy	9.4	0.0	14.6
Dual Manhole Separation	3.9	0.0	1.8
Sub Total	168.6	-0.6	228.3