



South West Water's Final Business Plan: Part A (Company Strategy)

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1 Executive Summary

Our Draft Business Plan (DBP), published in August 2008, proposed targeted improvements to the services we provide to our customers and a modest number of quality improvements proposed by our regulators for an average bill increase of 1.4% per annum before inflation.

We have undertaken a comprehensive review of our proposals for this Final Business Plan (FBP), primarily as a result of:

- Feedback from customers and the Consumer Council for Water
- Feedback from Ofwat and the Reporter
- Further inputs from the Environment Agency, the Drinking Water Inspectorate and Natural England
- The uncertain economic climate
- Further analysis and refinement of our work.

Overall, our final plan reduces prices and investment requirements compared to the draft whilst recognising the need for a higher cost of capital:

- The average annual bill increase, before inflation, is down to 1.2% from 1.4%. This is an overall increase of about £5 per year in real terms, or £27 over the five years from 2010 to 2015;
- Capital expenditure has been reduced to £764m from £813m
- Our plan provides for a cost of capital of 4.8%, compared to 4.6% in the draft but significantly lower than the 5.1% allowed at the last review.

The main drivers of these price increases are the reduced revenues and increased operating costs experienced during the current period, which have a £36 impact on prices over the coming five years.

However, our new investment and cost projections for the 2010-15 period are mitigated by a very challenging operating efficiency target of 2.4% per year and a 6% capital efficiency challenge over the period. Taken together, these reduce average bills by £9 over the five year period.

We have very significantly constrained our plans reflecting customers' priorities. Customers do not want services to deteriorate. It would have been possible to put forward a cost beneficial plan with higher investment levels, but instead we are proposing a capital programme that is 15% lower in real terms, than in the current period.

We have challenged potential cost increases and only included a fraction of these in the final plan on the basis that we will find ways to mitigate them.

Our plan includes:

- A limited but essential drinking water quality programme where there is evidence of raw water deterioration, to improve taste and reduce discolouration
- A 32% reduction in properties affected by low pressure
- A 17% reduction in the number of customers experiencing discoloured water, assisted by our focused mains rehabilitation programme
- Enhanced odour control at 14 treatment works
- A further reduction in properties at risk of sewer flooding
- A 50% reduction in the most serious pollution incidents
- An 18% reduction in operational carbon emissions

- 
- Protection and enhancement of Sites of Special Scientific Interest
 - Continued development of our three complementary schemes that help vulnerable customers with payment difficulties: WaterCare, WaterSure and Restart.

Given current economic conditions, our strategy of constraining capital investment is important, as it reduces the impact on bills at a time when customers are least able to afford higher charges and lowers the funding requirements for the company when the cost of new financing is at a premium.

We have developed an integrated plan, drawing a difficult balance between conflicting objectives. However, of paramount importance has been the focus on the needs and expectations of our customers. It is essential that the assets, in which our customers have invested over recent years, that have delivered outstanding environmental performance, are not allowed to deteriorate. This would be the worst possible outcome for customers. This plan represents a shift in focus from the construction of new assets, to more sustainable operations as we start to address the demands of climate change.

2 Introduction

Following the restructuring and upgrading of our water supply and waste water services since 1989, we are now achieving some of the highest environmental and quality performance standards in the UK. For the next 25 years, our key objectives are improved customer service and making our operations more efficient and sustainable.

We are also starting to deal with the effects of climate change which will challenge security, reliability and service to customers over the longer term.

Our proposals for the next Periodic Review period have been informed by:

- Our Strategic Direction Statement (SDS) published in December 2007
- Consultation with customers, stakeholders and regulators
- Analysis of responses to our DBP
- Ofwat's Baseline Assessment
- Evolving Government policy for the water industry.

We have developed a strategy to strike the right balance between investing to improve our services, financeability, efficiency and, importantly, customer affordability.

We have developed asset management models, assessed future service needs, customer priorities and requirements in response to legislation. We have taken into account external issues such as responding to the requirements of competition. The Pitt Review¹ recommendations and other cost drivers are addressed.

We are taking a number of proactive steps to adapt to and mitigate climate change effects, including comprehensive carbon emissions measurement and minimisation, implementing energy efficiency projects and assessing and protecting infrastructure robustness.

Our existing programmes for customer support on bills will continue and we will be implementing research into innovative tariffs in order to encourage greater awareness of the importance of water conservation and to assist affordability. Programmes of improvement for all these issues are included in the plan, supported by Willingness to Pay (WtP) evidence and Cost Benefit assessments.

Our plan has been developed as a coherent whole and is supported by extensive customer research. All known costs are in the plan, mitigated by demanding efficiency targets and a reliance on innovation to provide our services more sustainably and efficiently. We have actively constrained our improvement proposals for the next five year period, in order to deliver a sustainable price profile.

Our aim is to be consistently among the most efficient and effective companies in the industry. Efficiency has progressively improved in recent years and further improvements are planned for the coming period.

¹ The Pitt Review: Lessons learned from the 2007 floods

Figure 2.1 summarises the main strategies and outputs in our plan and their associated timescales.

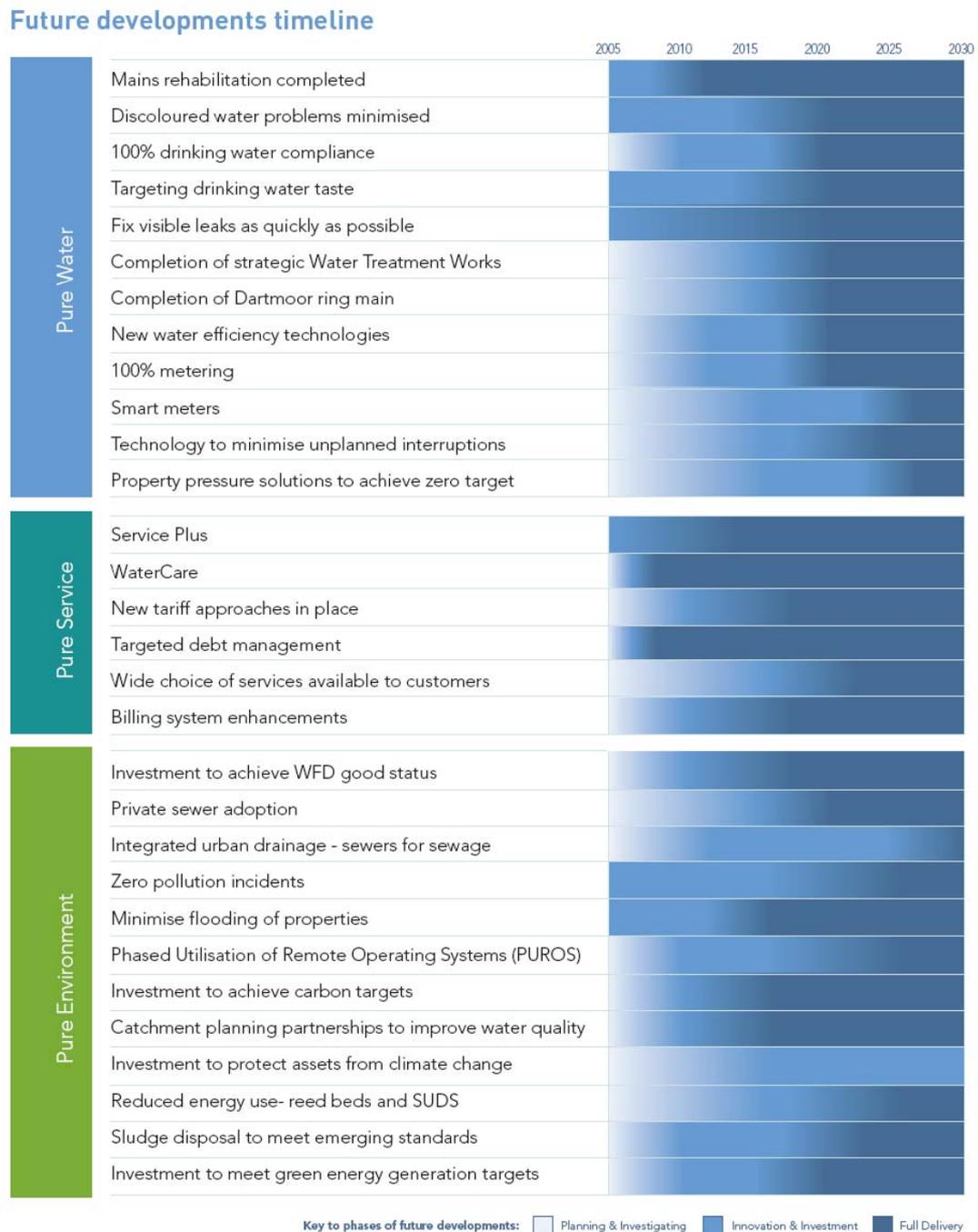


Figure 2.1: Timeline of Pure Water, Pure Service and Pure Environment issues developed from our SDS

3. Overview of the final plan

3.1 Our strategy, outputs and delivery

Our strategy centres on delivering pure water, pure service and a pure environment, informed by our customers' needs and their requirements. The strategy components are:

Pure Water

- Provide the region with the assets it needs to deliver high quality drinking water
- Maintain our assets to sustain and enhance the recent quality improvements
- Operate our assets in the most effective and efficient manner
- Become a major contributor to regional environmental partnerships to implement catchment based, sustainable improvements for water quality and quantity for the longer term.

Pure Service

- Deliver high quality water and sewerage services that satisfy our customers' priorities
- Embrace and develop innovative technology and techniques to deliver water and waste water services as efficiently as possible
- Target zero pollution incidents – our long term aim for waste water services
- Undertake a proactive campaign to improve customer understanding of the role of sewers and treatment systems to prevent avoidable failures
- Improve our customer experience through industry leading contact and account management.

Pure Environment

- Undertake a limited number of waste water service improvements, following the comprehensive environmental improvements delivered since 1989
- Provide a series of environmental enhancements to benefit the natural biodiversity of the area we serve.

These principles have informed the detailed development of our FBP.

Our focus for the period from 2010 to 2015 will be:

- A requirement for higher capital maintenance to support service improvements and the maintenance of our assets in line with the UKWIR Common Framework principles. Adequate asset maintenance is essential to ensure that our services to customers and environmental performance do not deteriorate from their current high levels
- Carrying out a focused and limited programme of water quality and environmental programmes as specified by our quality regulators, the Drinking Water Inspectorate, the Environment Agency and Natural England
- Undertaking a wide range of studies to define longer term environmental obligations and the investment needed to adapt our infrastructure to deal with climate change pressures, in the most effective manner for our customers.

3.2 What's in the plan for customers?

We have highlighted the key messages coming from our customer research and consultation and intend to concentrate on the key service areas of taste and discolouration of drinking water; controlling leakage; reducing sewer flooding and avoiding supply interruptions.



We plan to invest in an updated billing and contact handling system, which alongside our new inbound contact handling partner and our ServicePlus approach will make it easier for customers to talk to us and help us to respond to their queries at the first point of contact and deal with them as efficiently as possible.

We understand the difficulties some people have with water and sewerage bills and are implementing our best practice approaches to affordability and debt management, which includes the continuation of our unique and innovative WaterCare programme, highlighted by Defra and the Water Minister as an example for the rest of the industry to follow.

We are proposing a stable level of service for the standard DG measures, which are already at a high level, but will always be looking to enhance our performance through improved processes.

Service enhancements are proposed only in those areas of service that customers have told us are very important to them and for which they have expressed willingness to pay – the appearance of drinking water, sewer flooding and waste water treatment works odour. We have included proposals for service enhancement in these areas in our final plan.

PUROS is an integrated water and wastewater improvement programme that delivers sustainable cost reductions and better service for our customers. Based on recent successful pilot trials in the last twelve months, we have defined a full programme to be undertaken through the plan period.

Our PUROS vision will deliver for customers:

- Sustainable cost reduction
- Enhanced service experience, through reduced service failures
- The right people in the right roles.

This will be delivered by:

- Remotely managed networks and assets
- A flexible, mobile enabled, multi-skilled workforce
- Central control of our people, our assets and our information.

We have undertaken a comprehensive review of asset resilience to the increasing risks of flooding in recent years locally and nationally. Our final plan addresses the recommendations of the Pitt Review in which Sir Michael Pitt observes that 'higher levels of protection for critical infrastructure are needed to avoid loss of essential services such as water and power'.

Our approach to flood resilience follows Ofwat's guidance in 'Setting price limits for 2010-15: Framework and approach' which states that 'long-term asset planning should take appropriate account of emerging guidance and evidence on the impact of climate change on assets and service delivery', together with more specific guidance in Ofwat's (Halcrow) 'Asset resilience to flood hazards: Development of an analytical framework', issued in June 2008.

The following Table 3.1 shows the planned customer benefits that are included in the final plan, building on our SDS and draft plan intentions.

CUSTOMER BENEFIT MATRIX 2010 - 2015		Enhanced/ new billing system	Web	Business Accounts on Line extension	CRM	Workflow	Credit Analytics	Business Intelligence	Sewerage investments	Drinking water investments	Customer messaging	Computer Telephony integration	Tariff Trials	Water efficiency device sales	WaterCare and Restart	Special Assistance Fund	CABx sponsorship	Customer culture programme
		Bills and affordability	Customer influencable tariffs	✓											✓			
Enhanced water efficiency support														✓				
Help with switching to a meter	✓				✓										✓	✓		
Help with managing bills	✓		✓				✓						✓	✓	✓			
One off hardship help																✓		
Help to debt advice agencies																	✓	
Enhanced management of debt						✓	✓				✓						✓	✓
More personalised and segmented recovery processes							✓											
Extended business customer advice			✓	✓														
Water and sewerage services	Provision of services to meet customers' requirements				✓			✓			✓							
	Reduced times to repair visible leaks					✓				✓								✓
	Improved working on assets and in the street							✓	✓	✓								✓
	Improved new connection process		✓			✓												
	Reduced flooding							✓	✓									
	Reduced discolouration							✓	✓									
	Fewer planned interruptions							✓	✓									✓
	More and better communications when there's a problem		✓		✓	✓					✓							✓
Customer care	Individualising the customer experience		✓		✓		✓				✓							✓
	Access to priority services				✓												✓	
	Quality complaints and contact management				✓	✓		✓										✓
	Right first time				✓	✓		✓										✓
	Reduced causes to complain	✓			✓	✓	✓	✓	✓	✓	✓							✓
Customer contact	Clearer bill presentation	✓																
	Enhanced call centre experience		✓		✓			✓				✓						✓
	Customer choice - IVR, self service, web self service, paperless bills	✓	✓															
Cost	Reducing cost to serve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓
Competition	Competition	✓	✓	✓	✓													
Metering	Improved metering processes	✓	✓		✓	✓												✓

Table 3.1 Customer benefit matrix

Table 3.2 sets out the investment projects included in our final plan which contribute to our SDS objectives, their capital costs and impact on customers' average bills in 2014/15.

Projects in the
2010-2015 period
contributing to our
long term strategy

		Water								Service						Sewerage															
		Targeting capital maintenance	Drinking water quality programm	Lead pipe replacement trial	Customers communication pipes	Strategic supply crossings and rationalisation	Pressure solutions	Reservoir safety and spillways	Mains rehabilitation	Catchment management and MIREs	Meter customers on request	Water efficiency projects	Resilience including flooding	WaterCare	PURoS	Customer billing and contact systems	Energy efficiency and generation	Environmental – abstraction/screens	Saline Intrusion protection	Sludge digestion improvements	Sewer flooding reduction	Integrated Urban Drainage Management pilot schemes	First Time sewerage	Shellfish and Bathing water investigations	Groundwater protection	CROW/SSSI schemes	Event Duration Monitoring	Discharge flow improvements	CHP Investigations	Priority substances and endocrine disrupter investigations	
Pure Water	Mains rehabilitation complete								✓																						
	Discoloured water problems minimised	✓	✓		✓				✓																						
	100% drinking water compliance	✓	✓	✓	✓				✓	✓																					
	Targeting drinking water taste	✓	✓		✓				✓	✓																					
	Fix visible leaks as quickly as possible	✓			✓																										
	Completion of strategic Water Treatment Works					✓						✓																			
	Completion of Dartmoor ring main					✓						✓																			
	New water efficiency technologies											✓																			
	100% metering										✓																				
	Smart meters																														
Technology to minimise unplanned interruptions	✓				✓		✓					✓			✓																
Property pressure solutions to achieve zero target							✓																								
Pure Service	ServicePlus														✓	✓															
	Watercare										✓	✓		✓																	
	New tariff approaches										✓	✓		✓		✓															
	Targeted debt management											✓		✓		✓															
	Wide choice of services available to customers											✓		✓		✓															
Pure Environment	Billing system enhancements															✓															
	Investment to achieve WFD good status	✓							✓									✓						✓	✓	✓	✓	✓	✓	✓	
	Private sewer adoption																														
	Integrated urban drainage management - sewers for sewage	✓																	✓		✓	✓									
	Zero pollution incidents	✓										✓		✓							✓	✓	✓	✓	✓			✓	✓	✓	
	Minimise flooding of properties	✓						✓		✓		✓						✓		✓							✓	✓		✓	
	PURoS (Phased Utilisation of Remote Operating Systems)														✓						✓										
	Investment to achieve carbon targets	✓								✓		✓			✓		✓													✓	
	Catchment planning partnerships to improve water quality									✓																					✓
	Investment to protect assets from climate change							✓		✓		✓										✓	✓								
£	Capital cost £m	24.80	0.89	12.24	11.40	0.40	20.30	24.96	10.00	17.39	1.00	31.98	0.00	17.10	26.01	9.99	2.69	3.96	3.58	2.88	2.97	5.23	11.20	0.72	4.14	2.01	7.80	0.06	0.68		
	2014/15 effect on customer's bills	£2.64	£0.05	£1.03	£1.00	£0.04	£1.71	£1.47	£0.58	£2.38	£0.51	£3.30	£0.22	£-4.38	£6.70	£-2.51	£0.39	£0.37	£0.08	£0.02	£0.39	£0.35	£1.31	£0.05	£0.33	£0.31	£1.10	£0.01	£0.06		

Table 3.2 Projects contributing to our long term strategy

3.3 Price limits and impact on bills

Our final plan includes average bill increases of around £27 over the five year period from 2010 to 2015, at 2007/08 prices. The detailed components are:

- An average annual bill increase of 1.2% before inflation
- An average K factor of 3.4%, with 7.1% in 2010/11 despite a lower cost of capital than at PR04
- A level Regulatory Capital Value (RCV) due to a smaller quality investment programme than at previous reviews
- The identification of opex efficiencies equivalent to 2.4% per annum
- A capital efficiency challenge of 6% over the period

These K factors are required due to higher operating costs and lower revenues between 2005 and now. Our proposals for the period 2010 to 2015 reduce average bills by £9 at 2007/08 prices over the period.

80% of our customers preferred a smoothed change in prices in our research and 88% in the national research.

At the DBP stage we smoothed the K factors, at a cost to the average K of 0.9% per annum. Deflation is now forecast in 2009/10, which would raise the value of K in 2010/11, but is likely to be followed by higher inflation. To mitigate this, we have assumed a smooth RPI over the 2009/10 to 2014/15 period in our final plan. Customers will see a similar price increase in each year. We will have lower revenues at the start of 2010 to 2015 and higher revenues by the end. We do not need to smooth K factors in our FBP in order to give customers the price profile they prefer, because of this unusual economic situation.

The average household bill (in 2007/08 prices) is forecast to increase by £27 over the five year period of the plan; from £454 in 2009/10 to £481 in 2014/15. This compares to a 2014/15 value in the draft plan of £496. The components driving this increase, with variances from draft to final plans are shown in the following Table 3.3.

Drivers for the changes in average bills, 2007/08 prices	DBP £	FBP £	Var. £
Average bill in 2009/10	462	454	-8
Impacts from 2005-2010:			
Higher costs than PR04 assumed - primarily energy	29	15	-14
Lower revenues – reduced demand from metered customers	21	27	6
Out-performance returned to customers	(4)	(6)	-2
Net effects 2005-2010 on PR09 price setting	46	36	-10
Proposals for 2010-2015:			
Investment in Quality and Enhanced Service Levels	15	8	-7
Investment in Capital Maintenance and Supply/Demand	15	24	9
Accounting factors – capital charges	7	(3)	-10
Tax	6	5	-1
Efficiencies – operating	(21)	(20)	1
Efficiencies – financing	(40)	(34)	6
Revenues – including new customers, savings by metered customers and demand	(11)	(1)	10
Higher operating costs – rates, bad debt, pensions and energy	0	12	12
Impact of smoothing out price increases (total paid by customers for the period 2010-2015 is the same)	17	0	-17
Net effects for the 2010-15 period on PR09 price setting	(12)	(9)	3
Total effects on bills for 2010-2015	34	27	-7
Average bill in 2014/15	496	481	-15

Table 3.3: Components driving average bills in the period from 2010 to 2015



A significant element of the movement in average bills is due to lower revenue in the current review period, coupled with cost increases; principally energy. Without these effects, bills would have been forecast to reduce over the period from 2010 to 2015.

The movement in bills will vary widely for different customers, depending on whether their services are metered and how much water they use. We expect that 76,000 customers who currently pay an unmeasured bill, based on the old rateable value of their property, will elect to have a meter installed and experience a sustainable reduction in charges over the period.

Proposed price changes, before inflation, over the five years from 2010 to 2015 can be summarised for three groups of domestic customers:

- 70% of our customers who will be on a metered bill by 2010 for water and sewerage services will experience a bill increase of 1.7% per annum over the period
- The forecast 76,000 switchers, a further 11% of customers, will on average experience a £420 reduction in their bill when they switch
- The remaining 19% of customers with unmeasured services will experience average bill rises of 7% per annum, although these customers also have the option to switch free of charge to a metered supply.

3.4 Planned investment to benefit customers and the environment

Based on the analysis of our longer-term priorities undertaken for our SDS, we have developed for the period from 2010 to 2015 a plan that will improve customer service and deliver sustainable operations. The plan has the following features:

- The top customer priority of improving drinking water quality is a key feature of this plan, so we are proposing a small clean water quality programme where there is evidence of raw water quality deterioration. These additional processes will also deliver significant benefits for customers through improved water taste and reduced discolouration. We also propose a small and focused mains rehabilitation programme for improved aesthetic water quality
- The implementation of our PUROS project. Its overall benefit will be to improve the service we give to our customers and our efficiency
- To maintain stable serviceability, increased capital maintenance is necessary. We consider there is clear evidence of 'Clean Sweep' reinvestment needs but these have been constrained by our application of the UKWIR Common Framework methodology, cost benefit analysis and due to customer price sensitivity
- Preparations are made for climate change derived impacts on the services we provide
- The Environment Agency and the company have tested the National Environmental Programme for sustainability at project level. There are relatively few schemes but many studies of bathing and shellfish waters to be undertaken before 2015, which significantly raise the possibility of an IDoK being required in the plan period
- Catchment management interventions offer best value, but we will have to bridge the gap with the uprating of several water treatment works before 2015. In parallel, seven catchment scale projects have been included to improve the quality and quantity of raw water over the longer term.

The capital programme in this final plan reflects the decisions made by the Environment Agency on the scope of the National Environmental Programme and other specific advice received from the Drinking Water Inspectorate and Natural England. It also funds stable serviceability and addresses our customers' priorities, as expressed through willingness to pay surveys and cost benefit assessments. The capital programme included in this plan is summarised in Table 3.4 below, followed by two pairs of bar charts to compare investment in the current price period (2005-2010) to the next (2010-2015) at final and draft plan stages:

Investment category	Costs £m 2007/08 prices		Comments
	2005 - 2010	2010 - 2015	
Water Supply	526.7	345.9	
Quality	250.9	49.4	Completion of the Section 19 Undertakings for water mains rehabilitation, which require PPRA surveys after 2010. Delivery of projects approved by the Drinking Water Inspectorate and work required for SEMD
Supply/Demand	96.0	34.4	Increasing water efficiency has allowed deferral of expansion of our water supply systems. Reducing meter optants
Capital Maintenance	179.8	227.0	Leakage control has been transferred into the capital maintenance category, asset maintenance is increasing
Enhanced Service	0	35.1	Mains rehabilitation and discolouration, 'hot spot' action on discoloured and/or poor tasting water; PUROS for improved system operation, efficiencies and customer service
Waste Water	379.6	466.4	
Quality	103.9	48.7	Limited new obligations related to shellfish water quality and the new EU Bathing Water Directive and work required for SEMD
Supply/Demand	56.6	102.9	Increase is primarily due to new development, flooding and Integrated Urban Drainage.
Capital Maintenance	208.3	297.1	Renewal of assets, particularly those linked to the £1.5bn investment in Clean Sweep implemented since 1989
Enhanced Service	10.8	17.7	Accelerated progress to reduce internal flooding of properties by sewage and improved odour control at sewage treatment works.
2010-2015 Efficiencies		(47.9)	Because of customer sensitivity to bill levels, we have targeted the delivery of significant capital efficiencies in our Final Business Plan
Programme totals	906.3	764.4	

Table 3.4: Capital investment comparisons, £m 2007/08 prices

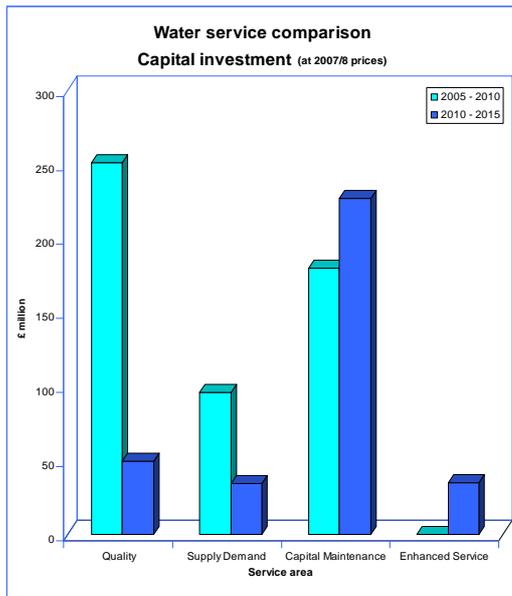


Figure 3.1:
Water service comparisons (final)

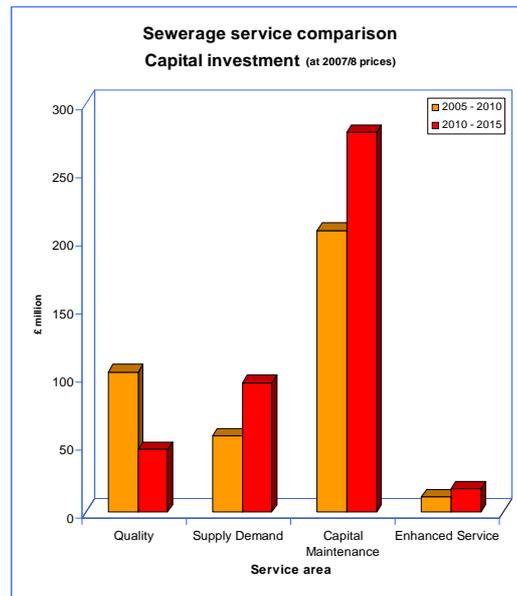


Figure 3.2:
Sewerage service comparisons (final)

For comparison with the draft plan, the corresponding tables are given below. 2005-2010 datasets reflect adjustments to the capital investment plan for 2008/09 and 2009/10. Draft to final plan changes on quality reflect decisions now made by the quality regulators; supply/demand and maintenance changes are a combination of reallocations and further work completed since the draft plan submission.

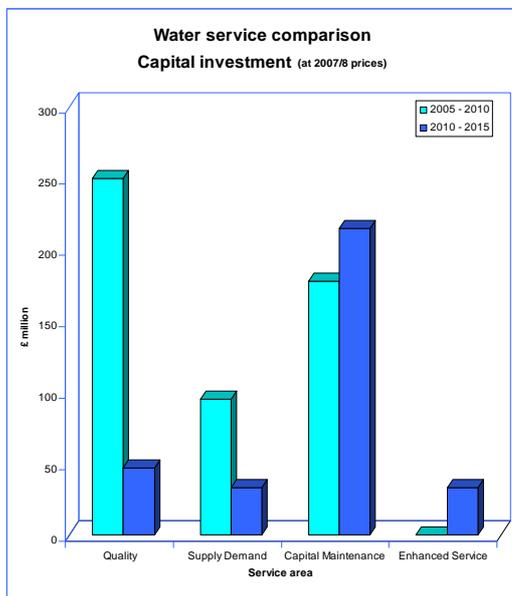


Figure 3.3:
Water service comparisons (draft)

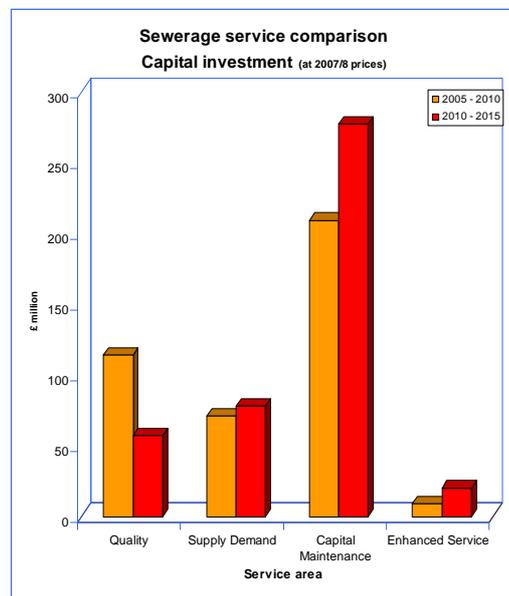


Figure 3.4:
Sewerage service comparisons (draft)

3.5 Reconciliation to our Strategic Direction Statement

Based on the long term analysis undertaken for the SDS, our final plan proposes interventions for the period from 2010 to 2015 based on a much longer term view of resource adequacy, asset condition and renewal requirements, growth in demand and uncertainties such as climate change effects. This is a significant change compared to previous reviews, which projected forwards five years in detail and ten years in outline. As a result we consider this plan is anticipating future trends better and giving clearer indications of risk and issues to be managed up to 2015.

Additional obligations reflected in the longer term strategy include further six-year cycles of the Water Framework Directive after 2015, its maritime based equivalent for coastal, estuary and offshore issues, the Maritime Framework Directive, and development of other environmental legislation for shellfish, migratory fish protection, habitats, biodiversity and soil protection

Since publication of our SDS in December 2007, Defra has published 'Future Water', its statement of obligations for regulators and the water industry.

Following publication of the Pitt Review, a Floods and Water Bill is in preparation with recommendations for policy changes for the management of flooding and surface water drainage.

Our SDS themes and proposals are supported by the published policy documents. This FBP confirms and reinforces the SDS messages. The timing of delivery for projects over the next 25 years reflects the results of our customer research, consultation on our SDS and cost benefit analysis.

3.6 Response to the Ofwat baseline

We have reflected comments in the draft baseline published by Ofwat and taken a number of actions in preparing our FBP. Discussions with Ofwat focused around:

- How we could better present our plan to assist the AMA process
- Taking into account Ofwat views on allocation between cost categories in our FBP
- How the CIS baseline process could take account of the constraints we had already placed on our capital programme due to price sensitivity, and how it could take into account the size of the past quality programme on sewerage non-infrastructure
- Providing additional information on supply/demand contributions in our FBP and demonstrating why the contributions we receive, and new development capital expenditure, are lower than the industry average
- Identified exceptional items of capital maintenance and explained why these costs are not reflected in historic averages, suggested the necessary outputs for monitoring their delivery and explained why they are not suitable for AMA and stable serviceability assessment as appropriate.

3.7 Summary of changes from draft to final plans

The key factors we have considered in preparing our FBP include:

- Customer sensitivity to existing bill levels – we have reflected this in our final plan.
- Further cost and revenue pressures (such as business rates) have emerged since our draft plan; as a result, we have further constrained expenditure. We followed a strict cost benefit rule to any service enhancements in the final plan

- We have applied capital expenditure constraints to our overall capital programme to prevent cost pressures causing it to be higher than our draft plan.
- This resulted in some cost beneficial proposals being postponed until beyond 2015 and with us carrying a greater burden of risk where there were uncertainties that affect future maintenance needs, such as from the impact of climate change on sewerage assets
- Stakeholders generally supported our DBP proposals. Stakeholders particularly supported our catchment management proposals, investment in integrated urban drainage pilots, a mains rehabilitation programme focussed on reducing discoloured water and taste contacts, our approach to carbon management and climate change resilience and our approach to affordability through WaterCare and water efficiency.
- We have reduced our integrated urban drainage plans due to price constraints, and assumed a local authority contribution in response to Ofwat's draft CIS baseline
- The final Quality programme supported by the Quality Regulators has been included in the FBP. All of these schemes have reasonable benefits compared to the costs, or are low cost investigations where the long term benefits and costs can be better quantified following their completion
- The results of the national joint PR09 research are largely consistent with our own research, in particular the reluctance on the part of consumers to delay drinking water quality improvements or accept additional leakage in return for a reduced price increase.
- The way the research was carried out limited its relevance to our FBP, in particular the presentation of the impact of K smoothing in 2014-15 as part of our base sewerage maintenance costs
- We reviewed and reanalysed the whole of our capital expenditure programme following the DBP to take account of:
 - Known issues identified by us and mentioned as areas we would review in the DBP
 - Updates of costs to be consistent with the Final Cost Base submission that accompanies this plan rather than the Draft Cost Base Submission from April 2008
 - Issues raised and agreed with our Reporter to be updated and audited for the FBP
 - Ofwat feedback on our DBP.

We have analysed our capital programme and identified a scope for capital efficiencies that we are targeting to deliver between 2010 and 2015. Our awareness of the sensitivity of customers to bill levels has encouraged us to challenge ourselves as to the scope of efficiencies, without taking excessive risks to the effective delivery of service levels.

Our FBP has been a difficult balance between meeting service aspirations and ensuring that prices are as low as possible in the long term. Where enhancement capital expenditure, such as mains rehabilitation, has been included in our business plan we have ensured that it offers the best available value to customers, is cost beneficial and wherever possible (as with PUROS) contributes to lower customer bills by 2015.

Because of the thorough approach we have taken to achieving the right balance for customers and stakeholders for 2010-2015, we believe that the capital expenditure baseline should equal our post efficiency FBP capital programme.

3.8 Innovation based on sustainability principles

Over the last few years, we have won a number of awards for our innovative approaches such as:

- 2004 - Green Apple Environmental Awards, Croyde wastewater treatment works
- 2006 - Golden Apple Award for environmental sustainability - Littlehempston hydropower scheme (also runner-up in Devon Environmental Business Awards)
- 2008 - Sustainability Award in Water Industry Achievement Awards - for water efficiency awards, online business accounts and our water efficiency certification scheme
- 2008 - Short listed for a Utility Industries Environmental Award for Mires, catchment improvement on Exmoor.

Investment decisions made since the 1990s needed to address planning constraints such as the requirement for small site footprints and remote locations for bathing and shellfish water protection, and for Urban Waste Water Treatment Regulations compliance. The programmes of improvements, proportionately far greater than those of our peers, have led to upward energy and chemical cost pressures. Those project concepts could not have anticipated the steep rises in energy and chemical costs over the last two years. Such global changes affect the procurement of basic materials, including ductile steel water mains, recently increased by over 40%, fuel, chemicals and any product required to maintain services.

Our focus now includes the promotion and delivery of alternative investments based on tackling problems at source, reverting to simpler alternatives and using the latest techniques from research and development work.

Innovation projects include:

Applying new systems and processes to optimise system operation:

- The introduction of 'Business Accounts Online' in 2007 to enable major commercial customers to manage their demand and costs proactively
- Purchase and installation of 'Intellisonde' units in 2008 for instantaneous measurement and reporting of potable water quality in distribution
- The use of cell lysis for enhanced sludge treatment performance in anaerobic digestion
- The development and application of vermiculture for sludge composting
- Research into algal farming as a potential bio-fuel source derived from the nutrients in wastewater final effluents. This would allow nutrients and micro-pollutants such as endocrine disrupters to be diverted from rivers with reduced flows in summer conditions
- Supporting the application of Catchment Sensitive Farming principles to 13 farms above Upper Tamar Lake near Bude, so protecting and improving river water quality, and developing from this pilot a regional set of catchment improvement projects.

Working in the wider environment to improve raw water quality and quantity:

- Mires, rewetting of higher moorland on Exmoor for water quality, quantity and biodiversity gains and extending the programme to Dartmoor
- ALICE project in the Upper Tamar Lake catchment area, near Bude - development and installation of new continuous automatic sampling of feeder streams to measure turbidity and nutrients in a multi-partner collaborative project which is 50% funded by the Government's Technology Strategy Board.

Influencing, funding and contributing to regional and national research programmes:

- We are supporting the latest climate change modelling results from the UKCCIP and UKWIR projects being undertaken by the water industry
- We participate in the UK's Environmental Knowledge Transfer Network, which is investigating the development of new low cost technologies for water and waste water treatment.

These approaches and many of the proposals contained within our plan, particularly our approach to catchment management, remote operation and sustainable solutions, are supported by the recently published report² by the Council for Science and Technology on innovation in the water industry.

3.9 Uncertainties and risks

A number of uncertainties and risks applicable to South West Water have been addressed to arrive at our final plan:

- We support Ofwat's view that the cost of capital should be decided as late as possible in the price determination process to take advantage of the latest information
- The scale of operating efficiencies that can be made in this plan critically depends on the level of capital spending available for innovative processes and systems. Some operating cost pressures, including energy costs and carbon reduction commitments, will be addressed through our planned capital investment in additional renewable energy systems, where these are cost effective
- In order to limit the impact on operating costs, we have provided for recovery of our pension funds deficit over a fifteen year period, subject to trustees' approval.
- We expect that transitional relief and technical discussions with the Valuation Office will heavily constrain a potentially significant business rate increase, with updated numbers being available to Ofwat in time for their inclusion in November's Final Determination of price limits.
- The current charge differential between measured and unmeasured bills may encourage a greater rate of switching to measured supplies by customers than is reflected in the plan. This will be monitored carefully as increasing rates of meter penetration make our overall income much more weather dependent and metered supplies yield a lower income than unmeasured
- The Environment Agency has stated its policy that 'sub-standard' combined sewer overflows (CSOs) require upgrading to modern standards 'gradually' through capital maintenance. For us, this policy could affect some 900 satisfactory but 'sub-standard' CSOs
- In November 2008, the European Commission issued an additional Reasoned Opinion to the UK Government on account of its alleged failure to correctly apply the Urban Wastewater Treatment Directive. In particular this is regarding the control of the release of untreated urban waste waters through storm water overflows. If implemented, the impact on the UK water industry would be immense, with costs estimated at £10m for Torbay and £400m for our operating area
- Implications for both services of the Pitt Review and any new responsibilities applicable to the water industry arising from the Floods and Water Bill.

² Council for Science and Technology: Improving Innovation in the Water Industry: 21st century challenges and opportunities



If some or all of these risk items are required they could increase our 2010-2015 Quality enhancement programme by a significant proportion. This would present considerable planning and implementation challenges.

This plan excludes investment that is uncertain or poorly defined. We are also aware that some forecast assumptions, such as the number of meter switchers are subject to considerable uncertainty. We therefore anticipate that an IDoK may become necessary during the plan period. We have limited this list to those that are essential as part of the balanced package we propose in this plan. We are proposing the following list of 'Notified Items' that may contribute to an IDoK:

- Meter optants
- Full implementation of the Traffic Management Act with lane occupancy rental charges
- Bad debts.

In the case of meter optants and bad debts, our plan assumes that a symmetrical 'notified item' will be put in place, so that material variations in either may result in an IDoK. Customers' bills would be adjusted downwards in the event of fewer meter switchers or lower bad debt, just as the company would have some protection from adversity. We have not assumed an increase in bad debt resulting from the current uncertain economic conditions, which could cause it to increase faster than turnover.

We have also requested that the following events be accepted as a Relevant Change of Circumstance (RCC) that also may trigger an IDoK during 2010-2015 should the need arise:

- Additional Quality schemes resulting from investigations undertaken from 2010 which may define additional schemes for bathing waters and shellfish water quality protection
- The adoption of private sewers, scope and timing of the work to be assessed on publications of expected Regulations
- Regulatory charges
- The impact of Government's review of affordable tariffs and competition.

3.10 Competition

We are engaged in the competition agenda and it is informing the development of our customer service strategy. The specification of the planned billing system upgrade included in the final plan specifically supports our ability to deal with the requirements of more extensive retail competition for non-household customers.

4 Influences on preparing the final plan

4.1 Government's and regulators' priorities

Defra's 'Future Water', the Government's water strategy for England to 2030, takes a balanced long-term view of the actions required by service providers and customers to ensure continuity of services and environmental protection. The need to respond to increasing climate instability, with older infrastructure that was built to earlier design standards, was demonstrated vividly on a national scale in flood events in 2007 and in the drought affecting southern England in recent years.

We welcome the clarity given by 'Future Water' on supply and demand management, the natural environment, drainage, flooding and greenhouse gas emissions, charges and regulation. We have addressed all of these aspects in our final plan. We have also responded to subsequent Defra consultations on the management of diffuse pollution and are participating in new approaches to urban surface water management.

We are fully engaged in the reviews of competition that are underway and Defra's charging and tariff review. The latter is particularly important to us as we need to be able to introduce innovative tariffs for both services as a key component needed to balance longer term supply/demand requirements and provide affordability support. We have also responded to Ofwat's 'forward plan' review of the water industry.

We note Defra's intention to require the adoption of private sewers by the water and sewerage companies from April 2011, but as instructed by Ofwat, provision for this is excluded from this plan. We have made an initial assessment of the capital cost for private sewer adoption and initial transfer, and we are continuing to investigate this topic.

4.2 Customers' views

We undertook comprehensive customer research to inform our strategic planning and investment decisions. Key issues emerging from the research were shared with the Consumer Council for Water and other stakeholders, through the Quadripartite process.

Our research highlights customers' preferences for stable bills or for price changes to be as smooth as possible and this is reflected in the plan.

We undertook customer research which included the following key steps:

- Deliberative focus groups
- Customer and stakeholder research in developing our SDS, with consultation on priorities
- Qualitative and quantitative market research in three stages with representative panels of customers
- Additional surveys were carried out on a preferred price profile; views on particular issues, such as competition, were sought and preferences were investigated between risks, for example the priorities between different types of flooding and pollution
- The results were used in our optimisation of our capital programme and to support cost benefit assessments.

The main research findings were:

- The research was dictated by the absolute level of bills, but over 90% of customers are willing to maintain current payment levels to ensure no deterioration in levels of service and performance
- Customers recognise the high quality and safety of drinking water, and require that it is always good to taste with an acceptable appearance
- Customers expect active and visible control of leakage
- Concerns are widespread about the capacity of the sewerage system, in particular its performance when extreme flooding occurs
- There is an expectation of no pollution and action to avoid expensive improvements in the future
- There is virtually no support for deteriorating service in return for lower bills
- Feedback from consultation with our business and commercial stakeholders has centred on security of supply.

Our plan reflects the findings from research undertaken with domestic and commercial customers since publication of the SDS. In response to the findings of the consultation, we are proposing to keep average bill rises as low as possible, consistent with a smooth price profile. We have achieved this through active constraint of our investment proposals in order to achieve a tailored outcome.

4.3 Other stakeholders' views

Consultation on all aspects of the DBP has taken place with Ofwat, the Consumer Council for Water, the Drinking Water Inspectorate, the Environment Agency, Natural England and representatives of Defra.

Environmental groups support our intention to take new approaches to improve the long-term environment, as these could improve the sustainability of our operations and protect customers from further price rises associated with adapting to, and mitigating, climate change effects on our business.

We have received letters of support for the environmental protection and enhancement aspects of the plan from the Environment Agency, the Chief Executive of the Royal Society for the Protection of Birds, the National Farmers Union and local rivers and wildlife trusts.

4.4 Willingness to Pay for service improvements

In arriving at conclusions on the right balance for customers and the environment, we took into account the following summary from research and feedback on our SDS:

- Most customers (>90%) either do not want services to deteriorate, or would support further improvements if they can be delivered without an increase in their overall bill
- Individuals' WtP was generally more influenced by their current bill level than by their income
- AB social groups are more likely to be satisfied with current services and value for money and these are significant factors in determining future WtP. Beyond this, social aspects are generally not particularly significant factors
- Although we can identify on average a WtP from customers for service improvements, most customers (some 70%) have limited WtP if their overall bill was to increase significantly
- Environmental improvements display more differences based on social and personal characteristics than other service improvements

- Views on direct service experience aspects such as drinking water are generally shared across individual characteristics
- Those most likely to use beaches are more likely to want to see improvements to them, although the link to WtP for them is weaker
- Informal use of rivers also shows a link to supporting improvements such as for habitats, but less so for formal recreation users of rivers.

Stakeholder groups generally most favoured those improvements that affected their area of interest, whether that was services or the environment. However all stakeholder groups were aware of the impact of higher costs on bills.

Our SDS set out our long term priorities. Customer and stakeholder feedback shared these priorities. Our SDS recognised that the level of bills was the top concern for a significant number of our customers and our customer research has confirmed this. Our business plan has achieved a balance between price changes and service improvements, particularly by focussing on those improvements that result in smaller charge increases by 2015 or where they mitigate risks of increasing costs.

4.5 Population growth

Devon and Cornwall are forecast to have the largest percentage population growth in the country between 2010 and 2030, at 8.6%, even more than in the South East or East Anglia. Our challenge is to deal with the pressure that this will place on our treatment works and the capacity of the network and our plans will address this. We are confident that our Water Resources Strategy (WRS) can deal with the new demands without the need for new reservoirs, but we have included the investment in the plan needed to ensure we maintain the required water resources headroom and to protect our supply capacity as identified in the WRS.

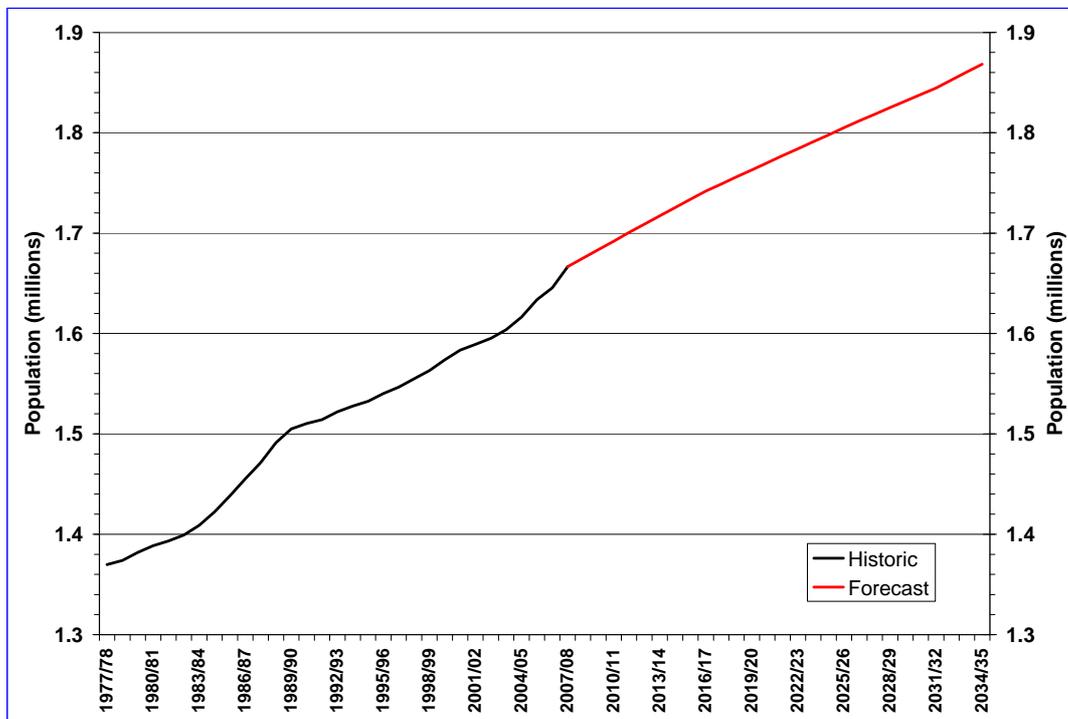


Figure 2.7: Long term population trends for the South West Water supply area sourced from local authority data



5 Pure Water

5.1 Water resources

Following our investment in new dams and reservoirs since 1989, we have recently acquired two new sources in Cornwall, Stannon Lake and Park Lake on Bodmin Moor. These former China Clay extraction sites are now our fourth and fifth largest reservoirs. Our resource provision is supported by effective demand management, accompanied by a rapidly rising proportion of customers served through a metered supply. This situation now requires the introduction of innovative tariffs, such as rising block, to help constrain unnecessary water use and to allow ongoing deferral of additional water resource and supply capacity provision.

We intend no water restrictions except in extreme circumstances and our current system has provided unrestricted supplies for twelve years. There is limited customer support for reducing the risk of restrictions below one in twenty years on average.

5.2 Abstractions

If confirmed, some abstraction reductions may be necessary to address the Habitats Directive led review of water use from Dartmoor. An initial indication was received in 2007 from the Environment Agency of a suggested reduction of 5.7MI/d in allowable abstractions. This possible change is linked to nine sites in the Dartmoor area to meet Habitats Directive requirements. A further communication from the Environment Agency is awaited but is not available to inform this final plan.

The Environment Agency has also indicated that one of these sites and one further location may also be affected by the Water Framework Directive's requirements and we are awaiting further information. These are the only locations in our operating area where a possible change may occur, confirming that all other abstractions out of a total of 54 are being managed sustainably and with no adverse environmental impacts.

5.3 Improving drinking water quality

Our SDS identified a number of issues, which we want to address to enhance our customers' acceptability of their treated water supply. Improvements to existing processes to enhance the level of manganese removal and further reduce the risk of taste and odour within the treated water supply have been implemented during 2005-2010 at several water treatment works.

In our preliminary risk based submission made to the Drinking Water Inspectorate in April 2008, we demonstrated that the progressive deterioration in raw water quality in a number of river and reservoir sources could be attributed to changing agricultural practices. It is our long-term objective to work with the agricultural community and the Environment Agency to reduce the occurrence of pesticides within raw water sources so that our customers are protected at all times. The increasing concentration of pesticides in raw water sources presents a risk to customers and it is our objective during 2010-2015 to address this issue at a number of targeted water treatment works by putting process units in place to address this specific problem. This will provide the necessary protection until the Catchment Management benefits start to be realised.



Our customers have told us that their most important requirement is that; the water we supply is free from any unpleasant taste or smell, and at an adequate pressure. Our proposed improvements do this and move us towards our objective of delivering improved raw water quality, as the most sustainable option for improving potable water quality over the long term.

A structured approach has been taken to assessing the current risk of exceeding legally required standards set in Drinking Water Safety Plans and we have applied Investment Optimisation disciplines in order to ensure that the proposed measures provide a tried and tested solution to safeguarding customers' supplies at the most cost beneficial level. The improvements at Drift, Restormel, and Wendron WTWs, will require the addition of a new process stage of Granular Activated Carbon, which will reduce the concentration of natural organic material and pesticides remaining in treated water, after initial stages of treatment.

Our Clean Water Quality programme for the 2010-2015 period reflects the improvement investments that have received support or commendation for support by the Drinking Water Inspectorate or have been identified by the Environment Agency, to mitigate the environmental impact of third party land use in the catchments we use for water supply.

In a number of our catchments, we are already experiencing deterioration in the raw water quality, confirmed by the risk analysis described in our Drinking Water Safety Plans. As the full benefit of the Upstream Thinking programme will not be realised for a number of years, we have proposed a number of schemes to maintain the level of protection provided to our customers in the intervening time (only provided these costs are not abortive).

In the 2005 to 2010 period, a number of water quality and water treatment projects have been completed. One that runs beyond 2010 is for improvements at Tottiford water treatment works, serving the Newton Abbot and Torbay areas of South Devon. After 2010 we propose to install new rapid gravity filters to facilitate Manganese removal. A further overlap between the two periods are the post project renovation assessments, which are required by the DWI to demonstrate the effectiveness of water mains rehabilitation work carried out in 2008 and 2009.

The total Water Service Quality Enhancement programme has been costed at approximately £49.5m for the final plan. The scope of work at each site has been based on the output from the Drinking Water Safety Plans where current and historic data on raw water quality and ongoing treatment works quality performance have been taken into account.

We have analysed our capital programme and identified a scope for capital efficiencies that the business is challenged to deliver between 2010 and 2015. Our awareness of the sensitivity of customers to bill levels encouraged us to challenge ourselves on the scope of efficiencies, without taking risks with the effective delivery of service levels. These efficiencies represent a combination of:

- The mix and scope potential of our capital programme
- The evidence provided by the draft Cost Base submissions
- Future improvements in capital efficiency that can be expected in the industry as a whole

- The remaining challenge in our plans from the AMA assessment where we cannot directly demonstrate that the draft CIS gap has been closed as a result of improved evidence and presentation in our FBP.

5.4 Catchment management and sustainability initiatives

From 2007 to the present we have undertaken the first steps in our 'Upstream Thinking' programme, which aims to put in place long term sustainable measures to improve raw water quality within a number of catchments. Our SDS described the current programme of initiatives within Upstream Thinking and demonstrates our commitment to securing the future quality and quantity of our raw water resources with more sustainable approaches than simply treating deteriorating water quality at the point of treatment.

We are working with a wide range of organisations and stakeholders to influence the way catchments are managed where they may affect water used for potable purposes, whether in rivers, reservoirs or groundwater resources. We have demonstrated, through the cost benefit process that such interventions cost far less than conventional treatment focused solutions assessed over any timescale from ten to 40 years. Catchment based interventions proposed in the plan are based on current moorland work and farmland actions.

A three year pilot project has been undertaken on Exmoor to develop and prove the methods for sustainable water quality and quantity management. Known as Mires, the project addresses problems at source by:

- Creating better water retention on moorland areas
- Improving base flows in rivers
- Attenuating flood peak flows
- Benefiting water quality
- Improving biodiversity
- Reducing soil erosion and colour in raw waters
- Capturing significant amounts of carbon through the encouragement of peat formation.

The project steering group comprises memberships from the Environment Agency, Natural England, English Heritage, Exmoor National Park Authority and South West Water. A full presentation was given by the group members to the Royal Commission on Environmental Pollution in February 2009 to show the practicality of a number of organisations working together on a catchment wide basis to achieve a wide range of water related benefits.

If the winter water levels in Wimbleball Lake, on Exmoor, are low, we can abstract water, downstream of the Mires area, at Exebridge, for pumped storage transfer to the reservoir.

Cleaner water for transfer reduces the risk of sediment accumulation in the reservoir and transfer of soils with attached phosphates. These lead to eutrophication in the stored water.

Wimbleball supplies Wessex Water's important treatment works at Maundown and provides river regulation and raw water for abstraction and treatment at Tiverton and Exeter. In all of these situations, algae and their die-off compounds need to be avoided as far as possible due to environmental damage, toxicity risks to wildlife and taste and odour risks in treated water.



An extension of the current pilot scale work of Mires to restore excessively drained areas of Exmoor and to carry out pilot work on Dartmoor is included in the plan under a water resources investigations driver with the Environment Agency's support. Remedial work, following the investigation, will lead to higher natural base river flows in dry weather and reduced transfer of sediment into nearby reservoirs. The opportunity will be taken in the Dartmoor trial to undertake studies to verify whether this type of work, if extended beyond 2015 on a large scale, would provide sufficient information to justify the Special Area of Conservation (SAC) requirements for salmon habitats.

We are in discussion with wildlife, river management and environmental groups on preliminary feasibility work that could extend the principles of Mires to higher land in Cornwall at Colliford Moor, Goss Moor and on the West Penwith moorland. All of these areas support our river and lake abstractions. Natural England and the RSBP have provided letters of support for the Mires programme and similar endorsements have been received from organisations involved in catchment management programmes.

Following on from our collaborative upland work, we are proposing a number of farmland interventions on a catchment scale to improve rivers affected by soil, fertilizer and pesticides used in farming. Current control measures are not effective and in order to meet the Water Protection Zone principles of Article 7 of the Water Framework Directive we plan to take a leading role in promoting measures to protect our raw water sources.

Projects for the highest priority catchments were submitted to the Drinking Water Inspectorate in response to their view that the water industry should assess and act on risks to water quality on a whole catchment basis. In view of the Drinking Water Inspectorate's decision to commend investment in catchment management, outside of the statutory quality programme, we have included these projects in the plan; on the basis that the opportunity to defer more intensive water treatment post 2015 justifies much lower cost programmes of catchment action at this stage.

Following submission of the draft plan, a new driver of Catchment Investigations has been identified by the Environment Agency. In response we have identified work at 17 sites to be undertaken from 2010 to 2015 to confirm the highest risks to current water abstraction and storage and these are included in the final plan. This programme of catchment investigations has the support of the Environment Agency and is included in the National Environmental Programme (NEP). The studies will identify remedial catchment wide work to be undertaken from 2015 onwards.

We have identified significant current threats to water quality in the catchment feeding Wimbleball on Exmoor and have implemented with the Westcountry Rivers Trust a programme of farm visits, pollution threat identification and immediate implementation of improvements to protect this key resource shared with Wessex Water.

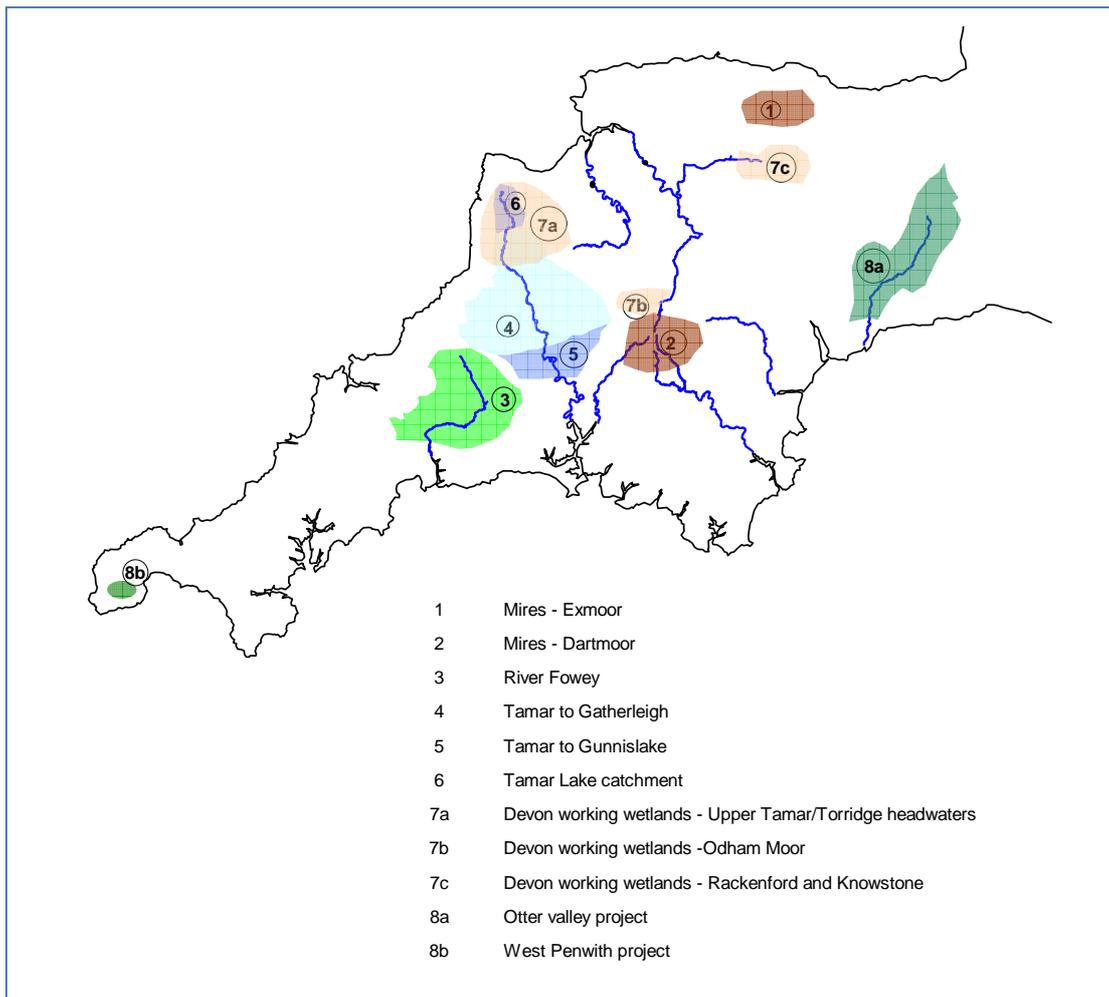


Figure 5.1: Proposed Mires and farmland catchment management projects

6 Pure Service

6.1 Customer contacts and service standards

Our Customer Service strategy for the period 2010 to 2015 and beyond is summarised by the Pure Service element of our Pure Water, Pure Service, Pure Environment vision described in our SDS.

To achieve Pure Service we will:

- Deliver high quality water and sewage services that are value for money
- Embrace and develop technology to deliver water and sewage services for the benefit of the region
- Improve our customer experience through industry leading contact and account management.

Contact volumes are influenced by customers' price awareness. On 1 April 2008, we appointed Accenture to manage customer contacts and committed a £4m investment to:

- Resolve contacts first time
- Improve the quality and rate of response to customers' service
- Raise the quality of responses to billing contacts.

The plan builds on this with the aim that customers will find it easy to deal with us - we want them to be able to contact us in the way they want, including by direct personal contact.

6.2 Future customer service

The following table summarises the planned levels of customer service and compares final plan outputs to those given in the draft plan:

Line number	Description	DBP			FBP		
		2008-09	2009-10	2014-15	2008-09	2009-10	2014-15
C14	DG6 % billing contacts dealt with within 5 days	99.9	99.9	99.9	99.9	100	100
C15	DG7 % written complaints dealt with within 10 days	99.9	99.9	99.9	99.9	100	100
C16	DG8 % metered customers receiving bill based on a meter reading	99.85	99.85	99.85	99.9	99.9	99.9
C17	DG9 % calls abandoned	5	3	2	5	4	3
C19	DG9 call handling satisfaction score	4.5	4.5	4.8	4.5	4.5	4.7

Table 6.1: Summary of customer service changes from draft to final plans

6.3 Tariffs

Our final plan includes the preparation needed to introduce innovative tariffs, such as rising block and seasonally variable, for water services from 2015. Our intention is that future tariffs will encourage further important progress on water efficiency and assist in delivering a sustainable supply/demand balance. We believe that a range of sensitively designed tariffs will help us to support affordability aspects better than we can at present and provide a choice to customers.

Our existing billing systems do not have the functionality or capacity to deliver the changes that we believe are required to support our customers in water management and affordability. We will need to develop, or replace, our billing systems during 2010 to 2015 to enable us to operate new tariffs.

6.4 Support for vulnerable customers

We operate best practice debt management activities with our billing partner, Accenture. Our customers are offered a wide variety of payment options, and we will seek to improve these through, for example, improving the usability of our electronic billing and self service options. We offer free debt helplines, and all our call centre staff are well trained to offer alternative tariffs and charging options to reduce customer bills.

The biggest area of debt growth is previous occupier debt, reflecting the difficulties faced by all water companies in pursuing tenants. We will continue to press Government for changes to legislation to make such debt more easily collectable.

Our approach to helping customers with payment difficulties has involved the development of three complementary schemes: WaterCare, WaterSure and Restart.

In early 2007 we launched WaterCare, a new ground-breaking customer care programme which aims to help those most in need to pay their bills by advising them on how to manage better both their water use and household budget, including claiming all the benefits to which they are entitled. WaterCare reduces customer debt write off and develops a constructive relationship with customers who have difficulty with payment and has been commended by the Government as an exemplary service offered to customers.

WaterCare now delivers tangible benefits to nearly 3,000 customers. It is our intention to expand WaterCare and the costs of this are included in the plan. This will increase the water efficiency of homes and ensure that customers who are entitled to benefits receive all of them.

Our former social tariff is now nationally branded as WaterSure. It is a Government tariff introduced by legislation and is aimed at protecting metered customers who need to use significant amounts of water from having to cut back on use – such as families with more than three children or where a specified medical condition is occurring. At least one person in the home must be on a means tested benefit.

Over 4,000 of our customers benefit from the WaterSure tariff, 25% of the national total. Given that our customers represent only 3% of the population of England and Wales this reflects our commitment to support vulnerable customers.

We would also like to see the WaterSure tariff extended to incorporate customers eligible for disability benefits and those not on meters. Most crucially we would like to see this tariff capped at the national average bill, reflecting the fact that benefits for this group of customers are set at a national level. Our Special Assistance Scheme will continue for one-off cases of hardship.

Our Restart scheme was introduced in April 2007. It is a debt management scheme which rewards customers who adhere to a payment plan by writing off increasing proportions of their outstanding debt. During 2007/08, some 1,700 customers accepted the Restart offer.

Continuation and development of these three programmes is essential given our relatively high historic charges, so they are part of our plan for the period from 2010 to 2015.

6.5 Protecting service performance

A key issue following our major investment in new assets since 1989 is the growing need for asset renewal and replacement. We must ensure adequate levels of investment to protect current service levels, including taking into account the effects of climate change and population growth. Following extensive investigation, modelling and cost benefit assessment we are proposing targeted but significant increases in the level of essential capital maintenance in this plan.

Our Overall Performance Assessment (OPA) measure, assessed by Ofwat, shows that we have improved our relative performance over the last five years. Our capital investment has transformed the environment and improved customer services. Planned investment for the future is designed to consolidate the benefit to customers and to ensure recent environmental gains are maintained.

6.6 Pressure

We have delivered a steady reduction in the number of properties affected by poor pressure, and although unfunded at PR04, this work will continue. The number in 2002/03 was 269. Improvements based on local additional pumping provision are supported by dynamic pressure management, remote monitoring and reporting across the network to reduce water pressures at times of low demand for leakage control purposes. The number of low pressure improvements included in the plan is shown below:

Table 6.2: Number of properties on Ofwat's DG2 register		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
249	170	170

6.7 Leakage

We will continue to pursue the lowest sustainable water losses due to leakage and fix all leaks as quickly as possible. A three-day response standard for leaks reported by our customers has been included in the plan to meet their expectations. The leakage target will remain at 84MI/d, as this is our lowest sustainable rate of loss and below the economic level, which varies over time and is shown in the graph below:

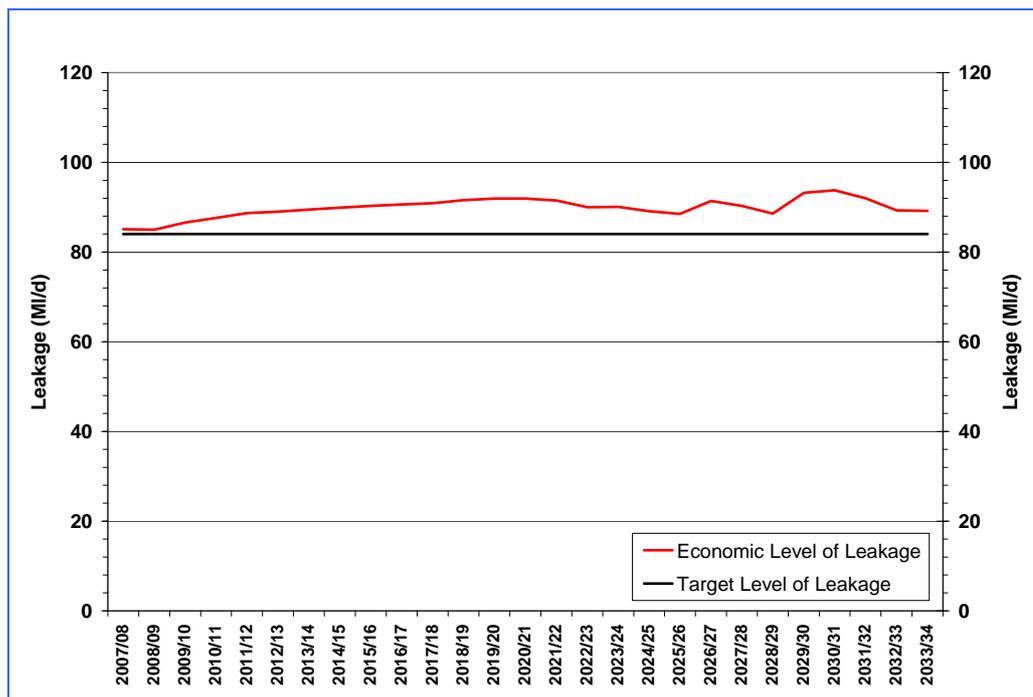


Figure 6.1: Graph of economic level of leakage to 2035 compared to the current 84ML/d target

Our approach to leakage control has been noted as industry leading, with one of the lowest national rates measured in terms of losses per kilometre of main.

6.8 Water efficiency

Our work to deliver best practice, industry leading, water efficiency is making strong progress. We aim to be leaders in helping our major customers to use water efficiently. Our major customers are using our award-winning Business Accounts Online service to track and control water use.

Recent water efficiency work has been very successful. Based on this, our next major investment requirement in water resource capacity can be deferred for a number of years.

The plan includes three new water efficiency projects which are forecast to save 8ML/d. Supported by a programme of publicity, education and advice the cost of these projects are included in the final plan at £1m capital and circa £0.4m revenue per annum.

Water efficiency allows customers to achieve short term cost savings, but these need to be recovered to some extent in later years. However, these increases will be less than those required to meet unconstrained future water demands.

6.9 Water efficiency goods and service offers

Saving water needs to be a priority for everyone in the community. To help this, we have negotiated a range of discounted products to reduce the use of high quality drinking water in the garden. We also work with local councils, schools and tourism associations to deliver WaterWise talks, seminars and workshops to promote water conservation.

As described in our Water Resources Strategy we are offering new equipment such as Ecobeta and Ecometer to encourage more efficient and careful water use.

We are supporting small and medium sized enterprises (SMEs) who wish to implement water saving projects with good payback rates for those business customers.

We are also supporting the schools education programme 'Espresso' by providing an interactive reservoir planning model, which allows students to investigate the environmental impacts of new resource provision compared to encouraging the best conservation techniques for water use.

6.10 Metering

Metering is essential to our demand management strategy. It also offers the opportunity to support affordability through enabling customers to control the size of their bills. While metering growth between 2010 and 2015 will be driven by some 30,000 new metered connections and 76,000 meter switchers, we will keep under review the options for promoting a greater number of metered supplies from 2015.

We expect around 85% of our customers to be metered by 2015.

With the increase in metering we are experiencing increased contacts where customers have an unexpected high meter reading. Our call centre staff will be well equipped to inform customers of possible reasons and actions to eliminate problems. Our customer metering advisers will visit a customer's home to support them in identifying potential sources of high consumption and recommend actions to reduce water usage.

Some customers would like to be metered but because of the plumbing arrangements at their properties it is not possible. We will examine whether further work at a sensible economic cost could make metering possible. We expect that there will always be a group for whom it will not be economic and the Assessed Charge will apply.

The following graph shows the proportions of measured to unmeasured households in relation to forecast demand from 2007/08 to 2014/15:

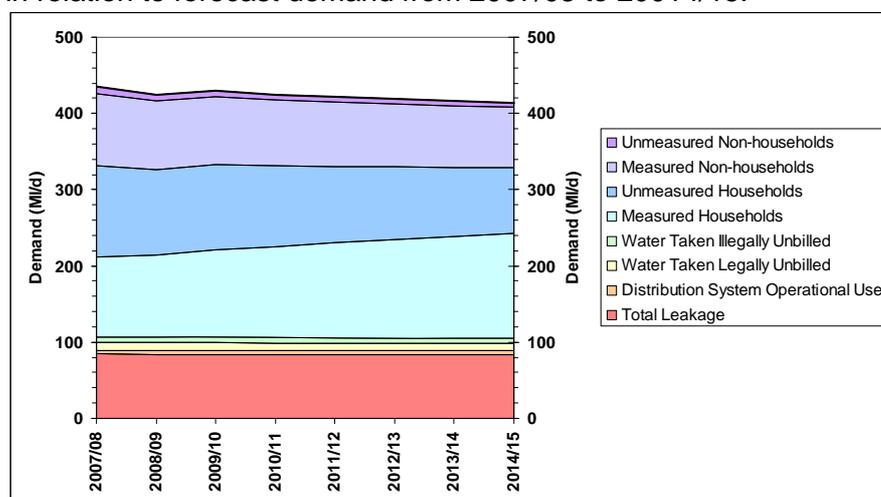


Figure 6.2: Forecast demand and metering components from 2007/08 to 2014/15

6.11 Business customers

We have developed an award winning service for our largest customers which we believe is industry leading, this includes:

- Business Accounts on Line; (a free on line service available to all non-domestic customers providing account and consumption and waste disposal information at site or organisation level. The system includes a forecasting and budgeting tool; trade effluent information and Mogden calculator; Embedded Carbon calculator; an interactive Water Efficiency Calculator and Optional flowmonitor providing 15 minute flow data providing proactive text or email warnings of consumption levels that indicate leakage)
- Onsite support for leakage and meter management
- Water efficiency audits
- South West Water Efficiency Certification Scheme
- Consolidated paperless bills for the largest customers

During 2010 to 2015 we will develop and be delivering a similar model for the next tier of business customers.

6.12 Interruptions to supply

Over the next 25 years, we are proposing to reduce the risk of interruptions to supply by concentrating water treatment at key strategic works and improving our ability to move water across the region, moving closer to the concept of a regional grid. Initially the plan allows for the construction of selected duplicate strategic mains crossings, for example beneath rivers.

There are inevitable risks with an extended rural network and urban supply mains, which were initially constructed over 100 years ago. The mains rehabilitation programme has allowed good improvements in their condition and performance and the plan envisages further targeted mains renewals and replacements in order to avoid any deterioration in the DG3 performance measure as shown below:

Table 6.3: Supply interruptions - Ofwat's DG3, Overall Performance Score		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
0.23	0.23	0.23

* The 2009/10 plan target varies from the 2005 Monitoring Plan as the latter is now based on a calculation based on average performance in potential significant bursts

The DG3 measure is as follows:

Table 6.4: Supply interruptions - properties per year affected by unplanned supply interruptions lasting more than 12 hours		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
450	450	450

6.13 Sewer flooding

We are proposing, in the much longer term, to achieve no sewer flooding and zero pollution incidents. This will be achieved through a series of measures included in the plan:

- Improved asset robustness

- PUROS monitoring of system performance
- Resolution of sewer flooding of properties
- Increasing capacity and improving performance to avoid repeat flooding within a five year period
- Addressing external flooding
- Adapting to emerging new design standards for sewerage and overflows.

Planned expenditure for hydraulic sewer flooding is circa £22m in our FBP.

In response to Ofwat's feedback we have reallocated all base sewer flooding expenditure into Supply/Demand.

The key customer service aspect of avoiding sewer flooding of properties is incorporated in the plan.

The following tables show the planned reductions in the number of properties at risk of flooding using Ofwat categories for reporting:

Table 6.5: DG5 Properties at risk of flooding (2 in 10)		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
16	11	6

Table 6.6: DG5 Properties at risk of flooding (1 in 10)		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
44	32	18

The following tables report on the planned serviceability of our assets:

Table 6.7: Properties internally flooded in the year due to other causes		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
80	72	64

6.14 Risk of sewage flooding of external areas

Our investment priority for sewer performance in the period from 2010 to 2015 is on DG5 property flooding and compliance. As a result, our planned investment in external flooding is targeted at no deterioration over the plan period:

Table 6.8: Areas at risk of external flooding (2 in 10)		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
87	87	87

Table 6.9: Areas at risk of external flooding (1 in 10)

Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
119	119	119

Table 6.10: Areas externally flooded in the year due to other causes

Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
1200	1100	1000

6.15 Urban drainage and Sustainable Urban Drainage Systems (SUDs)

Our long term objective for urban drainage is to separate surface water from foul water to prolong asset capacity and performance and reduce flooding and pollution risks.

This is particularly significant for us, as two-thirds of our waste water systems need to store and treat wastewater to the highest national standards, suitable for the protection of the region's bathing and shellfish waters. This aspect of our business will become increasingly important as storm events and tidal surges become more frequent due to climate change. Separation will also support our Zero Pollution objective for wastewater services.

We have participated in two of the fifteen Defra led national pilot sewered catchments, in Camborne and Torbay, to assess the optimal methods of surface water management, including separation of flows, within the urban area. These enable us to develop best practice techniques in relation to new development, the construction of SUDs, their adoption and the subsequent long-term maintenance of associated water management systems.

The results of pilot trials at the following sites will also inform our future investment plans for our sewerage networks and wastewater treatment works: Countess Wear (Exeter), Exmouth, Plympton, Great Torrington, Truro and Torquay.



Figure 6.3: Proposed study and implementation areas for Integrated Urban Drainage

In our response to the Defra consultation on the adoption and responsibility for SUDs, we recommended that water undertakers were probably best placed to manage and operate urban surface water management, as it is in both our and our customers' best interests that surface water is not mixed with foul sewage.

Separation allows volumetric loads on the foul water system to be minimised, avoids pollution from excessive storm overflow operation and reduces the cost of sewage treatment. Better and more sustainable low technology methods are available for highway run-off and surface water management and we recommend these are promoted wherever a positive cost benefit can be predicted through the surface water management plans that are due to be prepared by local authorities under the Pitt Review recommendations.

6.16 Private sewer, drain and customer supply pipe adoptions

The Government has announced that it intends for the sewerage companies to adopt and maintain private sewers and drains up to the boundary of customers' properties from 2011. Many customers are currently responsible for their pipes until they reach our sewer, which is often in the middle of the road.

In common with all other obligations affecting our customers, we believe that their views on the benefits and additional costs of adopting these assets should be taken into account. The adoption would increase our costs and we would have to recover these additional costs from all of our customers.

There would be operational advantages in the transfer, as it would help us to eventually achieve our goal of zero pollution incidents. There would also be benefits to nearly all of our wastewater customers from the adoption of drains in the highway.



We have undertaken a survey to assess the likely costs which involved a doorstep survey in areas where private sewers have been identified. This was followed up with a CCTV survey of the private sewers where the householder gave us permission. The results from these sources were used to populate the UKWIR model that has been developed to determine the implication on capital costs of the transfer, length of sewer to be transferred and the likely ongoing operating costs.

This model shows that the initial transfer would require in the order of £41m of capital investment, £5.5m p.a. ongoing capital and approximately £0.5m p.a. of additional revenue spending. These estimates do not include the expected administrative and customer liaison costs. The transfer would increase the length of sewers that we are currently responsible for by approximately 61%.

In line with guidance from Ofwat we have not included any costs for private sewers in our plan.

We believe that there is merit in offering water supply pipe adoption for customers as an additional enhanced service in the longer term. Benefits for customers would include:

- Improving pressure
- Reducing the risk of a supply interruption to an individual property
- Addressing an increasingly significant part of overall leakage
- Improving water quality, particularly where outdated customer supply pipe materials, such as the use of galvanised iron and black polyethylene, that are affecting appearance, taste and odour.

7 Pure Environment

7.1 The Environment of the South West

The rivers, estuaries and coastal waters of Devon and Cornwall are unique and provide the basis for much of the region's economy through tourism, commercial activity and trade. Since Victorian times, the sea was used for the disposal of wastewater generated by the majority of the South West's estuarial and coastal settlements. Legislation starting with the original 1974 EU Bathing Water Directive led to a significant programme of improvements from the late 1970s to now. These projects are largely complete. In addition, widescale pollution control investment now protects the region's rivers from the previously damaging effects of inadequately treated point source effluent discharges and overflows.

The next steps involve preparation for the effects of climate change. We must also ensure that the water supply and wastewater assets we operate and maintain for our customers are run efficiently, sustainably and with no adverse environmental impacts.

7.2 Biodiversity and habitats proposals

The Natural Environment and Rural Communities Act 2006 introduced new obligations on public bodies, including the water industry, for the proactive promotion and protection of biodiversity. We have discussed these requirements with the Environment Agency and Natural England to identify the following current and planned actions to meet the duty:

- Provision of conservation and biodiversity actions on and adjacent to our reservoirs and lakes, the majority of these being managed by South West Lakes Trust, an independent charity. Their work for us includes the development and maintenance of Biodiversity Action Plans and regular management reporting for all major sites
- Supporting catchment management programmes which deliver enhanced biodiversity corridors. Mostly sited along riverine buffer strips, these will allow freedom of migration for species affected by climate change pressures, and align with the principles set out by Biodiversity South West in its Nature Map proposals
- Implementation of a series of projects on South West Water's land to protect or improve Sites of Special Scientific Interest and to improve public access and understanding of them. This programme was introduced under a new '10' driver by the Environment Agency and Natural England in November 2008, and the resulting programme is additional to the NEP projects previously included in our DBP. We have included two such schemes in our FBP.

7.3 Environmental standards

The NEP for South West Water comprises 351 defined outputs, of which 17 relate to clean water catchment investigations, the rest being waste water. We have included all of the agreed NEP requirements in our final plan following our own challenges of the justification for the proposed projects. In the uncertainties and risks described in section 3 of this document, we have highlighted the potential additional expenditure that may occur within the period from 2010 to 2015. This will be incurred if legislation is adopted in or before that period, or where policy decisions and investigations lead to the proven need for new programmes.

As the NEP is substantially driven by legislative requirements, the main output from our programme is a reduction of our pollution risk through compliance with more



stringent limits. However, in all cases, we have considered our other strategies and aims when deciding the best way in which to achieve this. We have therefore, wherever possible, looked for sustainable solutions (to at least a 2031 design horizon), processes that achieve low environmental and carbon impacts, and simple sewerage solutions rather than deploy operationally and environmentally expensive treatment processes.

The vast majority of the outputs from the waste water service programme, are made up of 271 intermittent discharge assets that require the installation of event duration and monitoring equipment, and a further 11 assets that require event duration, and monitoring and spill reduction measures, under the Shellfish driver S1.

The directives on shellfish waters set mandatory standards for the quality of the shellfish waters and shellfish flesh. In addition to the event duration and spill reduction schemes mentioned above, the Environment Agency has identified four priority spill reduction schemes (Barnstaple/Ashford Waste Water Treatment Works and three at Heathfield Waste Water Treatment Works, near Newton Abbot), which are being implemented already as 2005-2010 log up schemes.

We have already started half of the eight bathing water investigations required, although the funding is included in our PR09 submission (i.e. not logged up). This is to enable the resulting capital investment needs to be assessed and quantified, before the 2013 bathing season, in order that we can meet the legislative deadline.

The total Sewerage Service Quality Enhancement programme, including SEMD projects, is valued at £48.7m.

Our SDS sets out our commitment to comply with all regulatory standards. However, for our customers the most important priority is the affordability of their bills for water and sewerage services. We have therefore worked with the Environment Agency and Natural England to challenge proposed quality schemes and shape the NEP.

We have carried out a cost benefit assessment for each project and almost all schemes on the NEP are cost beneficial based on our customers' willingness to pay for environmental improvements. We have also looked at every opportunity for alternative ways to deliver the required quality improvements and regulatory requirements and already included the most cost beneficial option.

The very few schemes that have been shown to be slightly non-cost beneficial in achieving the required levels of compliance are described below:

- Kingsbridge WWTW, Lostwithiel Storm Tank and Coulson Park SPS where the high costs of reducing levels of infiltration and increasing storage volumes exceed the derived benefits, although this is the most cost effective solution.
- The benefits estimated from performing investigations are unavoidably uncertain pending the outcome of those investigations. Initial estimates have been included in our Investment Optimisation system, with the result that Chemicals investigations C1 and C2 appear to be non-beneficial, whilst other investigations (CRoW, Shellfish and Bathing Waters) may be slightly beneficial, based on uncertain estimates of our avoided costs.

We have analysed our capital programme and identified a scope for capital efficiencies that we have challenged ourselves to deliver between 2010 and 2015. Our awareness of the sensitivity of customers to bill levels has encouraged us to challenge ourselves as to the scope of efficiencies, but without taking risks with the effective delivery of service levels. Our capital efficiencies represent a combination of:

- The mix and scope of our capital programme
- The evidence provided by the Draft Cost Base submissions
- Future improvements in capital efficiency that can be expected in the industry as a whole
- The remaining challenge in our plans from the AMA assessment where we cannot directly demonstrate that the draft CIS gap has been closed as a result of improved evidence and presentation in our FBP.

7.4 Pollution control

We are aiming for wastewater services that achieve our four long term wastewater aims of:

- Zero pollution incidents
- Sewers for Sewage
- Delivery of Integrated Urban Drainage projects
- Invisible and odourless operations.

A linked issue is the way that our sewerage system is being misused, as incorrect disposal of wastes to sewers is a major cause of blockages, which can lead to property flooding.

At present 200,000 avoidable blockages occur each year, 70% of which are caused by the incorrect use of sewers for the disposal of rags (54%) and FOG (16%). To address this, we will be continuing a proactive campaign 'Sewers for Sewage' designed to reduce the risk of service failures and environmental pollution, as our contribution to responsible catchment management in the South West. We will promote this project jointly with the Environment Agency.

Local areas are being targeted for the installation and operation of improved odour control at key sewage treatment works as part of this approach. In the event that a decision is made for the adoption of private sewers by the Government, we will propose a phased approach to limit the impact of a major increase in our asset base, as possibly neglected condition, poorly performing pumping stations and priority problems are made known to us.

Table 7.1: Number of pollution incidents (category 1, 2 and 3) from infrastructure assets		
Level of performance by 2009/10	Level of performance by 2014/15	Level of performance by 2019/20
55	45	35

7.5 Climate change

Over the last thirty years, we have collected evidence and have commissioned research to analyse the changes taking place and their effect on weather and temperatures in our area.

Rainfall amounts are becoming less predictable, intensities are rising but are more localised and summer and winter temperatures are higher. The changes are broadly in line with UKCCIP and Met Office forecasts, but accelerate the need for new approaches to water supply and wastewater service provision to ensure consistent and reliable performance under all but the most extreme circumstances.

The plan includes a number of strategies, starting with our approach to supply/demand forecasting, which will lead to new approaches to risk management for the way that catchments and sewered areas are now responding.

7.6 Carbon management

Our SDS makes a clear commitment to meet the carbon reduction targets that are emerging from the developing national framework and our final plan is set out to support this commitment.

The following chart shows the functional split of our greenhouse gas emissions in 2007/08:

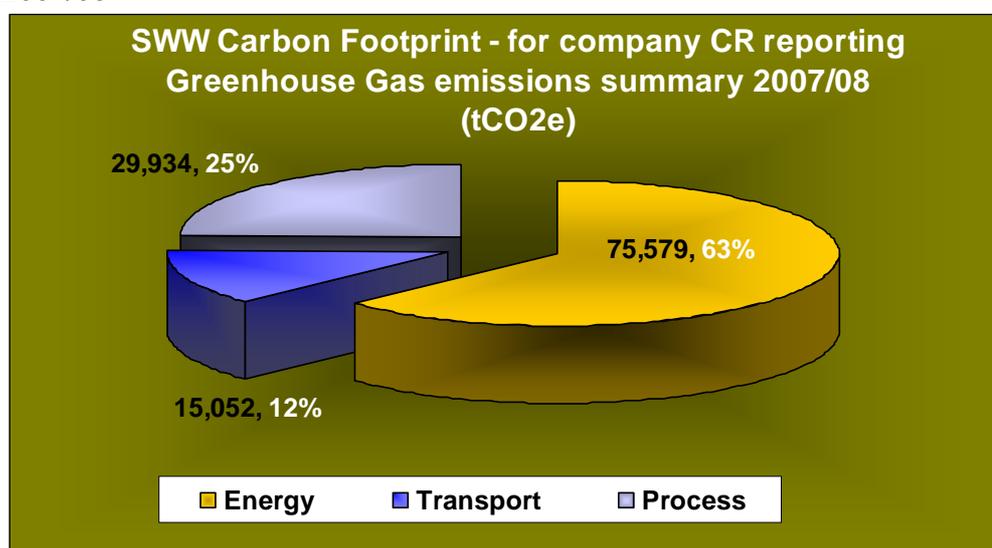


Figure 7.1: South West Water's carbon footprint by activity, 2007/08

The biggest opportunity to mitigate our carbon emissions comes from controlling our energy usage.

For most of the past decade we have witnessed sustained growth in our overall energy consumption, mostly in order to comply with new regulations and standards, as well as planning requirements.

In the latter part of the present period the increase in energy consumption has begun to be arrested and there is good evidence that the efficiency improvements we have already put in place are helping to control any further increases.

A recent reduction in annual energy usage is particularly evident for our clean water assets where greater energy efficiency has been assisted by our efforts to encourage demand side efficiency. By contrast, for waste water sites substantial growth in energy consumption has continued in the current period, although there is evidence that since 2007/08 we have reached the peak of energy use for waste water.

The chart below shows the historical trend of our energy consumption:

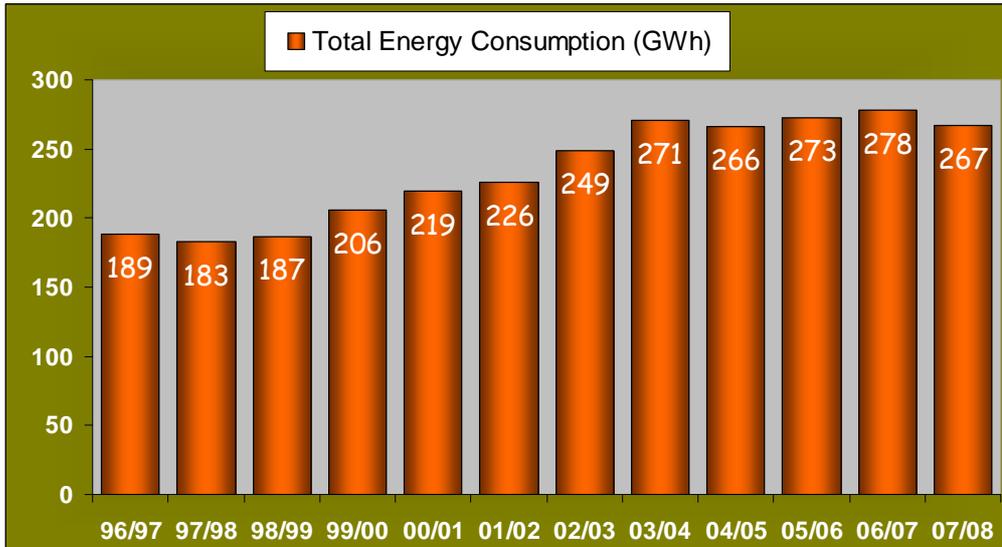


Figure 7.2: Annual energy consumption (Electricity, Gas, LPG and Gas Oil)

Water UK’s annually published Sustainability Indicators Report allows us to benchmark our relative energy and carbon performance against the rest of the water industry.

Our kWh/MI treated and tCO2/MI treated performance compares well with the rest of the water industry in terms of energy consumption for clean water delivery. Our waste water plants on the other hand consume far more energy than the industry average due to the recent site upgrades required as part of our Clean Sweep programme and the unavoidable constraints on their associated planning requirements.

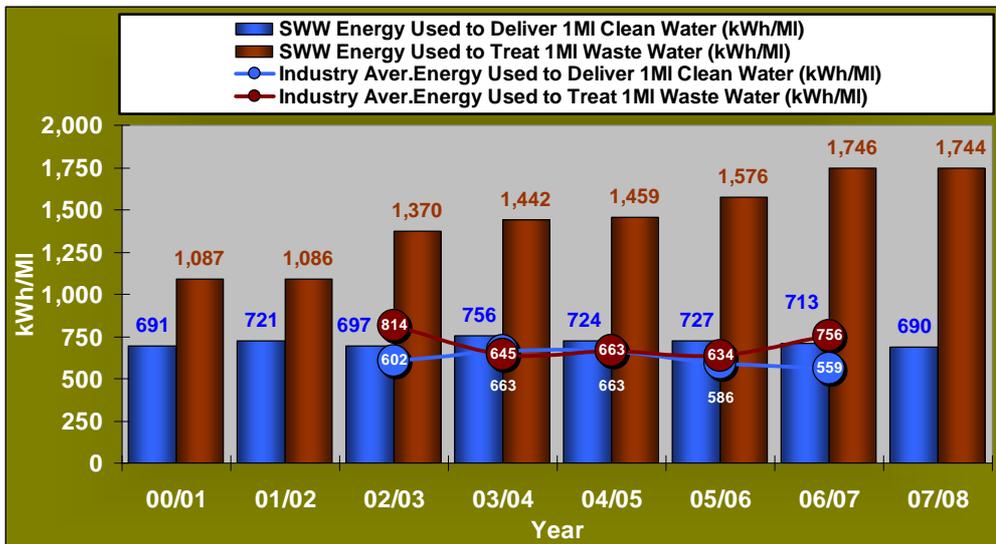


Figure 7.3: Clean and waste water energy intensity kWh/MI



We have taken the approach in our electricity purchasing strategy to select low carbon sources wherever possible. However we no longer purchase premium priced renewable electricity on a green tariff as the latest Defra guidelines (2008) for voluntary greenhouse gas reporting suggest best practice is to apply the standard grid emissions factor to such green tariffs, aligning with the rules of the Carbon Reduction Commitment. This means there is no longer any carbon accounting benefit available to us in opting for green tariffs.

Nevertheless we do buy over 90% of our electricity needs from 'Good Quality Combined Heat and Power' (GQCHP) plant and under current Defra guidelines for voluntary greenhouse gas reporting (2008) this does allow us to report our emissions using a lower electricity emissions factor than standard grid electricity. By taking this action we have been able to improve our relative position in greenhouse gas emission terms when compared with our peers in the industry.

We have forecasted a 21% reduction in water service carbon emissions from 2009/10 to 2014/15 and a 16% reduction in waste water service carbon emissions over the same period. The main contributors to this will be:

- Energy efficiency work, including pump testing, refurbishment or replacement;
- The PUROS Project - increased levels of automation, work planning and remote operation, along with pipe network enhancements
- Water efficiency through demand side management.

Whilst we anticipate overall reductions in carbon emissions, some projects are required that will increase carbon emissions from 2010:

- The installation of Granular Activated Carbon processes at water treatment works sites
- Significant capital maintenance projects at a number of sites
- Provision of water and waste water services for the two planned Devon new towns, Cranbrook and Sherford.

7.7 Use of sewage sludge

Sewage sludge volumes for disposal have increased rapidly over the last fifteen years as crude and other unsatisfactory estuary and coastal discharge routes have been closed. Furthermore, the degree of sewage treatment has increased such that the majority of our population are now served by sewage treatment works with tertiary treatment standards. From a disposal of 17,000 tonnes dry solids (tds) in 1992/93, recycling in 2007/08 reached 64,900 tds, a 380% increase.

Sewage sludges are digested to derive methane, treated with lime to remove pathogens and pressed or centrifuged. In either liquid or solid form, this source of organic fertilizer is welcomed for agricultural use and is supplied and used strictly in accordance with the BRC Safe Sludge Matrix.

Lime treated sludges are a valuable farming resource to increase crop yield from acidic soils, and 90% of our sludges have been put through this enhanced treatment. Prices of inorganic alternatives derived from oil have increased sharply in recent years, increasing the value of a free resource to farmers. The use of locally derived organic fertilizers reduces the carbon footprint of south west farming compared to the remote manufacture and long distance transport involved with inorganic alternatives.



We are proud to note from the Water UK Sustainability Indicators report for 2007/08 that we place the highest proportion of our sludges in the water industry into beneficial use in agriculture, at well over 95%. The balance being solely unsuitable screenings and grit responsibly disposed to landfill. We consider this to be the most sustainable option for sewage sludge management and in tune with the region's agricultural roots.

Within our sludge strategy, we are proposing a modest investment in the new processes of vermiculture and cell lysis in order to improve efficiency and further our understanding of cost benefit associated with alternative treatment options. Our strategy continues to rely on the beneficial use of sewage sludge in agriculture. It is a sustainable operation based on engagement with farmers, and further planned improvements to tankering, storage and application.

We plan to continue to use the agricultural route for the plan period, as long as it remains the best solution. Factors that may change the situation are:

- The unavoidable methane release resulting from incorporation of sludge into soil, currently approximately a quarter of our carbon dioxide equivalent (CO₂e) emissions, could become subject to controls, however to date no indication of a levy or other reduction mechanism has been signalled by Government
- Increasing energy prices may make waste to energy processes more financially attractive
- A change of sentiment by food processors and retailers prohibiting the use of sewage sludges as fertilizers for any part of the crop or stock production system.

Any or all of the above could result in the agricultural route becoming unsustainable making the adoption of digestion with combined heat and power (CHP) to derive methane and power at our largest sites, followed by waste to energy processes being required for all of our sewage sludges.

7.8 Protection of migratory fish

A programme of enhanced fish passes and screening for the protection of migratory fish has been developed and included to meet the Environment Agency's requirements for the Dartmoor Special Area of Conservation (SAC) and Habitats Directive led review of consents. In the period from 2005 to 2010, two major installations were completed at hydropower abstractions points at Mary Tavy and in Tavistock in order to protect our resources for generating renewable energy and to avoid the risk of damage to juvenile fish.

Further installations are planned for the potable water abstractions at eight locations. These are in the catchments of the Rivers Dart, Erme and Yealm. The screening work is being undertaken at water supply abstraction points to protect our licensed abstractions and to meet our general duty to protect and enhance biodiversity. The fish pass improvements will help migratory fish move to their natural spawning grounds.

8 Resource Plan

8.1 Financing the plan

Our final plan includes an average K factor of 3.4%, with 7.1% in 2010/11 despite a lower cost of capital than at PR04, a broadly stable RCV in real terms due to a smaller quality investment programme than at previous reviews and the identification of further opex efficiencies equivalent to 2.4% per annum.

A cost of capital of 4.8% is included in the plan.

Financeability support would have been required without the benefit of our existing borrowings in place for 2010-2015. We plan to continue to finance our activities in a way which is designed to maintain our key financial ratios (particularly debt/RCV gearing and interest cover) at a level consistent with an investment grade rating.

Based on financial projections in the plan, we expect over the 2010-2015 period to require additional finance of circa 7% of existing net debt and to refinance maturing debt of circa 11%, having already pre-funded 12%.

The financial model indicates that we should be able to fund our requirements with additional debt while maintaining the required financial ratios, and the company does not therefore expect to raise additional equity (apart from retained earnings) over the period from 2010 to 2015.

8.2 People and technology

In our SDS, we described our ServicePlus approach that we have already implemented to improve both our customer service and operational technical expertise. Some seven out of ten contacts are being resolved centrally without the need to involve field staff. This improves customer service and reduces operational cost.

Our plans for 2010 to 2015 include the following people and technology related developments to improve service to our customers further and to increase efficiency:

- Quality and Performance management systems – consistent, structured processes addressing the quality of service and performance, supporting first contact resolution
- We are already investing in 'Workflow', which is a technical solution incorporating work management, workflow routing and skills-based routing
- Developing our people, their skills, abilities and management capacity as needed to deliver the long term business vision we have defined
- Knowledge workers – a focus on resolving customers' queries through understanding the context and with the support of knowledge management systems
- Customer Culture – a business culture which is based on putting our customer first.

The plan allows for the investment in skills development at all levels, information technology and billing system renewals, centralised control and remote feedback and operation to ensure that we are able to further enhance our efficiency.



A central proposal for achieving the planned efficiencies from 2010 to 2015 and improved asset stewardship is PUROS. Improved instrumentation and monitoring will allow more efficient centralised management and remote operation of our assets. Earlier advice of a problem will allow faster responses with the aim that customer services are affected as little as possible in the event of a system problem.

Supporting systems investment there will be a major culture change programme to ensure that in addition to systems putting customers at the heart of our business, our processes and people do so also. A key starting point for this programme will be eliminating the need for unnecessary contacts and complaints.

Up to 35% of the complaints we receive are linked to our failure to respond, or to take action, in a manner that satisfies a customer. This results in a further need for the customer to contact us again, including those that are escalated to CCWater. Our aim is to reduce such complaints by 80% over the next five years as a result of our customer culture programme and systems investments.

8.3 Asset stewardship

The plan will support proactive asset procurement, maintenance and management based on more accurate predictions of system behaviour. Asset management models have been built for water and wastewater infrastructure and non-infrastructure maintenance in line with the UKWIR Common Framework.

8.4 Serviceability and capital maintenance

Until now, our principal focus since 1989 has been on asset creation for all aspects of water and sewerage services. We adopted a Customer Focused Asset Management (CFAM) process in 2004 to improve our approach to asset management and customer service during the current period. We have now revised, improved and recalibrated our approach for the coming price period and the longer term. This is at the heart of our approach to asset management.

We have embraced the planning principles of the UKWIR Common Framework to support our capital maintenance submission in conjunction with the Quality and Supply/Demand programmes. We have used site survey information and data from our corporate systems Ellipse, Rapid and LIMS (Laboratory Information Management System). We have defined planning targets and produced methods of defining probability of failure, the consequences of failure and the cost of interventions to mitigate failure. We consider that this represents a robust, forward-looking, risk-based approach that is in line with all of the key stages outlined in the Common Framework.

Our investment optimisation process has been further enhanced and applied to all possible interventions. This has enabled a proper cost benefit assessment to be undertaken, including accounting for customers' Willingness to Pay and carbon impacts.

Investment in capital maintenance to support our serviceability and ongoing performance improvement includes:

- Water treatment works process maintenance cycles based on our Drinking Water Safety Plans

- Sewer rehabilitation deterioration modelling, which has identified the need for increased activity. Investment in this area is already exceeding the levels financed in the 2004 Final Determination
- The need for re-investment at sewage treatment works upgraded in the early 1990s to protect river water quality has now been evidenced by risk-based failure analysis
- Maintenance of leakage at 84MI/d, well below the current and future economic levels.

We have made a major commitment as part of our PR09 process to apply CMPCF for all asset groups. This process has evolved since the early approaches taken for PR04 and during the course of development of our final plan. A significant amount of learning and application of best practice has resulted.

The business objective of applying CMPCF is to derive a compelling maintenance plan that provides confidence in the investment activities required, both proactive and reactive, to deliver our services to customers as described in the SDS. In addition, we consider that it provides a sufficiently detailed delivery plan to satisfy the requirements of all key internal and external stakeholders.

8.5 Water service asset maintenance

The following table compares planned investment at 2007/08 prices and describes customer benefits in the current period to that proposed for the next:

Asset group	2005-2010 £m	2010-2015 £m (less exceptional items, pre efficiency)	Customer benefits
Water Infrastructure (Dams, mains, pipework, valves and fittings)	65.6	55.3	<p>The completion of our DOMS enabling programme will consolidate the improvements in water discolouration made under our mains rehabilitation programmes.</p> <p>Replacing 'short side' black polythene and galvanised iron communication pipes will avoid repeat failures of these customer connections.</p> <p>We will make a 32% reduction in properties affected by low pressure and provide a stable mains burst rate thus sustaining performance against interruptions to supply.</p>

<p>Water Non- infrastructure</p> <p>(Treatment works, pumping stations and local service reservoirs)</p>	<p>112.9</p>	<p>115.6</p>	<p>We will assure our high degree of compliance against drinking water standards and water supply provision under all demand conditions.</p> <p>Our borehole maintenance programme is designed to arrest the deterioration in water quality and declining yields from these ageing resources.</p> <p>We will evaluate the most effective and cost beneficial methods of reducing overall chlorine within our systems in order to improve the taste of our supplies.</p>
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Table 8.1: Water service asset maintenance comparison

Water service infrastructure

Our recurring maintenance for 2010-2015, detailed above, represents a reduction over 2005-2010 levels and is additionally supported by the following projects:

- We will undertake a programme of grouting to safeguard the stability of Wimbleball Dam and provide increased spillway capacity at our Kennick, Tottiford and Trenchford Dams. This expenditure, totalling £15.6m, is required under the statutory provisions for Reservoir Safety
- We are undertaking a programme of works rationalisations costing £5.6m to take advantage of whole life cost benefits
- We will progress a programme of strategic and critical crossing duplications for raw water and supply mains, to assure our performance against supply interruption, at a total cost of £2m in 2010-2015.

Water service non-infrastructure

Our recurring maintenance for 2010-2015 detailed above represents a small increase over our 2005-2010 level and is additionally supported by the following projects:

- Our PUROS programme will deliver sustainable cost reduction and improved service under investment totalling £7m within the water service
- Our assurance of reliable output of 100Mld at our Restormel water treatment works will require investment of £3.1m
- We propose to make improvements to our customer billing and competition information systems under investment totalling £10.1m within the water service
- Our proposals for energy and carbon reduction in response to Climate Change commitments will require investment of £6.3m
- We propose to provide improvements to the sewage disposal systems supporting the increasing popularity of our recreation and amenity sites at Roadford and Siblyback Lakes at a cost of £1.9m
- Investment in the security of our strategic sites which is required under SEMD and totals £4.5m in 2010-2015.

8.6 Waste water service asset maintenance

The following table compares planned investment at 2007/08 prices and customer benefits in the current period to that proposed for the next:

Asset group	2005-2010 £m	2010-2015 £m (less exceptional items, pre efficiency)	Customer benefits
Sewerage Infrastructure (Sewers, rising mains, storage tanks and outfalls)	55.8	70.2	We propose stabilising our sewer collapse rate in a progressive manner over the next 20 years through programmes of sewer rehabilitation, whilst reducing the number of sewer blockages through improved operational intervention. We will reduce the number of properties and other areas subject to flooding and reduce the numbers of pollution incidents.
Sewerage non- infrastructure (Pumping stations, sewage treatment works and sludge treatment centres)	151.0	168.8	We will assure that our waste water treatment works are well maintained and have the required capacity to deal with sewage flows. We will improve our treatment works compliance and our performance against pollution incidents.

Table 8.2: Sewerage service asset maintenance comparison

Sewerage service infrastructure

Our recurring maintenance for 2010-2015, detailed above, represents an increase over 2005-2010 levels due to our proposed sewer rehabilitation programme which is designed to stabilise sewer collapse rate over the long term. It is also supported by the following new programmes:

- Sea water infiltration occurs within our low-lying coastal sewer networks. This can reduce the capacity for sewage flows, treatment difficulties, corrosion and odour problems. Our proposed programme of investment costing £4m in 2010-2015 is designed to provide stability in light of the predicted rise in sea level up to 2035
- Our programme of studies under the Integrated Urban Drainage (IUD) initiatives, costing £0.5m in 2010-2015, are designed to identify solutions to prevent surface water entering our sewerage network in support of our “Sewers for Sewage” policy.

Sewerage service non-infrastructure

Our recurring maintenance for 2010-2015, detailed above, represents an increase over 2005-2010 levels due to the very significant increase in the asset base installed under our £1.5billion Clean Sweep sewerage investment programme. This is also supported by the following non-recurring programmes:

- Our PUROS programme will deliver sustainable cost reduction under investment totalling £16.3m within the sewerage service
- We will develop a programme in support of our Sewage Sludge Strategy which includes vermiculture initiatives and improvements to our sludge digestion systems
- We propose to make improvements to our customer billing and competition information systems under investment totalling £10.1m within the sewerage service
- Our proposals for energy and carbon reduction in response to climate change commitments require investment of £3.5m within the sewerage service

- We are proposing a programme of remedial work at our sewage pumping stations costing £17.4m which will assure compliance with the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)
- A total investment of £2.6m is required at our strategic sites in order to comply with SEMD.

8.7 Cost benefit analysis

The capital programme was developed using cost benefit analysis consistent with Ofwat's aspiration for the appraisal of all projects included in the final plan. An unconstrained plan would have required over £1billion of capital investment being identified.

Thousands of investment choices were optimised using net cost benefit and outcomes were constrained to meet current service levels and statutory requirements only. Potential enhancements were considered only after the content of the compulsory programme had been challenged and confirmed. Outcomes were constrained not only to ensure that they were cost beneficial, but by the overall impact on customers' bills. Resilience has been thoroughly reviewed to ensure an appropriate level of response and capacity to increasing storminess and weather extremes.

Three types of costs and benefits were identified:

- Customers' Willingness to Pay (WtP) from research
- Social, environmental and carbon costs
- Whole Life Cost to the company.

Our WtP, investment optimisation and cost benefit procedures were peer reviewed to ensure results were linked correctly to the PR09 context. More information on the cost benefit process and outcomes is given in Appendix 1 of this document.

8.8 Programme changes in 2005-2010 and brought forward from 2010-2015

We have taken into account in our plan logging-up and logging-down of other projects, where timing and scope has changed since the determination of prices in 2004. Significant examples include the early completion of our Section 19 mains rehabilitation programme and changes required to the sewerage and waste water treatment improvements for Boscastle, Bossiney and Tintagel.

Several project areas, accounting for a £9m increase in capital investment in 2005-2010, were accelerated into the current period in agreement with the Environment Agency from work originally identified for post 2010 in the NEP approved by Ministers in 2004:

- Shellfish water improvements on the Teign (Heathfield Waste Water Treatment Works UV addition and storage) and on the Taw and Torridge estuaries (Ashford Waste Water Treatment Works UV addition and storage)
- Improvements to Urban Intermittent Discharges.

In a number of cases, the recent availability of low-cost bacteria typing between animal, avian and human sources has helped to focus investment on the causes of non-compliance and the required remedies. In addition to the above list of drivers,



sewerage assets have been updated between 2005 and 2010 faster than was originally planned to enhance customer service and system serviceability.

8.9 Overlap from 2010-2015 to 2015-2020

An opportunity exists for us to take a long-term approach to planning our strategies and the associated capital investment programme. This long-term approach would allow us to identify individual projects or a programme of works which could be phased over a greater period than just the five years from 2010 to 2015.

Capital Maintenance and Infrastructure are deemed a continuous process within the base level of service and are not considered as being eligible for the Overlap Programme. Actions under the categories of Enhanced Service, Supply/Demand balance and Quality Enhancements were analysed.

No programmes of work have been identified that meet the Ofwat criteria for consideration under the Overlap programme

8.10 Projected work programmes from 2015 to 2025

Our longer term plans include a complete ring main water supply system around Dartmoor for enhanced security of supply and to rationalise our treatment works operations for improved reliability and cost efficiency.

We anticipate programmes of work related to new EU legislation, mitigating and adapting to climate change, encouraging more efficient water use in domestic and commercial premises and the progressive separation of surface water from foul sewerage systems to protect waste water services from fluvial and pluvial flooding.

8.11 Procurement, research and development

Our procurement work includes the encouragement of supply chain innovation and research and development by suppliers and partners. Seventy per cent of our costs are subject to competitive pressures and competition for their supply to us.

Improved services require a number of innovations. Some of these will require the use of advanced technology as it emerges, others will require novel or simple approaches applied to new situations. There are a number of areas where we believe long term research and innovation is required, often in partnership with others. For example:

- Technology to reduce the amount of chemicals used in treatment processes
- Low carbon footprint treatment systems and options such as reed beds as part of sustainable surface water drainage and effluent polishing at low cost
- Remote monitoring and asset operation technologies capable of identifying and predicting problems
- Knowledge and data management systems to allow us to make the most of our information
- Renewable energy generation technology applied to raw water sources and at waste water treatment works
- Catchment management on moorlands and in farming environments.

We are now developing the delivery frameworks for the expected work from 2010 and are in negotiation with potential partners for operational activity and capital projects.



9 Next steps

This FBP is based on a programme of work starting with our SDS, compilation and submission of the DBP, Ofwat's and regulators' responses, Ofwat's CIS Baseline Assessment, Government's instructions, our Reporter's views, customer research and stakeholder consultation.

We are confident that our plan sets out a carefully assessed balance of priorities set in the context of affordability, our efforts to minimise price rises and our proposals to support and assist our customers.

Based on the draft price determinations expected in July 2009, we will develop a company response for the final price determination stage at the end of November 2009.



10 Part A summary table

This section comprises on the following page the company's overall strategy for the 2010 to 2015 period and beyond presented in the format specified by Ofwat. This summary document will be published on Ofwat's and South West Water's websites.

11 Ofwat Part A company strategy tables

Table A1 Price limits, bills, water sales and supply/demand balance

No adjustment for comparative service performance has been included in the price limit proposals. The K factors have been translated into customer bills through Ofwat's Tariff Basket Model. No tariff rebalancing has been applied, other than between measured and unmeasured customers within this model, which also depends on forecast demands and assumptions on the rate of switching from unmeasured to measured supplies.

Table A2 Water service – Current performance and planned outputs

The indicators of serviceability that we have used in arriving at our assessment are set out in section B3.

Table A3 Sewerage service – Current performance and planned outputs

The indicators of serviceability that we have used in arriving at our assessment are set out in section B3.

Table A4 Water service – Key activity projections

Table A5 Sewerage service – Key activity projections

Activity measures and expenditure are reported in Tables A4 and A5 in accordance with the reporting requirements and our analysis is based on reports from a master database that we compiled to record all projects in our capital plan together with associated project data for populating the projects databases in Part C5.

Expenditure analysis was undertaken for pre and post efficiency values and both sets of expenditure are fully reconciled to the Part B Tables. All expenditure in Tables A4 and A5 is reported post efficiency.

Expenditure for each project is allocated to a single line by primary asset group and, where a project involves more than one asset group; proportional allocations to different lines are not applied.

Our general approach for reporting numbers of sites is:

- For capital maintenance, supply/demand and enhanced service projects, a site is reported where expenditure exceeds £500k threshold value for either a single project or an aggregation of projects in a K period;
- A large proportion of projects are below the £500k threshold and a single aggregated project is reported for these projects;
- All quality enhancement projects are reported with no expenditure threshold applied, excepting the following projects are not included in site activity:
 - Investigation projects (water and sewerage services)
 - Catchment management projects (water service)
 - Event duration monitoring (sewerage service);
- A site is reported in base and enhancement if thresholds are exceeded in both expenditure categories;
- Aggregated projects comprising relatively small expenditure across many sites are not included in the number of sites e.g. SEMD projects

Management and general projects are reported as follows:

- Lines for ICA, telemetry and computers comprise projects with a prime purpose relating to one or more of these asset types;
- Lines for offices, laboratories, depots, workshops and vehicles include all other management and general projects that are not reported under ICA, telemetry and computers;
- The area activity measure of offices, laboratories, depots and workshops includes all projects with building work as prime purpose and excludes projects where building work is a secondary activity;
- Where buildings have a dual function for water and sewerage services, the £500k threshold has been applied to the combined expenditure and proportional allocations to each service have been assessed;
- Properties in our non regulated business that are included in our capital plan are reported in the expenditure lines but are not included in the area activity lines.

Further clarification of our approach to individual lines of Table A4 and A5 is summarised in the following tables.

Line	Description	Explanatory note
A1	Length of raw water aqueducts refurbished	Includes all projects with raw mains or aqueducts activity and no expenditure threshold applied
A2	Work on dams and impounding reservoirs	Includes improvements to abstraction points (6 sites) Excludes catchment investigations (17 sites) and catchment management projects (7 sites)
B4	Number of refurbished or new treatment works	Includes single aggregated activity for projects <£500k
B5	MI/d of refurbished or new treatment works	Excludes sites in aggregated projects
C7-9	Lengths of main	Includes all projects with mains activity
C11	Capital investment in underground water distribution activity	Breakdown of expenditure to mains, communication pipes and household meters is reported below
C12	Number of refurbished or new pumping stations	Includes single aggregated activity for projects <£500k Many projects are in £100-500k cost range and are not reported (20 sites in 2010-2015 and 11 sites in 2015-2020)
C14	Number of refurbished or new service reservoirs	Includes single aggregated activity for projects <£500k Many projects are in £100-500k cost range and are not reported (5 sites in 2010-2015 and 26 sites in 2015-2020)

The breakdown of expenditure to different components of underground water distribution activity (Line 11) is:

Component expenditure - £m	2010-2015			2015-2020
	Base	Enhancement	Total	Total
Mains	52.559	42.330	94.889	87.800
Communication pipes	11.757	0.854	12.611	11.549
Household meters	9.716	16.363	26.079	25.319
Total underground water distribution	74.032	59.547	133.579	124.668

Other key activity measures that are not reported in Table A4 are:

Activity	2010-2015			2015-2020
	Base	Enhancement	Total	Total
Length of mains cleaned (km)	25,000	-	25,000	25,000
Number of communication pipes replaced	26,597	-	26,597	26,339

Table A5 Sewerage service – Explanatory notes

Line	Description	Explanatory note
A1-6	Lengths of critical and non-critical sewers renewed, renovated or new	Includes all projects with sewer activity with no expenditure threshold applied Total aggregated length of sewer for each intervention type has been reliably estimated, however, the allocations to critical and non-critical sewer categories are approximate since many projects are not sufficiently developed to assign criticality. Criticality was specifically assessed for 53% of total sewer length and extrapolated to the remaining length All rising mains are allocated to critical sewers
A8	Number of refurbished or new intermittent discharges	Includes CSOs (including dual nodes), attenuation tanks and storm tank overflows Includes single aggregated activity for projects <£500k Excludes event duration monitoring projects (117 sites)
B10	Number of refurbished or new treatment works	Includes single aggregated activity for odour projects (15 sites in 2010-2015 and 7 sites in 2015-2020) Includes single aggregated activity for flood resilience projects (22 sites in 2010-2015) Excludes 23 investigation projects for shellfish and bathing waters Excludes event duration monitoring projects (32 sites)
B11	Population equivalent of refurbished or new treatment works	Excludes sites in aggregated projects
C15	Number of refurbished or new pumping stations	Includes single aggregated activity for projects <£500k Includes single aggregated activity for flood resilience projects (123 sites in 2010-2015) Excludes event duration monitoring projects (133 sites) Many projects are in £100-500k cost range and are not reported (14 sites in 2010-2015 and 17 sites in 2015-2020)
C17	Number of refurbished or new sea outfalls	Includes single aggregated activity for projects <£500k Many projects are in £100-500k cost range and are not reported (4 sites in 2010-2015 and 15 sites in 2015-2020)

Table A6 Efficiency improvements

This table only includes approximately half of the operating cost efficiency improvement included in our plan. The other element has been included directly in our operating cost projections as it is linked to our investment proposals. Details of our efficiency proposals are set out in section B2.



Table A9 Financial projections

This table is commercially sensitive, so is only provided to Ofwat.

Table A10 Water and sewerage services – Summary of justification of company investment proposals.

Details of this are given below in Appendix 1.

Appendix 1: Cost Benefit Assessment process

We undertook extensive research at PR09 in order to support our cost benefit analysis of our proposals. This research is set out in section C1 of the FBP. In this part of the plan we summarise how the cost benefit numbers have been generated and applied to the long term plan for developing our services.

Our approach has:

- Considered the Costs and Benefits of all investments included in our DBP on a consistent basis, using Willingness to Pay (WtP) values derived from extensive customer research. Social and environmental benefits and Whole life cost benefits have also been considered
- Tested the WtP values from our peer reviewed stated preference survey against a wide range of alternatives to judge whether they accurately reflect customer WtP, either in aggregate or for individual improvements. The overall cost of enhancements is consistent with the aggregate results of our WtP research
- Identified a significant difference between WtP for further improvements and Willingness to Accept (WtA) deteriorating survey that is supported by economic theory, is consistent with our customer research and has been reflected in our approach to selecting an optimal business plan
- The WtP research is consistent with the other market research that informed our SDS. Therefore, the enhancements we have prioritised in developing our plans reflect both CBA and customer priority for services
- Our research and plans have been discussed with stakeholders to ensure that the results consider their priorities
- Considered the results of the National PR09 research and our own study replicating it.

We have tested the costs and benefits of our entire capital programme, including base service and service improvements. Our business plan overall offers a high degree of cost benefit and value for customers.

Clean water service enhancements offer benefits of £2326m against costs of £293m. Waste water service enhancements offer benefits of £761m against costs of £104m. Of the £21 bill impact, £10 is driven by quality enhancements where the water quality projects approved by the Drinking Water Inspectorate and the environmental quality programme defined in the National Environmental Programme achieve benefits for society and the environment.

The remaining £11 for service enhancements reflects very closely to the £13 overall customer WtP that our research identified. Both the quality programme and the enhancement programme have reduced slightly from the DBP due to price pressures. We had many cost beneficial schemes which we did not include in our plan due to customer price sensitivity, and to ensure that the overall bill increase from these investments stayed within the customer WtP. This WtP was confirmed by the PR09 national joint research, although the design of the study does not lend itself to such comparisons being made.

The overall bill change in our plan will vary from these amounts due to revenues, financing and ongoing costs. The business plan overall is cost beneficial and reflects customers' views.



Some potential schemes that are not cost beneficial have been included in this plan, with the following being the main examples. We have reduced the number of these to the absolute minimum since the DBP:

- Investigations where potentially large benefits have yet to be established. The alternative would be the risk of expensive solutions in the future and so carrying out the investigation is the most cost effective option for now
- Some individual projects within the quality programme, including one catchment investigation, first time sewerage and security standards programme
- A lead communication pipe replacement programme that is a legal obligation
- Offering free meters to optants. As most customers are metered and there is little major security of supply investment required between 2010 and 2015, low benefits from metering have emerged. It still remains the most cost effective option

We focus our analysis on the service improvements rather than analysing the base programme cost and benefits.

Other projects included in our DBP, such as the rapid response DG3 enhancements, are now being undertaken by the business within the current period to March 2010, as the benefit case justified them being carried out earlier than 2010.

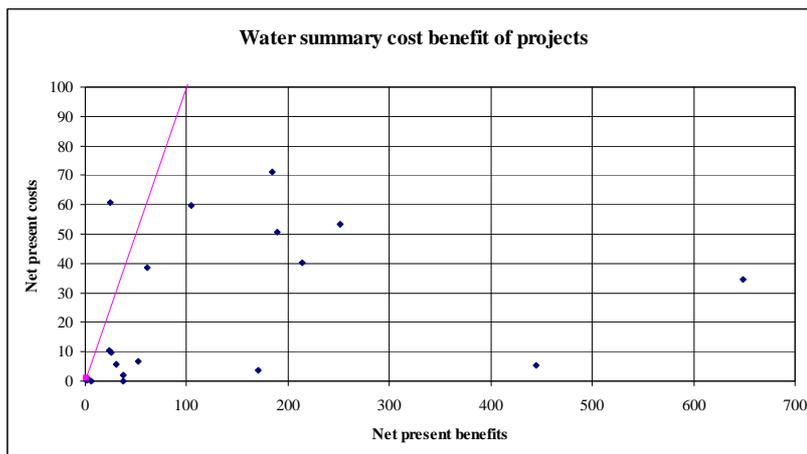
In preparing our plan there are potential schemes that have not been included during 2010-2015 on cost benefit grounds. In the long run for 2015-2020 and beyond we will be looking for innovative ways of working so these improvements can be cost beneficial in the future. These include:

- Using meter in readers to allow for automatic meter reading
- By-pass technology to maintain supplies when pipes burst
- Wider implementation of our long term security of supply strategy, including developing North Plymouth Water Treatment Works
- Anything more extensive than a minimal programme of sewer flooding enhancement.

Not all schemes that are cost beneficial individually have been included in our plans. This is because we have considered the total contribution to customer bills of our proposals. We have carried out sensitivity testing through Monte Carlo analysis on proposals that appeared to have a marginal cost benefit or where costs were higher than benefits but we still believe that we will need to carry out the activity.

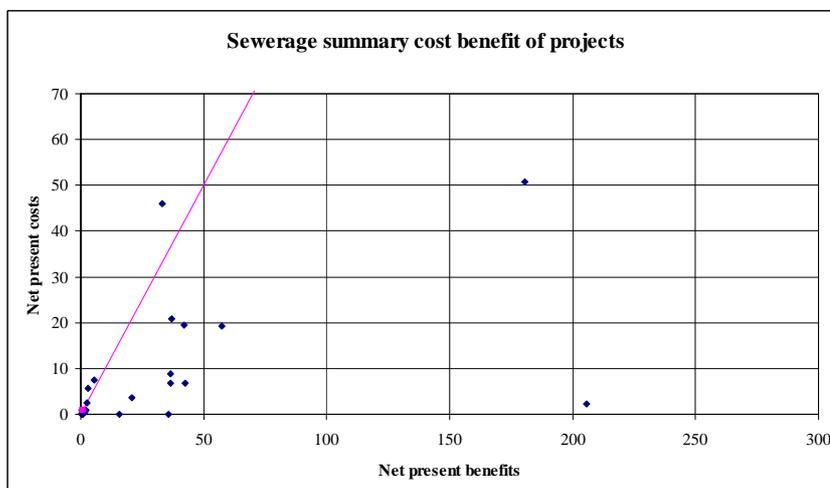
It is important to note that the analysis is based on capital expenditure gross of grants and contributions and pre future efficiency. The efficiencies we have assumed in our plan for both capex and opex mean that the costs are higher than the actual amount that we are planning to spend. The bill impact is also calculated before these efficiencies have been deducted. This is because future efficiencies are dealt with as a separate bill impact in Table 3.3 of this document, and the analysis is carried out this way to maintain the audit trail.

The graph below summarises the overall water service Net Present costs against Net Present benefits. Where Net Present costs are negative (due to cost savings) the cost is shown as zero



This graph shows that there are a large number of projects where the net present value of benefits over 40 years significantly exceeds the net present costs. The pink line shows where costs are equal to benefits, although it is difficult to identify the projects from this graph (which is included in order to meet the reporting requirements). Our assessment of base maintenance benefits of £24,868m against costs of £469m is not included on the graph due to the scale difference to the benefits of other expenditure areas. The only project area shown above where the costs exceed the benefits is Meter Optants (costs of £61m v benefits of £25m).

The graph below summarises the overall sewerage service Net Present costs against Net Present benefits. Where Net Present costs are negative (due to cost savings) the cost is shown as zero.



This graph shows that there are a large number of projects where the net present value of benefits over 40 years vastly exceeds the net present costs. The pink line shows where costs are equal to benefits, although it is difficult to identify the projects from this graph (which is included in order to meet the reporting requirements).

The only project areas shown above where the costs exceed the benefits are:

- Integrated Urban Drainage (benefits of £2.49m v costs of £2.55m)
- First time sewerage (£2.9m v £5.8m)
- CRoW & SSSI quality schemes (benefits £5.5m v costs £7.5m)
- Priority substances and endocrine disrupter studies (benefits £0.3m v costs £0.8m).

Appendix 2: Glossary of terms

Glossary of terms and abbreviations used in Figures 2.1, 3.1 and elsewhere in this document:

ALICE	Agricultural Land Improvements through Co-operation in Europe
AMA	Asset Management Assessment: a scoring method undertaken by Ofwat for all companies
BRC	British Retail Consortium: trade association for the UK retail industry
Capital maintenance	The maintenance of assets to extend their useful life
Catchment management planning	An integrated approach, involving many parties, to water supply catchments; to reduce land use effects on water taken for treatment, to improve efficiency and reduce costs
Cell lysis	A technique for conditioning sludge cells to increase the rate and total yield of methane and energy
CHP	Combined heat and power: a way of using methane produced during sludge digestion to generate electricity
CIS	Capital Incentive Scheme: designed by Ofwat to secure value for customers by challenging capital project delivery costs
CMPCF	Capital Maintenance Planning Common Framework: based on UKWIR report 02/RG/05/3
CRoW	Countryside and Rights of Way Act 2000: came into effect on 31 October 2005 - provides public access to the countryside and increases nature conservation and wildlife enforcement
Defra	The Department of the Environment, Food and Rural Affairs
DG measures	Ofwat level of service indicators (after Ofwat's former Director General)
DOMS	Distribution Operational and Maintenance Systems: systems for operating and maintaining water distribution system
Endocrine disrupters	Chemicals which mimic or inhibit the effects of hormones, particularly agents behaving like female hormones and agents antagonising male hormones
FOG	Fats, oils and grease
IDoK	Interim Determination of K: the IDoK process may be used to adjust prices up or down by companies and Ofwat part way through a five-year price period, subject to meeting specific criteria.
IUDM	Integrated Urban Drainage Management: removal of surface water from sewers in urban areas for separate treatment and disposal to reduce sewer flooding
IVR	Interactive Voice Response: a technology that automates interactions with telephone callers
Mires	A multi party approach to the restoration of wetlands on Exmoor and Dartmoor
MI/d	megalitres (one million litres) per day
Ofwat	The Water Services Regulation Authority: the economic regulator of the water and sewerage companies in England and Wales
OPEX	Operational expenditure
PPRA	Pre and Post Renovation Assessments: to verify water mains improvement benefits

PUROS	Phased Utilisation of Remote Operating System: increased automation and remote monitoring and operation of treatment work and pipe networks, to improve efficiency and reduce costs
Quadripartite process	A Periodic Review consultation process for water companies, involving the Environment Agency, the Drinking Water Inspectorate, the Consumer Council for Water and Natural England
Reporter	The Reporter acts as a professional commentator and certifier on the regulated activities of individual water companies
Saline intrusion	Sea water entering the sewerage system in coastal areas, which has a detrimental effect on equipment and processes
SEMD	Security and Emergency Measures Direction: for system resilience in extreme events
ServicePlus	An ongoing initiative to improve the way we deal with operational customer contacts
SSSI	Sites of Special Scientific Interest: statutory designated sites of national importance for their wildlife or geology
SUDS	Sustainable Drainage Systems: part of the integrated urban drainage approach for the disposal of surface water, taking account of quantity, quality and amenity issues
UKCCIP	United Kingdom Climate Change Impacts Panel: Hadley Research Centre
UKCCIP	UK Climate Change Impacts Partnership
UKWIR	UK Water Industry Research
UV	Ultra violet: A method of disinfecting effluent prior to recycling back into the environment
Vermiculture	The process of using worms to break down sewage sludge to produce a compost material
WaterCare	Our unique scheme to help customers with their water bills, including a benefits entitlement check, a check of water tariff, the option of a free meter, and the installation of free water saving devices
WFD	Water Framework Directive: EU environmental legislation to improve water quality, it requires all inland and coastal waters to achieve 'good status' by 2015