

Contents

B.11.1	Overview .....	4
B.11.2	AMA Methodology .....	4
B.11.3	Tracking the Draft Business Plan to Draft CIS baseline .....	5
B.11.3.1	AMA Scoring .....	6
B.11.3.2	Scope Changes .....	7
B.11.3.2.1	Insufficient evidence to support the proposal .....	7
B.11.3.2.2	Streamlined scheme costs .....	8
B.11.3.2.3	Unit Cost Analysis .....	9
B.11.3.2.4	Optimal solution not demonstrated .....	11
B.11.3.2.5	The benefits of the scheme did not outweigh costs.....	11
B.11.3.2.6	Efficiency .....	11
B.11.3.3	Conclusions on draft CIS baseline .....	12
B.11.3.4	Our final asset plan .....	12
B.11.4	Our view of the Final Baseline for maintenance .....	13
B.11.5	Water Service – Maintenance – Infrastructure Renewals .....	15
B.11.5.1	Changes of pre-efficiency expenditure .....	15
B.11.5.2	Changes to efficiency assumptions .....	15
B.11.5.3	Changes in outputs .....	15
B.11.5.4	Views on the draft CIS baseline .....	16
B.11.6	Water Service – Maintenance – Non-infrastructure .....	16
B.11.6.1	Changes of pre-efficiency expenditure.....	16
B.11.6.2	Changes to efficiency assumptions .....	17
B.11.6.3	Changes in outputs .....	17
B.11.6.4	Views on the draft CIS baseline .....	17
B.11.7	Water Service – Enhanced Service Levels .....	18
B.11.7.1	Changes of pre-efficiency expenditure.....	18
B.11.7.2	Changes to efficiency assumptions .....	18
B.11.7.3	Changes in outputs .....	18
B.11.7.4	Views on the draft CIS baseline .....	18
B.11.8	Water Service – Supply Demand Balance .....	19
B.11.8.1	Changes of pre-efficiency expenditure .....	19
B.11.8.2	Changes to efficiency assumptions .....	19
B.11.8.3	Changes in outputs .....	19
B.11.8.4	Views on the draft CIS baseline .....	20
B.11.9	Water Service – Quality Enhancements .....	20
B.11.9.1	Changes of pre-efficiency expenditure .....	20
B.11.9.2	Changes to efficiency assumptions .....	20
B.11.9.3	Changes in outputs .....	21
B.11.9.4	Views on the draft CIS baseline .....	21
B.11.10	Wastewater Service – Maintenance – Infrastructure Renewals .....	22
B.11.10.1	Changes of pre-efficiency expenditure .....	22
B.11.10.2	Changes to efficiency assumptions .....	22
B.11.10.3	Changes in outputs .....	22
B.11.10.4	Views on the draft CIS baseline .....	22

---

B.11.11	Wastewater Service – Maintenance – Non-infrastructure .....	23
B.11.11.1	Changes of pre-efficiency expenditure .....	23
B.11.11.2	Changes to efficiency assumptions .....	23
B.11.11.3	Changes in outputs .....	23
B.11.11.4	Views on the draft CIS baseline .....	23
B.11.12	Wastewater Service – Sludge management .....	24
B.11.13	Wastewater Service – Enhanced service levels .....	24
B.11.13.1	Changes of pre-efficiency expenditure .....	24
B.11.13.2	Changes to efficiency assumptions .....	24
B.11.13.3	Changes in outputs .....	24
B.11.13.4	Views on the draft CIS baseline .....	25
B.11.14	Wastewater Service – Supply demand balance .....	25
B.11.14.1	Changes of pre-efficiency expenditure .....	26
B.11.14.2	Changes to efficiency assumptions .....	26
B.11.14.3	Changes in outputs .....	26
B.11.14.4	Views on the draft CIS baseline .....	27
B.11.15	Wastewater Service – Quality enhancements .....	27
B.11.15.1	Changes of pre-efficiency expenditure .....	28
B.11.15.2	Changes to efficiency assumptions .....	28
B.11.15.3	Changes in outputs .....	28
B.11.15.4	Views on the draft CIS baseline .....	28
B.11.16	Changes in outputs .....	29
Appendix B.11.A	.....	34

## Capital Incentive Scheme

### Executive summary

This chapter summarises the changes made to our business plan between Draft and Final Business Plan submissions. Our Draft Business Plan clearly set out the issues for consultation with our consumers and stakeholders and we have valued their feedback in developing our Final Business Plan.

We have explained our consultation process clearly in part C1 of this Final Business Plan submission.

In Part B3 we have explained how we have refined our Final Business Plan in the following ways:

- We have developed detailed costs for all schemes included in the Final Business Plan. We have undertaken Monte Carlo analysis on the schemes in our Final Investment Plan to assess the balance of risk and demonstrate that the programme is a central estimate of likely outturn costs.
- We have worked hard to integrate schemes across drivers to reduce overall capex without affecting service.
- We have reviewed our Cost Benefit Analysis to reflect the changing views of customers and ensure that where enhancements are proposed, they are supported by customers and stakeholders.
- We have challenged the Environment Agency (EA) to ensure that the content of the Quality Programme is no more than is required by legislation.
- We have carried out Cost Benefit Analysis on Quality schemes to assess whether customers and stakeholders are willing to pay for improvements.
- We have reduced the investment requirements for Growth being mindful of the changing economic outlook.
- We have had our business independently assessed under the AMPAP scoring mechanism to gain a better view of our score under this new mechanism.
- We have assessed the risk to customers of receiving stable service in all areas and balanced our maintenance expenditure requirements accordingly.
- We have re-phased investment to achieve the long term goals set out in our Strategic Direction Statement so that we can reduce the immediate impact on customers' bills in 2010-2015.

These areas of work have been combined to our Final Business Plan to create a logical balanced view of investment over the next 5 years. The result is a significantly lower capital programme compared to the Draft Business Plan c.£2.1bn (Final Business Plan) vs. c.£2.6bn(Draft Business Plan).

The Final Business Plan remains significantly above the CIS Draft Baseline of £1.6bn and over the remainder of this chapter we explain that as a result of the work outlined above, the Final CIS baseline should be increased substantially. We have written to Ofwat (Les Dawson to Regina Finn 10 March 2009) outlining our disappointment with the Draft CIS baseline. The Draft CIS process severely disadvantaged Southern Water (SWS) compared to other companies.

We have included a Final CIS baseline equal to our Final Business Plan proposal.

We expect that the CIS process should allow SWS a further opportunity to revise its Final Business Plan capex to reflect the latest information in the iteration process towards the final baseline determination.

## B.11.1 Overview

The capital programme of the Final Business Plan is significantly lower than that proposed in the Draft Business Plan, as shown in table B.11.1. Please refer to section B.11.3.4 for further details.

Table B.11.1 Southern Water's Draft and Final Asset Plan

	Adj DBP	Eff	G&C	DBP Net	FBP	Eff	G&C	FBP Net
<b>Water</b>								
Maintenance IRE	168	-3	-6	159	132	-1.0	-6.56	125
Maintenance - MNI	189	-6	-1	182	176	-1.2	-0.25	175
Quality Enhancements	46	-1		45	37	-0.3		37
Enhanced LoS	41	-1		40	21	-0.2		21
Supply Demand	167	-4	-17	146	211	-1.6	-17.57	192
<b>Water Total</b>	<b>611</b>	<b>-15</b>	<b>-24</b>	<b>572</b>	<b>577</b>	<b>-4.3</b>	<b>-24.38</b>	<b>548</b>
<b>Wastewater</b>								
Maintenance - IRE	198	-7	-13	178	136	-1.0	-7.38	128
Maintenance - MNI	724	-44		680	667	-52.0	0	615
Quality Enhancements	672	-31	-	641	683	-41.8		641
Enhanced LoS	190	-9	-	181	115	-5.0		110
Supply Demand	339	-17	-28	294	149	-5.4	-30.55	113
<b>Wastewater Total</b>	<b>2,123</b>	<b>-108</b>	<b>-41</b>	<b>1,974</b>	<b>1,750</b>	<b>-105</b>	<b>-37.93</b>	<b>1,607</b>
<b>Grand Total</b>	<b>2,734</b>	<b>-123</b>	<b>-65</b>	<b>2,546</b>	<b>2,327</b>	<b>-109</b>	<b>-62</b>	<b>2,156</b>

This chapter sets out how the Final Business Plan (FBP) reconciles with the Draft Business Plan (DBP) and includes our response to the draft CIS baseline. There are a number of areas where we consider that the draft CIS baseline should be adjusted to reflect the refinement of our Final Business Plan and we set these out in summary and then for each service area below.

Where we propose changes we have included sign posts to other areas of the business plan where further information is available.

Appendix B.11.A is a CIS action plan which was implemented by Southern Water. This plan identifies each of the areas where Ofwat suggested that further work was required on the Draft Business Plan and it summarises what we have done to complete this requirement. The appendix gives a clear trail to show that all the issues raised by Ofwat in the Draft CIS have been addressed in the Final Business Plan.

## B.11.2 AMA Methodology

We are surprised at the new AMA methodology and suggest that it needs significant methodological improvement before Draft Determination.

The interaction of the new AMA process nested within the new CIS process means that only a company with perfect AMA scores of 100 would be able to achieve the CIS Baseline of 100. Unless a CIS baseline of 100 can be achieved, the process will not provide for the necessary returns equal to the allowed cost of capital.

We do not accept the ‘two-sided’ exposure to challenge that Ofwat has adopted on capital maintenance (MNI/IRE) if a company has proposed levels of expenditure in excess of AMP4 levels. It provides a disincentive to apply for an up-lift in funding even if it is genuinely required.

We do not accept that AMP4 spend is the right baseline on which to apply the challenge. Our asset base has grown considerable (doubled) in the past 20 years. This is reflective of the continuing Q programmes. Five year averages are therefore always going to lag the need for spend. We have shown that the AMP4 numbers require an uplift to reflect this growth in base, just to stay in steady state.

For a company like Southern Water, with a significantly growing asset base including shorter life components, maintenance must be increased to ensure serviceability. Ofwat’s starting position of historic expenditure does not recognise this.

### B.11.3 Tracking Draft Business Plan to Draft CIS baseline

Below in table B.11.2 we restate our Draft Business Plan after taking account of Ofwat’s proposed transfers which we accept and have incorporated in the development of our Final Business Plan. Table B.11.3 shows Ofwat’s draft CIS assessment.

Table B.11.2 – Summary of Draft Business Plan after transfers

	1	2	3=(1+2)	4	5	6=(3-4-5)
	DBP	Transfers	Adjusted DBP	Efficiency	G&C	DPB Net
<b>Water</b>						
Maintenance -IRE	168		168	-3	-6	159
Maintenance - MNI	205	-16	189	-6	-1	182
Quality Enhancements	72	-26	46	-1		45
Enhanced LoS	0	41	41	-1		40
Supply Demand	174	-7	167	-4	-17	146
<b>Water Total</b>	<b>619</b>	<b>-8</b>	<b>611</b>	<b>-15</b>	<b>-24</b>	<b>572</b>
<b>Wastewater</b>						
Maintenance - IRE	208	-10	198	-7	-13	178
Maintenance - MNI	824	-100	724	-44		680
Quality Enhancements	639	33	672	-31		641
Enhanced LoS	160	30	190	-9		181
Supply Demand	292	47	339	-17	-28	294
<b>Wastewater Total</b>	<b>2123</b>	<b>0</b>	<b>2123</b>	<b>-108</b>	<b>-41</b>	<b>1974</b>
<b>Grand Total</b>	<b>2742</b>	<b>-8</b>	<b>2734</b>	<b>-123</b>	<b>-65</b>	<b>2546</b>

Table B.11.3 – Ofwat’s Draft CIS assessment

	Adjusted DPB	Risk and Scope Adj	Draft CIS Eff	Draft CIS G&C	Draft CIS net
<b>Water</b>					
Maintenance - IRE	168	-56	25	-6	131
Maintenance - MNI	189	-62	-1	-1	125
Quality Enhancements	46	-10	3		39
Enhanced LoS	41	-22	4		23
Supply Demand	167	-37	3	-18	115
<b>Water Total</b>	<b>611</b>	<b>-187</b>	<b>34</b>	<b>-25</b>	<b>433</b>
<b>Wastewater</b>					
Maintenance - IRE	198	-103	2	-13	84
Maintenance - MNI	724	-88	-144		492
Quality Enhancements	672	-86	-120		466
Enhanced LoS	190	-151	-1		38
Supply Demand	339	-213	-14	-24	88
<b>Wastewater Total</b>	<b>2123</b>	<b>-641</b>	<b>-277</b>	<b>-37</b>	<b>1168</b>
<b>Grand Total</b>	<b>2734</b>	<b>-828</b>	<b>-243</b>	<b>-62</b>	<b>1601</b>

Ofwat’s approach to setting the CIS baseline involved a series of challenges to our programme including:

- Reductions reflecting Ofwat’s view on risk and scope (-£828m) of which:
  - Reductions arising from Ofwat’s AMA scoring system (-£309m)
  - Reductions arising from Ofwat’s view of enhancements (-£519m)
- Reductions reflecting Ofwat’s view of efficiency (-£243m)
- A minor change to Grants and Contributions (+£3m)

#### B.11.3.1 AMA Scoring

We were disappointed in Ofwat’s assessment of our AMA score. It is clear that Ofwat did not take full account of information which we provided in the Draft Business Plan outside part B3. The effect of the four scores, represented in table B.11.4 below, resulted in a £309m gap between capital expenditure included in the Draft Business Plan and Ofwat’s view of the Draft CIS baseline.

We have engaged consultants (Black and Veatch) to give us an independent view on our true AMA score as assessed using the AMPAP approach and the results of this investigation are summarised in table B.11.4.

Table B.11.4 – Comparison of Ofwat and Black & Veatch AMPAP assessment of Southern Water

Service	Ofwat score	B&V Score
Water Maintenance IRE	1.48 (29.6%)	3.48 (69.6%)
Water Maintenance MNI	1.87 (37.4%)	3.48 (69.6%)
Wastewater Maintenance IRE	1.96 (39.2%)	3.55 (71.0%)
Wastewater Maintenance MNI	1.63 (32.6%)	3.33 (66.6%)

Black and Veatch visited the offices of Southern Water and saw the approach taken to asset management planning.

We have held meetings with Ofwat since publication of the AMA spider diagrams and Mark Worsfold has visited Southern Water to be presented with our approach to asset management planning. He acknowledged that our likely Final Business Plan AMA scores would, from what he had seen, rise from the Draft Business Plan initial assessment. Applying appropriate AMA scores similar to the Black and Veatch assessment would have increased the draft CIS by around £140M.

We are disappointed with the scoring mechanism of AMA. Whilst we recognise the value of the AMPAP assessment our primary concern is the way which Ofwat has interpreted these scores when setting the baseline.

We have three key concerns with Ofwat's use of AMPAP when defining the baseline for CIS:

- Unless a company achieves an AMA score of 100%, the Ofwat mechanism does not provide for the allowed return to investors regardless of the actual need for investment.
- The 'two-sided' exposure to AMA challenge that Ofwat has adopted creates a disincentive to apply for an up-lift in funding even if it is genuinely required.
- For a company like Southern Water, with a significantly growing asset base including shorter life assets, maintenance must be increased progressively to ensure serviceability. Ofwat's starting position of historic expenditure does not recognise this.

### B.11.3.2 Scope Changes

Ofwat removed £519m from the draft business plan enhancement expenditure for one or more of the following stated reasons:

- There was insufficient evidence to support the proposal (-£128m) (B.11.3.2.1)
- The costs of the scheme were streamlined costs (-£8m) (B.11.3.2.2)
- The unit costs of the programme were comparatively high (-£351m) (B.11.3.2.3)
- It was not demonstrated that the scheme was the optimal solution (-£27m) (B.11.3.2.4)
- The benefits of the scheme did not outweigh the costs (-£4m) (B.11.3.2.5)

#### B.11.3.2.1 Insufficient evidence to support the proposal

*Table B.11.5 – Reductions due to insufficient evidence*

<b>Insufficient Evidence</b>	<b>Pre Efficiency Reduction</b>	<b>Draft Baseline CIS Reference</b>
Investigating Wind feasibility	£0.019m	p32
Resilience Schemes	£33.800m	p47
Wastewater Quality	£94.064m	p36
<b>Total</b>	<b>£127.883m</b>	

In the above cases Ofwat removed investment from the Draft Baseline because in its view, there was not sufficient evidence supporting the need for the scheme. We have reviewed all enhancements schemes and have met with Ofwat to understand what evidence is required. In Part B6 of our Final Business Plan, we have provided evidence of the risk that customers

currently face and an assessment of how that risk will change after the proposed investment has been made.

Under the CIS mechanism there is a strong incentive to either have a strong case for investment for which one is entirely confident of being funded, or to leave the proposed investment out of the programme. This is particularly the case with resilience schemes, where the capital cost of the investment may be significant but the return periods of the event occurring is low. For these low frequency, high consequence events it is quite correctly important to have a strong evidence base before agreeing funding.

Ofwat removed all resilience schemes in the Draft CIS for 'uncertainty'. We cannot have the CIS baseline ratio adversely impacted by such a simplistic difference in approach between Southern Water and Ofwat. We have therefore omitted the provisional solutions in the Final Business Plan and instead included funding for investigations in AMP5 to clarify detailed resilience schemes. We will submit the optimal solution after the study under the change protocol process for logging up and/or interim determination of K (IDOK).

For our Final Business Plan we have included proposals to reduce the significant risk of serious flooding in Portsmouth. We have provided Ofwat with detailed reports and have demonstrated a comprehensive understanding of the catchment. We explain in part B6 how we have had a number of recurrent recent near miss events in the catchment and we explain the consequence of a repeat event similar or worse than the year 2000 event. We have included investment in our Final Business Plan to address the problem analysed into three separate components of intervention:

- A new overflow supported by the EA
- Surface water separation
- Enhancement to the storm screens at Eastney pumping station.

All the components must be carried out for the scheme to be a success. We have demonstrated this in our specific appendix on Eastney. In particular, the EA will not consent the new overflow unless surface water is removed by implementing the other components of the scheme, in order to minimise spill frequency.

Ofwat has indicated that they will not allow the development of wind power generation to be financed through charges to customers. We agree and have therefore removed the wind feasibility scheme from the Final Business Plan.

#### **B.11.3.2.2 Streamlined scheme costs**

There are a number of occasions in Ofwat's Draft CIS paper where an apparent arbitrary 15% of the costs of the scheme have been removed because the DBP costs were "streamlined" and detailed costs of the schemes were not provided.

Between Draft and Final Business Plans we have developed detailed costs for all specific schemes identified. As one would expect from more detailed scheme development, in some cases the cost has increased and in others the cost has reduced. Overall our experience of this exercise has shown that our outline costs in total were broadly correct. We therefore expect Ofwat's next CIS assessment to remove these arbitrary reductions.

In total Ofwat made £94m of reductions to schemes included in the Draft Business Plan under Environmental Quality Drivers. Details of the reductions made to schemes driven by statutory legislation are provided in Table B.11.6.

*Table B.11.6 – Reductions to the Quality programme  
 (source: Table 21 of the Draft CIS)*

	DBP pre transfers*	DBP post transfers	Draft CIS Baseline*	Reduction
Miscellaneous A21	86.829	50.535	17.774	-32.761
Flow Schemes	0	36.294	31.56	-4.734
Groundwater	66.24	66.24	61.744	-4.496
WFD	2.892	2.892	2.892	0
Freshwater	39.109	39.109	36.543	-2.566
BWD	13.12	13.12	11.482	-1.638
SWD	21.379	21.379	19.135	-2.244
CroW Act	5.191	5.191	4.922	-0.269
Bio D AP	6.538	6.538	1.307	-5.231
Habitats Directive	100.041	100.041	97.097	-2.944
UWWTD	255.19	255.19	239.116	-16.074
WFD	25.023	25.023	21.27	-3.753
First Time Sewerage	17.356	17.356	0	-17.356
SEMD	0	33	33	0
<b>Total</b>	<b>638.908</b>	<b>671.908</b>	<b>577.842</b>	<b>-94.066</b>

Ofwat removed £8m from the proposed scheme to progress development of an incinerator so that we could balance the risk that we currently face regarding disposal of sludge. Our consultants MWH provided a detailed report with a thorough breakdown of costs and we have reviewed these costs with MWH and our reporter Halcrow and made adjustments to update on-costs.

We have reviewed all of Ofwat’s challenges to scope and drivers. We agree with the deletion of First Time Sewerage and will bring schemes forward under change protocol if the applicants are successful at appeal.

A comparison of the Final Business Plan Quality Programme to the CIS is shown later in this document in table B.11.29.

*Table B.11.7 – Reductions to schemes where Ofwat argue a lack of detailed costs*

Outline costs	Reduction	Draft CIS Reference
Incineration	£8m	p39
<b>Total</b>	<b>£8m</b>	

### **B.11.3.2.3 Unit Cost Analysis**

Ofwat have removed a proportion of investment from our Draft Business Plan enhancement programme arguing that Southern Water’s costs are high compared to others in the industry.

*Table B.11.8 – Reductions due to Ofwat's views on unit costs*

<b>Unit Costs</b>	<b>Reduction</b>	<b>Draft CIS Reference</b>
<b>Supply Demand</b>		
Sewage Treatment Growth	£25.020m	p41/42
Sewerage Growth	£1.200m	p41/42
New Development	£186.986m	p41/42
<b>Metering</b>		
Metering unit costs	£19.961m	p40
<b>Flooding</b>		
Additions	£1.200m	p45
Internal known programme	£25.500m	p46
Known low risk problems	£2.600m	p46
External Schemes	£38.700m	p46
Mitigation	£3.360m	p47
Eastney	£90.000m	p47
Transferred to Capital Maintenance	-£43.370m	p45
<b>Total</b>	<b>£351.157m</b>	

We have provided a cost base submission and demonstrated through the reporting and audit function that our scheme costs are based upon the same cost base curves.

Our Final Business Plan includes schemes that have clearly calculated costs, and that are beneficial. Comparing unit costs to other companies appears to be a duplication of the function of the cost base exercise for which efficiency targets are set. We consider that where schemes have clear costs and that the outputs associated with these schemes are shown to be cost beneficial, the schemes should be funded in full.

For the flooding schemes, we have reviewed the cost per property analysis between Draft and Final Business Plans and this has resulted in a reduction in the scale of the flooding programme. We have explained our approach to this in part B6 and C1 of the Final Business Plan.

For wastewater infrastructure supply demand schemes we have presented our Final Business Plan in unit costs terms because this is the way in which Ofwat assessed the Draft Business Plan. We have held meetings with Paul Hope and Peter Jordon at Ofwat (February 09) to confirm our approach in the final submission. Close agreement between historic and future unit costs is demonstrated in Part B5 of this Final Business Plan.

#### B.11.3.2.4 Optimal solution not demonstrated

Table B.11.9 – Ofwat reductions challenging the optimal solution

Optimal solution not proven	Reduction	Draft CIS Reference
<b>Water Quality</b>		
5WA6 - Brede	£4.248m	P33
5WA7 - Fawkham	£0.522m	P33
SEMD	£5.354m	P33
Renewables	£0.920m	p31
Metering Optimal Solution	£16.396m	p40
<b>Total</b>	<b>£27.440m</b>	

Ofwat removed investment for Brede WSW from the draft CIS baseline. However, the scheme has been supported by the DWI and we have applied for logging up to progress the scheme during this AMP period. We expect Ofwat to reflect this investment in our 2009/10 RCV.

The Fawkham scheme was subject to an arbitrary 15% reduction because Ofwat was not convinced the optimal solution was proposed. We have reviewed the scheme and provided detailed costs in our Final Business Plan.

Southern Water had reduced costs for SEMD schemes by £306k because between Audit and Draft Business Plan submission we had identified further cost reduction. Ofwat viewed this as uncertainty and struck another 15% out of the programme. We are disappointed with this approach which acts as a clear disincentive to provide the most accurate numbers available. We have reviewed our Final Business Plan with the reporter and with Defra and they are supportive of our final SEMD programme.

Having deducted £20m from our metering proposals on unit costs grounds, Ofwat have removed a further £16m because it is not convinced that metering is the optimal solution. We have developed much more detail on our metering proposals. The cost benefit case has been proven. The proposals are a significant critical element of our Water Resources Management Plan. The EA have welcomed our focus on demand side (leakage and metering) measures to maintain our security of supply. We will not be able to deliver our metering programme if our final proposals are cut as they were in the Draft CIS.

#### B.11.3.2.5 The benefits of the scheme did not outweigh the costs

Table B.11.10 – Ofwat's reductions regarding Cost Benefit Analysis

Cost benefit	Reduction	Draft CIS Reference
Odour at Portswood	£4.545m	Page 44
<b>Total</b>	<b>£4.545m</b>	

This scheme has been removed from the Final Business Plan.

#### B.11.3.2.6 Efficiency

We have raised our concerns regarding the rigid use of the cost base in the Draft CIS, with Ofwat at PR04 and again in the build up to PR09 (ref: Letter from Colin Harley to Keith Mason 8 January 2009). This process must be completed thoroughly before it can be used as a tool to assess relative efficiency and we have explained this in Part C2 of our Final Business Plan. We are pleased that Ofwat has decided to investigate material differences in cost base submissions but frustrated that the investigation which we sought from an early stage in PR09 is only just getting underway now at the time of Final Business Plan submissions. We have

refined our efficiency assumptions but this has yet to be fully informed by the cost-base process because of the delay in the Ofwat outlier investigation.

For certain data points, e.g. screens, where our costs appear to be double that of any other Sewerage Company it is clear to us that this is not simply a matter of gross inefficiency but a difference in the way that costs are reported. We look forward to contributing to the Jacobs investigation and we expect that Ofwat's view of our relative efficiency will be revised accordingly in the next version of the CIS baseline.

#### **B.11.3.3 Conclusions on Draft CIS baseline**

There are some general points on the use of the CIS baseline which we consider make the draft CIS baseline seriously understated and these are as follows:

- Arbitrary deductions.
- The AMA score does not reflect Southern Water's asset management capabilities and is not reflective of all the information in the Draft Business Plan.
- Incompleted efficiency cost-base process.

This approach makes the system biased to lower returns and is reflected in the draft CIS baselines set for the whole industry.

We have written to Ofwat (Les Dawson to Regina Finn, March 2009) outlining our disappointment with the Draft CIS baseline. The letter explains that the Draft CIS process severely disadvantaged Southern Water compared to other companies.

We expect that the CIS process will allow Southern Water a further opportunity to revise its Final Business Plan capex to reflect the latest information in the iteration process towards the final baseline determination.

#### **B.11.3.4 Our Final Asset Plan**

The movement in expenditure in our Draft and Final Asset Plan is summarised in B.11.11. The Final Asset Plan reflects the feedback that we have received through our ongoing consultation with customers and the revision on costs and outputs which we have carried out since the Draft Business Plan submission stage.

We have specifically addressed all the points Ofwat raised in its Draft CIS baseline. Appendix B.11.A provides the trail and route map from the Ofwat Draft CIS to the Final Business Plan. We have also included tables in this section to assist the understanding of how we have reacted to the Draft CIS challenge.

Our revisions have resulted in a more concise asset plan which, if correctly funded, will enable us to deliver service to customer expectations moving us the first step towards the goals set out in our Strategic Direction Statement.

Table B.11.11 – Southern Water's Draft and Final Asset Plan

	Adj DBP	Eff	G&C	DBP Net	FBP	Eff	G&C	FBP Net
<b>Water</b>								
Maintenance IRE	168	-3	-6	159	132	-1.0	-6.56	125
Maintenance - MNI	189	-6	-1	182	176	-1.2	-0.25	175
Quality Enhancements	46	-1		45	37	-0.3		37
Enhanced LoS	41	-1		40	21	-0.2		21
Supply Demand	167	-4	-17	146	211	-1.6	-17.57	192
<b>Water Total</b>	<b>611</b>	<b>-15</b>	<b>-24</b>	<b>572</b>	<b>577</b>	<b>-4.3</b>	<b>-24.38</b>	<b>548</b>
<b>Wastewater</b>								
Maintenance - IRE	198	-7	-13	178	136	-1.0	-7.38	128
Maintenance - MNI	724	-44		680	667	-52.0	0	615
Quality Enhancements	672	-31	-	641	683	-41.8		641
Enhanced LoS	190	-9	-	181	115	-5.0		110
Supply Demand	339	-17	-28	294	149	-5.4	-30.55	113
<b>Wastewater Total</b>	<b>2,123</b>	<b>-108</b>	<b>-41</b>	<b>1,974</b>	<b>1,750</b>	<b>-105</b>	<b>-37.93</b>	<b>1,607</b>
<b>Grand Total</b>	<b>2,734</b>	<b>-123</b>	<b>-65</b>	<b>2,546</b>	<b>2,327</b>	<b>-109</b>	<b>-62</b>	<b>2,156</b>

#### B.11.4 Our view of the Final Baseline for maintenance

There is no certainty to the methodology for assessing the AMA score for Final Business Plans and there is an ongoing investigation into differences in the cost base returns made by companies. Because of these two ongoing issues it is not possible to make an informed judgement of where Southern Water sits in terms of both AMA and efficiency. For these reasons we have entered CIS ratios in ICS tables B11.1 and B11.2 of 1.00. We cannot claim to be under or over the likely next CIS baseline when the methodology for calculating it is in a state of flux.

For the purposes of complying with the reporting requirements we have completed an illustrative assessment of the Final Business Plan replicating Ofwat's Draft CIS baseline approach in table B.11.12.

Table B.11.12 – AMA Assessment of Final Business Plan using Ofwat’s Draft Business Plan methodology

		Sub Services expenditure in £m					
		WIRE	WMNI	SIRE	SMNI	Total	
<b>1</b>	<b>Southern Water Final Business Plan</b>	132	176	136	667	1112	
<b>2</b>	<b>Exceptional Items</b>	AMP5 Meter Replacement		7		7	
		Progress the Incineration Route			51	51	
		Brighton and Hove WTW CHP			3	3	
		Hydro Energy Recovery			5	5	
		Eastney Flooding			15	15	30
		Restoring Serviceability		20	7		27
	<b>Total</b>	<b>0</b>	<b>27</b>	<b>22</b>	<b>74</b>	<b>123</b>	
<b>3</b>	<b>AMA Challenge</b>	AMP4 Adjusted Expenditure	128	135	114	606	983
		Expenditure Subject to AMA	9	28	0	0	37
		AMA Challenge %	30.4%	30.4%	29.0%	33.4%	
		AMA Challenge £m	-3	-9	0	0	-11
		Company view - exceptionals	132	149	114	593	989
		Result of AMA challenge	130	168	136	667	1100
<b>4</b>	<b>Grants &amp; Contributions</b>	-6.56	-0.25	-7.38	0	-14	
<b>5</b>	<b>Expenditure Totals</b>						
	<b>AMA (Net of G&amp;C)</b>	<b>123</b>	<b>167</b>	<b>129</b>	<b>667</b>	<b>1086</b>	
	<b>Company View Net of (G&amp;C's)</b>	<b>126</b>	<b>176</b>	<b>129</b>	<b>667</b>	<b>1097</b>	

This table clearly shows that our asset maintenance proposals in the Final Business Plan are very close to a number likely to be derived by the AMA process when it is finalised. Given the uncertainties in the process and this reasonable alignment we would suggest that Ofwat should simply accept all four of Southern Water’s Final Business Plan sub service proposals unadjusted.

We have not incorporated the results of this illustration of AMA modelling in our assessment of the final baseline because Ofwat has indicated that it will adopt a different approach when assessing Final Business Plans.

We have made several adjustments to our Final Business Plan following the successful consultation on our Draft Business Plan.

We have also modified our Final Business Plan so that the relevant information for AMA assessment is gathered in Part B3 for the submission.

In the following tables all Ofwat figures are presented on a post transfers and post efficiency basis as requested. We also for clarity comment on the pre-efficiency changes.

## B.11.5 Water service – Maintenance - Infrastructure Renewals

Table B.11.13 – Water Service - Below Ground

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£159m	Ofwat draft CIS Baseline	£131m
Company Final Business Plan	£125m	Co. view of final baseline	£125m
Difference	£-34m	Difference	£-6m
Reconciliation			
• Changes in pre efficiency expenditure	£-36m		
• Changes to efficiency assumptions	£+2m	• New evidence	£-6m
• Proposed changes in outputs package	£0m	• Proposed changes in outputs package	

### B.11.5.1 Changes to Pre efficiency expenditure

The £-36m driving change in this service area consists of:

- £-34 revised investment drivers
- £-2m increase of contributions for diversions

We have carried out a revision of the costs curves used to optimise the outputs required to maintain serviceability. This represents a step forward from our Draft Business Plan in which we had 'streamlined costs' for some elements.

We have refined our deterioration modelling using improved input data and this has enhanced our understanding of the future mode of our assets.

We have also included investment for diversions at £+8m. These are fully funded by Grants and Contributions which were forecast at £6m in the Draft Business Plan. Our Final Business Plan therefore has a net reduction in investment of £2m.

### B.11.5.2 Changes to Efficiency Assumptions

We have checked the detailed costs of schemes to assess the risk at programme level using Monte Carlo analysis and we have found that our cost risk for our planned activity is approximately a 'P50'. In other words, there is a 50% probability that our turn costs will be higher or lower than those included in the plan. This demonstrates our commitment to including a central estimate in our Final Business Plan.

Our efficiency assumptions are explained in Part B2. We remain of the view that we are a leading company in this service area and this has resulted in the forecast expenditure being below the baseline for this service area. Our revised efficiency assumptions account a reduction on £1m capex compared to a reduction of £3m in the Draft Business Plan. Hence £+2m.

### B.11.5.3 Changes in Outputs

We have reviewed the service levels and tolerances that we have included in our Final Business Plan and this has resulted in some modification to the tolerances that we submitted in our Draft Business Plan. However the key output of stable serviceability as measured by the key serviceability indicators remains our key focus for this service area.

#### B.11.5.4 Views on the Draft CIS Baseline

Ofwat assessed our AMA score as 30% resulting in a reduction to the Draft Business Plan figure of £56m. We have brought in consultants to provide an independent assessment of our AMA score under the UKWIR AMPAP guidelines and they concluded that for Water Infrastructure, our score should be much higher (see B.11.3.1).

We do not agree with Ofwat's method of challenging expenditure as set out in the Draft CIS baseline because unless 100% is scored under AMA a company will not receive the allowed return. We have raised this with Ofwat at our meetings between Draft and Final Business Plan submissions.

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- Our independent assessment of AMA demonstrates good asset management planning
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

#### B.11.6 Water service – Maintenance – Non-Infrastructure

Table B.11.14 – Water Service Non-Infrastructure

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£182m	Ofwat draft CIS Baseline	£125m
Company Final Business Plan	£175m	Co. view of final baseline	£175m
Difference	-£7m	Difference	+£50m
Reconciliation			
• Changes in pre efficiency expenditure	-£14m		
• Changes to efficiency assumptions	+£5m	• New evidence	+£50m
• Proposed changes in outputs package	£0m	• Proposed changes in outputs package	£0m

##### B.11.6.1 Changes to Pre efficiency expenditure

Ofwat transferred £16m out of this expenditure category to other areas of the Draft Business Plan when assessing AMA. We have recognised this and restated our Draft Business Plan in table B.11.14 above accordingly.

We have carried out a revision of the costs curves used to optimise the outputs required to maintain serviceability. This represents a step forward from our Draft Business Plan in which some costs were inevitably streamlined.

We have refined our business plan using improved input data and this has enhanced our understanding of the behaviour of our assets.

This has reduced capital expenditure in the Final Business Plan by £14m.

As stated in our SDS, maintaining good drinking water quality is our top priority and we cannot allow this service to become marginal. Ofwat have raised concern with this indicator (ref: Derek Parsons to Colin Harley August 2008) in which the service was referred to as "borderline" with Southern Water given a 'warning' regarding its performance. There is strong evidence from our risk analysis that without increased investment in Water Treatment we will fall to a marginal serviceability status and we have explained our work to understand this in part B3 of our Final Business Plan.

#### **B.11.6.2 Changes to Efficiency Assumptions**

We have checked the detailed costs of schemes to assess the risk at programme level using Monte Carlo analysis and we have found that our cost risk for our planned activity is approximately a 'P50', i.e. there is a 50% probability that our turn costs will be higher or lower than those included in the plan. This demonstrates our commitment to including a central estimate in our Final Business Plan.

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to add £5m to net capex.

#### **B.11.6.3 Changes in Outputs**

There are no changes in outputs in this section as we intend to maintain serviceability within the tram lines explained in Part B3.

#### **B.11.6.4 Views on the Draft CIS Baseline**

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- Our independent assessment of AMA demonstrates good asset management planning.
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

## B.11.7 Water service – Enhanced Service Levels

Table B.11.15 – Water service – Enhanced Service Levels

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£40m	Owat draft CIS Baseline	£23m
Company Final Business Plan	£21m	Co. view of final baseline	£21m
Difference	-£19m	Difference	-£2m
Reconciliation			
• Changes in pre efficiency expenditure	-£4m		
• Changes to efficiency assumptions	+£1m	• New evidence	£0m
• Proposed changes in outputs package	-£16m	• Proposed changes in outputs package	-£2m

### B.11.7.1 Changes to Pre efficiency expenditure

After transfers a total of £4m pre efficiency investment was included in this service area. Our final business plan pre efficiency investment is reduced by -£4m which arises from an improved scheme solution for Woolmans Wood rehabilitation.

The proposed improvements to Drinking Water Quality identified at Woolmans Wood is cost beneficial and supported by the DWI and should be allowed in full. Ofwat transferred this scheme from Quality at Draft CIS stage.

### B.11.7.2 Changes to Efficiency Assumptions

Our revised efficiency calculations explained in Part B2 have reduced efficiency savings by £1m.

### B.11.7.3 Changes in Outputs

We have re-assessed the resilience scheme included in this section at the Draft Business Plan stage in light of Ofwat's Draft CIS report. We have not yet been able to clearly demonstrate that these schemes are cost beneficial and that the optimal solution is fully defined so it has been removed from the capital programme. Ofwat likewise removed all resilience schemes in the Draft CIS for 'uncertainty'. We cannot have the baseline ratio adversely impacted by such a simplistic difference in approach between Southern Water and Ofwat. We have therefore omitted the provisional solutions in the Final Business Plan and instead included funding for investigations in AMP5 to clarify the detailed scheme. We will submit the optimal solution after the study under the change protocol process for logging up and/or intermediate determination of K (IDOK).

-£16m Removal of the flood resilience scheme ref SRN/CCP/01

### B.11.7.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have carried out extensive cost benefit analysis to define what should be in our Final Business Plan and it is reflective of customers' wishes.
- We have provided full detailed costs for all enhancement schemes.
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

## B.11.8 Water service – Supply Demand Balance

Table B.11.16 – Water service – Supply Demand Balance

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£146m	Ofwat draft CIS Baseline	£115m
Company Final Business Plan	£192m	Co. view of final baseline	£192m
Difference	+£46m	Difference	+£77m
Reconciliation			
• Changes in pre efficiency expenditure	-£14m		
• Changes to efficiency assumptions	+£2m	• New evidence	+£19m
• Proposed changes in outputs package	+£58m	• Proposed changes in outputs package	+£58m

### B.11.8.1 Changes to Pre efficiency expenditure

The total change in pre efficiency capital expenditure is -£14m and is driven by the following:

- -£7m Arising from development of the metering programme
- -£4m Lower new development capex
- -£3m Adjustments to growth schemes

We have reviewed our metering costs having carried out a comprehensive review of the options and assessing the most appropriate technology to install. Our metering programme is £7m less than that included in our Draft Business Plan. We explain why and how we have selected this solution in Part B5 of our Business Plan.

The Draft Business Plan included an allowance for Grants and Contributions of £16.5m of which £2.5m was requisitions and other contributions and the remaining £14m was infrastructure charges. Following revision of our new connection forecast our forecast infrastructure charge receipts are expected at £12m making a net addition to capex of £2m.

### B.11.8.2 Changes to Efficiency Assumptions

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to add £2m to net capex.

### B.11.8.3 Changes in Outputs

At the time of submitting our Draft Business Plan we were in negotiations with the EA regarding a scheme to reduce abstraction at the River Itchen. The proposed solution at the time was in the region of £100m and we contested that this did not represent good value for customers. We did not include the project in our Draft Business Plan even though Ofwat advised that we should include the scheme in our Plan at our Draft Business Plan meeting.

We have progressed discussions with the EA and have concluded that sustainable abstraction can be continued with a scheme to ensure water supplies to customers are

maintained costing £58m (pre-efficiency). Our commitment to challenge the EA and to find the most sustainable solution has resulted in a direct saving to the capital programme of some £50m post efficiency. We have explained this further in Part B5.

#### B.11.8.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have demonstrated in Part B5 that our scheme selections including metering are the most cost effective way to balance supply and demand.
- We have provided full detailed costs for all enhancement schemes.
- We have proposed reasonable ongoing efficiency targets.

Table B.11.17 – Water service – supply demand schemes (pre-efficiency)

Pre-efficiency	Adj DBP £m	FBP £m
Universal metering	130.1	123.2
River Arun Tidal Abstraction	15.3	18.2
Testwood WSW improvements	0	58.3
Infrastructure supply demand	0.2	0
Cross Solent Main	3.4	0
E282 Winter Refill	3.0	0
Requisition	15	11
Total	167	211

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

#### B.11.9 Water service – Quality Enhancements

Table B.11.18 – Water service – quality enhancements

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£45m	Ofwat draft CIS Baseline	£39m
Company Final Business Plan	£37m	Co. view of final baseline	£37m
Difference	-£8m	Difference	-£2m
Reconciliation			
• Changes in pre efficiency expenditure	+£2m		
• Changes to efficiency assumptions	£0m	• New evidence	£0m
• Proposed changes in outputs package	-£10m	• Proposed changes in outputs package	-£2m

##### B.11.9.1 Changes to Pre efficiency expenditure

The change in pre-efficiency expenditure of +£2m arises from detailed cost analysis of the Draft Business Plan schemes.

##### B.11.9.2 Changes to Efficiency Assumptions

There are no material changes to the programme arising from changes to efficiency assumptions

### B.11.9.3 Changes in Outputs

Changes in outputs total +£10m and are driven by the following changes:

- -£14m SEMD reduced requirements following discussions with Defra
- +£4m investigations under NEP programme.

We have had detailed discussions with Defra regarding our compliance with SEMD and have worked hard to optimise the required outputs. This is reflected in the reduction in AMP5 expenditure although this has arisen from optimising the solutions rather than removing it.

An additional £4m has been included in the Final NEP for studies at the River Test Ref: RSA/SOHA0003 and at Lewes Winterbourne Ref: GB107041012450, details of which are provided in Part C4.

### B.11.9.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have demonstrated in Part B4a that our scheme selections is the most cost effective for dealing with the prevailing water quality issues.
- We have provided full detailed costs for all enhancement schemes.
- We have proposed reasonable ongoing efficiency targets.

Table B.11.19 – Water service – breakdown of expenditure on quality enhancement (pre-efficiency) (Source: Table 19, draft CIS baseline)

Drinking Water Quality and Other New Obligations (pre-efficiency)	Capital Expenditure 2010-15 (£m)			
	DBP	Adj DBP	Draft CIS Baseline	FBP
<b>Water Treatment</b>				
5WA4 turbidity reduction	2.643	2.643	2.643	0
5WA6 pesticide removal	5.126	5.126	0.878	0
5WA7 other	3.478	3.478	2.956	3.671
Hw3 – Habitats	0	0	0	2.822
BAPw1 – Biodiversity Action Plan	0	0	0	2.228
<b>Water Distribution</b>				
5WA9 replacement activity to fulfil S19 undertakings	25.544	0	0	0
<b>Other Obligations</b>				
5WA11 Other non-statutory improvements to drinking water quality	0	0	0	7.32
5WA13 Security and Emergency Measures Direction	35.692	35.692	30.338	20.590
5WA15 - Miscellaneous	0	0	0	0.455
<b>Quality Programme for the Water Service</b>	<b>72.483</b>	<b>46.939</b>	<b>36.815</b>	<b>37.086</b>

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

## B.11.10 Wastewater service – Maintenance Infrastructure Renewals

Table B.11.20 – Wastewater service – maintenance infrastructure renewals

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£178m	Ofwat draft CIS Baseline	£84m
Company Final Business Plan	£128m	Co. view of final baseline	£128m
Difference	£-50m	Difference	£+44m
Reconciliation			
• Changes in pre efficiency expenditure	£-55m		
• Changes to efficiency assumptions	£+6m	• New evidence	£+44m
• Proposed changes in outputs package	£0m	• Proposed changes in outputs package	£0m

### B.11.10.1 Changes to Pre efficiency expenditure

Key Drivers of change in this service area are:

- Integration of the infrastructure maintenance programme with other drivers £-50m
- Revisions to Grants and Contributions £-5m

We have integrated a number of wastewater infrastructure schemes with other programmes in particular the flooding programme under enhancements and the growth programme. This has resulted in significant savings in pre efficiency expenditure without affecting our forecast outputs.

As per the water service we have also revised our assumptions about Grants and Contributions and therefore net capex has reduced.

### B.11.10.2 Changes to Efficiency Assumptions

We have checked the detailed costs of schemes to assess the risk at programme level using Monte Carlo analysis and we have found that our cost risk for our planned activity is approximately a 'P50'. In other words, there is a 50% probability that our turn costs will be higher or lower than those included in the plan. This demonstrates our commitment to including a central estimate in our Final Business Plan.

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to add £6m to investment.

### B.11.10.3 Changes in Outputs

There are no changes in serviceability outputs in this service area.

### B.11.10.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have carried out extensive integration of our maintenance programme.
- Our independent assessment of AMA demonstrates good asset management planning.
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

### B.11.11 Wastewater service – Maintenance Non-Infrastructure

Table B.11.21 – Wastewater service – maintenance non-infrastructure.

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£680m	Ofwat draft CIS Baseline	£492m
Company Final Business Plan	£615m	Co. view of final baseline	£615m
Difference	-£65m	Difference	+£123m
Reconciliation			
• Changes in pre efficiency expenditure	-£57m		
• Changes to efficiency assumptions	-£8m	• New evidence	+£123m
• Proposed changes in outputs package	£0m	• Proposed changes in outputs package	£0m

#### B.11.11.1 Changes to Pre efficiency expenditure

We have integrated £62m of investment in Wastewater treatment works with our Quality and Supply Demand programmes. This is in accordance with RAG 2. Other adjustments in pre-efficiency expenditure amount to £5m of additional investment.

#### B.11.11.2 Changes to Efficiency Assumptions

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to remove a further £8m from investment.

#### B.11.11.3 Changes in Outputs

There are no material changes in outputs package as we remain committed to deliver stable serviceability from this asset group.

#### B.11.11.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have carried out extensive integration of our maintenance programme.
- Our independent assessment of AMA demonstrates good asset management planning.
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

## B.11.12 Wastewater service – Sludge management

Changes in sludge management expenditure are shown in table B.11.22.

Table B.11.22 – Wastewater service – sludge management expenditure (pre-efficiency)  
(source table: table 23, draft CIS)

Sludge management programme expenditure				
Pre-efficiency	Quality	Supply Demand	Capital Maintenance	Total
DBP (£m)	10.77	Nil	83.40	94.17
Draft CIS (£m)	10.77	Nil	75.41	86.18
FBP (£m)	7.37	18.58	51.09	77.04

The change in supply demand is as a result of a change in allocation of costs. Costs were previously allocated to capital maintenance.

## B.11.13 Wastewater service – Enhanced service levels

Table B.11.23 – Wastewater service – enhanced service levels

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£181m	Ofwat draft CIS Baseline	£38m
Company Final Business Plan	£110m	Co. view of final baseline	£110m
Difference	-£71m	Difference	+£72m
Reconciliation			
<ul style="list-style-type: none"> <li>Changes in pre efficiency expenditure</li> </ul>	-£3m		
<ul style="list-style-type: none"> <li>Changes to efficiency assumptions</li> </ul>	+£4m	<ul style="list-style-type: none"> <li>New evidence</li> </ul>	
<ul style="list-style-type: none"> <li>Proposed changes in outputs package</li> </ul>	-£72m	<ul style="list-style-type: none"> <li>Proposed changes in outputs package</li> </ul>	-£72m

### B.11.13.1 Changes to Pre efficiency expenditure

We have provided detailed costs for a number of schemes in the enhancement programme.

We have included the Eastney scheme in three components, all of which must be carried out for the scheme to be successful. We have demonstrated this in our specific appendix on Eastney. In particular, the EA will not consent the new overflow unless surface water is removed by implementing the other components of the scheme, in order to minimise spill frequency.

### B.11.13.2 Changes to Efficiency Assumptions

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to add £4m to investment.

### B.11.13.3 Changes in Outputs

There has been a reduction of schemes included in the Final Business Plan for the sewer flooding programme. We have carried out Cost Benefit Analysis at project level rather than programme level.

#### B.11.13.4 Views on the Draft CIS Baseline

We consider that the Final CIS Baseline should reflect our Final Business Plan figure because:

- We have provided full detailed costs for all enhancement schemes in the projects database.
- We have provided a comprehensive Cost Benefit Analysis of the schemes included in the Final Business Plan.
- We have proposed reasonable ongoing efficiency targets.

We have therefore included a Final CIS baseline equal to our Final Business Plan proposals. We expect to be able to revisit this to reflect the latest information towards the final baseline determination.

Tables B.11.24 and B.11.25 show changes in expenditure on odour from sewage and sewer flooding.

Table B.11.24 – Wastewater service – expenditure on odour from sewage (source: table 25, draft CIS)

Description	Project reference	AMP5 capex total £m		
		Company DBP view	Draft CIS	Company FBP view
Aylesford	AGAS090043	1.348	1.348	2.126
Goddards Green	AGAS090046	1.735	1.735	3.007
Paddock Wood	AGAS090050	1.035	1.035	1.216
Peel Common	AGAS090051D	2.201	2.201	3.602
Portswood	AGAS090052D	4.545	0	0
Total		10.864	6.319	9.951

Table B.11.25 – Wastewater service – sewer flooding expenditure (pre-efficiency) (source: table 26, draft CIS)

Sewer flooding expenditure (£m)				
Pre-efficiency	ESL	Supply Demand	Capital Maintenance	Total
DBP	160.11	1.20	54.28	215.59
Draft CIS	31.97	11.30	10.91	54.18
FBP	103.028	37.369	40.619	181.016

#### B.11.14 Wastewater service – Supply Demand Balance

Table B.11.26 – Wastewater service – supply demand balance

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£294m	Ofwat draft CIS Baseline	£88m
Company Final Business Plan	£113m	Co. view of final baseline	£113m
Difference	-£181m	Difference	+£25m
Reconciliation			
• Changes in pre efficiency expenditure	-£193m		
• Changes to efficiency assumptions	+£12m	• New evidence	+£25m
• Proposed changes in outputs package	£0m	• Proposed changes in outputs package	£0m

#### **B.11.14.1 Changes to Pre efficiency expenditure**

We were disappointed that Ofwat did not make a two sided adjustment to the draft baseline in this service area following our meeting on the 5<sup>th</sup> November 2008 in which we suggested that supply demand investment could be cut by some £200m due to the changing economic outlook.

Our assessment of required expenditure involved working up specific schemes and including them in the Draft Business Plan based upon an assessment of likely development. Ofwat have adopted a unit cost approach to calculate the level of funding for future connections based upon historic expenditure.

Our Final Business Plan includes a number of changes in this service area from the Draft Business Plan including:

- We have clearly indicated in our Final Business Plan the distinct investment classified between Sewage Treatment Growth, New Development Growth, and Sewerage Growth.
- A major reduction in supply demand expenditure which is the result of the changing economic outlook.
- For sewerage infrastructure, our Final Business Plan is based on a unit rate that is derived from the average of specific schemes analysed for the Draft Business Plan, and re-analysed for the Final Business Plan. This provides clarity on the basis for which funding is required and allows a clear assessment for logging up/down purposes.
- We have reviewed all the sewerage non-infrastructure schemes proposed in the Draft Business Plan and retained four schemes which we are confident will be required in AMP5. We have also included two investigation schemes, and made an appropriate allocation to supply demand in the Quality programme.

We have discussed all infrastructure changes with the Supply/Demand Economics team at Ofwat prior to submission of the Final Business Plan and they have recognised the approach we have undertaken. This was agreed at a meeting between Barry Luck and Peter Jordon on the 9<sup>th</sup> March 2009.

Section B5 gives more detail on our approach to identifying Final Business Plan investment requirements.

The economic downturn coupled with our integrated asset plan has resulted in a reduction on £183m to pre- efficiency capex.

#### **B.11.14.2 Changes to Efficiency Assumptions**

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to add £12m to investment.

#### **B.11.14.3 Changes in Outputs**

We have revised and clarified the number of connections we expect to make during the period 2010-2015 and we have demonstrated the out-turn unit rate of our infrastructure schemes. This in turn reflects Ofwat's approach when setting the baseline and therefore can be clearly reflected for logging up or down purposes.

We have reduced significantly the number of specific schemes to deliver wastewater treatment capacity to meet demand. We have retained six of the non-infrastructure schemes proposed in the Draft Business Plan. We have also made appropriate allocation to supply demand in NEP schemes because the Quality programme includes schemes for catchments where new development is forecast. The Final Business Plan provides for 61% of the forecast increase in population.

We have explained our revised approach in Part B5 of our Final Business Plan.

#### B.11.14.4 Views on the Draft CIS Baseline

Ofwat's unit rate approach to setting the draft baseline included a number of assumptions on the unit costs of new connections. We have explained in part B5 more appropriate unit rates to use when assessing the final baseline.

Our view is that the final baseline should reflect our final business plan because we have (a) developed unit rates based upon real schemes that have detailed costs, and (b) plan to provide additional treatment capacity for 61% of the forecast increase in population. In part B5 we have explained changes in this unit cost. We have also expressed our concern at Ofwat's apparently flawed approach to assessing Grants and Contributions.

### B.11.15 Wastewater service – Quality Enhancements

Table B.11.27 – Wastewater service – quality enhancements

Business Plan reconciliation		Changes in CIS baseline	
Company Draft Business Plan	£641m	Ofwat draft CIS Baseline	£466m
Company Final Business Plan	£641m	Co. view of final baseline	£641m
Difference	-£0m	Difference	£175m
Reconciliation			
• Changes in pre efficiency expenditure			
• Changes to efficiency assumptions	-£11m	• New evidence	
• Proposed changes in outputs package	+£11m	• Proposed changes in outputs package	£175

We include below, a summary table of the key changes to the Quality programme between Draft and Final Business Plans.

Table B.11.28 – Wastewater – quality enhancements – proposed changes (post-efficiency).

Driver	Adj DBP £m	FBP £m	Variance £m
F>C	71.275	53.013	-18.262
Groundwater	63.465	83.134	19.669
WFD Chemicals	2.784	3.128	0.344
FFD	37.248	47.539	10.291
Bathing Waters	12.893	13.484	0.591
Shellfish Waters	20.487	14.692	-5.795
CRoW Act	4.999	3.714	-1.285
BAP	6.241	1.695	-4.546
Habitats	95.316	55.021	-40.295
UWWTD	245.512	281.653	36.141
WFD	23.724	40.084	16.36
FTRS	16.436	0.000	-16.436
SEMD	30.122	37.265	7.143
Sludge Q	10.009	6.769	-3.249
Intermittent Discharge	0.000	0.075	0.075
<b>Total</b>	<b>641</b>	<b>641</b>	<b>0</b>

### B.11.15.1 Changes to Pre efficiency expenditure

Changes to pre efficiency expenditure have been driven by the development of more detailed cost estimates for every Quality scheme.

### B.11.15.2 Changes to Efficiency Assumptions

We have revised our efficiency assumptions and these are reported in Part B2 of the Final Business Plan. The effect of this is to remove £5m from investment.

### B.11.15.3 Changes in Outputs

We have made an extensive challenge to the draft NEP both in terms of content and timing and this has resulted in a number of changes between draft and final Business Plans as well as delaying the timing of investment within the AMP5 period.

### B.11.15.4 Views on the Draft CIS Baseline

*Table B.11.29 – Wastewater service – quality enhancements – breakdown of expenditure by obligation (pre-efficiency). (Source: table 21, draft CIS.)*

Environmental and other new obligations Pre-efficiency	Capital Expenditure 2010-15 (£m)			
	DBP pre-transfer	DBP post-transfers	Draft CIS baseline	FBP
Miscellaneous (A21)	86.829	50.535	17.774	0
Flow Schemes (FLOW1)	0.000	36.294	31.560	57.799
Groundwater Directive (G1, G3, G4)	66.240	66.24	61.744	87.038
WFD – Chemicals (C1, C2, C3)	2.892	2.892	2.892	3.360
Freshwater Fish Directive (F1a)	39.109	39.109	36.543	51.601
Bathing Waters Directive (B1, rB3)	13.120	13.12	11.482	13.632
Shellfish Waters Directive (S1, S2)	21.379	21.379	19.135	15.826
CRoW Act (I1, I2, I5)	5.191	5.191	4.922	4.065
Biodiversity Action Plan (BAP1, BAP2)	6.538	6.538	1.307	1.808
Habitats Directive (H2, H5, H6)	100.041	100.041	97.097	58.487
UWWTD (U1a, U3, U5)	255.190	255.19	239.116	298.609
Water Framework Directive (WFD1, WFD2)	25.023	25.023	21.270	42.867
First Time Sewerage (A14)	17.356	17.356	0.000	0
Security and Emergency Measures (SEMD)	0.000	33	33.000	40.554
Intermittent Discharge (UIDO)	0	0	0	0.078
<b>Quality Programme – Sewerage Service</b>	<b>638.907</b>	<b>671.908</b>	<b>577.843</b>	<b>683.090</b>
Sludge AMP5 NEP	0		0	7.366

We are disappointed in the way that Ofwat has made an arbitrary reduction to cost estimates on the ground that they are streamlined costs. We have developed details costs for all our proposed solutions and this has shown that the overall programme has not shifted significantly from the Draft Business Plan. We expect Ofwat to remove these reductions for setting the Final Baseline (see B.11.3.2.2).

## B.11.16 Changes in outputs

Ofwat asked us to review outputs as well as capital expenditure in our Final Business Plan. This section summarises all outputs and compares outputs in the Draft Business Plan, the draft CIS baseline and the Final Business Plan.

Table B.11.30 – Total proposed expenditure

	Proposed Capex
DBP	£2.5bn
Draft CIS	£1.6bn
FBP	£2.1bn

Table B.11.31 – Serviceability indicators – reference levels (source: tables 15, 16, 17, 18, draft CIS)

	Serviceability indicator	Reference levels and control limits for Regulatory outputs					
			DBP	Draft CIS		FBP	
			Outputs	Outputs	Expected performance by 14/15	Outputs	Expected Performance by 14/15
Water Infra	Total bursts (nr)	Ref	2098	1,901		1908	
		High	2118	2382		1928	
		Low	2078	1419		1888	
	Interruptions >12h (nr)	Ref	140	140		343	
		High	155	297		500	
		Low	125	0		186	
	Iron mean zonal non compliance (MZC) (%)	Ref	0.2	0.2		0.2	
		High	0.3	0.4		0.4	
		Low	0.10	0.00		0.00	
	DG2 Pressure (nr)	Ref	385	385		340	
		High	390	542		510	
		Low	380	228		170	
Water Non-Infra	Water Treatment Works Coliforms (%)	Ref	0.05	0.04		0.06	
		High	0.15	0.08		0.12	
		Low	-0.05	0.00		0	
	Service Reservoir Coliforms compliance (%)	Ref	0.05	0.00		0.05	
		High	0.15	0.50		0.10	
		Low	-0.05	0.00		0	
	Turbidity (nr)	Ref	0	2		2	
		High	0	6		6	
		Low	0	0		0	
	Enforcement (incidents number)	Ref	0	0		0	
		High	0	1		1	
		Low	0	0		0	
Unplanned maintenance (nr)	Ref	13,500	12,947		12,947		
	High	14,000	14,363		14,363		
	Low	13,000	11,531		11,531		
Sewerage Infra	Sewer Collapses (nr)	Ref	164	214	164	203	203
		High	186	265		254	
		Low	142	163		152	
	Pollution incidents (nr)	Ref	110	110		125	
		High	120	145		160	

	Flooding other causes (nr)	Low	100	75		90		
		Ref	210	210		210		
		High	230	290		290		
	Flooding overloaded sewers (nr)	Low	190	130		130		
		Ref	35	24		30		
		High	40	51		57		
	Sewer Blockages (nr)	Low	30	0		3		
		Ref	7,750	11,085		11,085		
		High	7,780	12,193	7,750	12,193	11,085	
	Equipment failures (nr)	Low	7,720	9,977		9,977		
		Ref	210	241		241		
		High	230	306		306		
Sewerage Non-Infra	Sewage Treatment Works (STW) % non-compliance	Low	190	176		176		
		Ref	0.00	1.4		1.4		
		High	0.00	2.3		2.3		
	Population equivalent (PE) % non-compliance	Low	0.00	0.5		0.5		
		Ref	0.00	0.00		0.1		
		High	0.00	0.10		0.2		
	Unplanned maintenance (nr)	Low	0.00	0.00		0		
		Ref	70,000	70,000		70,000		
		High	73,000	78,412	66,000	78,412	70,000	
	Low	65,800	61,588		61,588			
	Key supporting activity – company assumptions							
	Water service	Activity during 2010-15						
					DBP		FBP	
Mains renewed (km)					350		256	
Mains relined (km)					0		0	
Mains cleaned (km)					tbc in FBP		1,359 <sup>11</sup>	
No of household meters renewed (nr)					81,000		100,000	
No of communication pipes replaced (nr)					tbc in FBP		5,115	
Sewerage service	Critical sewers renovated (km)				0		29	
	Critical sewers renewed (km)				49		29	
	Non-critical sewers renovated (km)				2		182	
	Non-critical sewers renewed (km)				9		44	

<sup>1</sup> Under Quality driver.

Table B.11.32 – Sludge treatment outputs (source: table 24, draft CIS).

Sludge treatment – 2010-15 outputs	DBP	Draft CIS	FBP
% sewage sludge disposed of unsatisfactorily	0	0	0
Additional sewage sludge from new enhancements (ttds)	0.4 <sup>[2]</sup>	0.4 <sup>[2]</sup>	13.5
Total sewage sludge disposal (ttds)	124.7	124.7	131.7
Energy generated from sewage sludge processing (GWh/year)	39.5	39.5	64.0

Table B.11.33 – Exceptional items outputs (source: table 6, draft CIS)

Description		Project reference	Activity output	Service standard output	Completion date
<b>Water Service</b>					
AMP5 12 yr Meter Replacement	CIS	BGAUK0184	81,000	-	2014-15
	FBP		100,000		2014-15
<b>Sewerage service</b>					
Progress the Incinerator Route AMP5	CIS	AGAS090243	See 3.2.3 of draft CIS		2014-15
	FBP		Planning permission and 30% construction.	Completion in AMP6.	2014-15
Brighton and Hove WTW CHP	CIS	AGAS090479	Install 2.0 MW CHP Plant	Not presented	2014-15
	FBP		Install 1.1 MW CHP Plant	Generation of 7.9 GWh/yr. £410,000/yr opex saving starting in AMP6.	2014-15
Hydro energy recovery	CIS	AGAS090480	Install hydro energy recovery at 4 sites. Combined capacity 0.67 MW	Generation of 5.83 GWh/yr	2014-15
	FBP		Install hydro energy recovery at 4 sites. Combined capacity 0.67 MW	Generation of 5.83 GWh/yr. £309,000/yr opex saving starting in AMP6	2014-15

Table B.11.34 – Water service quality enhancement outputs (source: table 7, draft CIS)

	Unit		2010-11	2011-12	2012-13	2013-14	2014-15	Total
<b>Distribution mains</b>								
Total new Mains	km	CIS	0	0	0	0	6	6
	km	FBP	0	2.5	0	0	0	2.5

<sup>2</sup> We believe this should be 2.0 ttds.

Table B.11.35 – Water service supply demand outputs (source: table 9, draft CIS)

Driver		2010-11	2011-12	2012-13	2013-14	2014-15	Total
<b>Security of supply</b>							
SoSI – dry year annual average	CIS					100	
	FBP					100	
SoSI – critical/peak conditions	CIS					100	
	FBP					100	
<b>Supply demand enhancements</b>							
Supply side management projections (MI/d)	CIS						
	FBP						
Demand side management projections (MI/d)	CIS						
	FBP						
Total (MI/d)	CIS						
	FBP						
<b>Leakage</b>							
Total Leakage (MI/d)	CIS	83	82	81	79	78	
	FBP	81	80	79	77	76	
<b>Water efficiency</b>							
Base service water efficiency target (MI/d)	CIS	1.01	1.01	1.01	1.01	1.01	
	FBP	1.05	1.02	1.25	1.07	1.07	
SELWE (MI/d)	CIS	N/A	N/A	N/A	N/A	N/A	N/A
	FBP	0	0	0	0	0	
<b>New properties (000's)</b>							
Properties connected to the water main	CIS	10.01	10.72	10.72	10.72	10.72	52.89
	FBP	6.506	7.807	8.782	9.660	10.385	43.140
<b>Metering (000's)</b>							
Optional meters <sup>3</sup>	CIS	0.02	0.02	0.02	0.02	0.02	0.10
	FBP	12.582	6.098	2.230	0.937	0	21.847
Selective meters <sup>3</sup>	CIS	95.05	95.05	95.05	95.05	95.05	475.25
	FBP	73.219	128.656	113.535	138.965	81.874	536.245

Table B.11.36 – Sewerage supply demand outputs (source: table 10, draft CIS)

		2010-11	2011-12	2012-13	2013-14	2014-15	Total
<b>New properties</b>							
Properties connected to mains sewerage during 2010-15 (000s)	CIS	16.860	19.150	19.150	19.150	19.150	93.460
	FBP	11.884	13.464	15.044	16.624	18.204	75.220
Minimum flood protection design standard for sewerage system	CIS	1:30	1:30	1:30	1:30	1:30	1:30
	FBP	1:30	1:30	1:30	1:30	1:30	1:30

<sup>3</sup> Optional and selective meters were not distinguished from the universal metering programme in the DBP. We have allocated Optional and Selective meters in the FBP in accordance with guidance from the EA.

Supply demand balance – enhancements to sewerage assets							
Population equivalent treatment capacity enhancement at works with previous capacity of less than 1,500 PE (PE – 000s) <sup>4</sup>	CIS	0.033	0.025	0.060	0.000	0.411	0.529
	FBP	0.00	0.00	0.64	0.00	0.38	1.02
Population equivalent treatment capacity enhancement at works with previous capacity between 1,500 and 10,000 PE (PE – 000s) <sup>4</sup>	CIS	0.000	0.317	5.556	0.000	0.996	6.869
	FBP	0.00	0.00	5.69	0.07	5.78	11.53
Population equivalent treatment capacity enhancement at works with previous capacity of greater than 10,000 PE (PE – 000s) <sup>4</sup>	CIS	0.000	7.512	5.037	7.078	30.238	49.865
	FBP	0.00	3.76	6.42	48.46	25.38	84.02
Enhancement in sludge capacity (PE – 000s)	CIS	20.000	20.000	20.000	20.000	20.000	20.000
	FBP	0	0	0	0	250	250

Table B.11.37 – Water service enhanced service levels outputs (source: table 11, draft CIS)

		2010-11	2011-12	2012-13	2013-14	2014-15
DG2 – Number of properties at risk of receiving low pressure	CIS	385	385	385	385	385
	FBP	340	340	340	340	340
DG3 – Supply interruptions (overall performance score)	CIS	0.2	0.2	0.2	0.2	0.2
	FBP	0.3	0.3	0.3	0.3	0.3
DG6 - % billing contact dealt with within 5 days	CIS	99.5	99.5	99.5	99.5	99.5
	FBP	98.0	100	100	100	100
DG7 - % written complaints dealt with within 10 days	CIS	99.5	99.5	99.5	99.5	99.5
	FBP	99.0	100	100	100	100
DG8 - % metered customers receiving bill based on a meter reading	CIS	99.9	99.9	99.9	99.9	99.9
	FBP	99.8	99.8	99.8	99.8	99.8
DG9 Performance score calculated from:	CIS	44.7	44.7	44.7	44.7	44.7
	FBP	41.8	43.3	43.3	43.3	43.3
DG9 - % calls abandoned	CIS	4.0	4.0	4.0	4.0	4.0
	FBP	6.0	5.0	5.0	5.0	5.0
DG9 - % calls receiving the engaged tone	CIS	1.0	1.0	1.0	1.0	1.0
	FBP	1.0	1.0	1.0	1.0	1.0
DG9 – customer call handling satisfaction score	CIS	4.75	4.75	4.75	4.75	4.75
	FBP	4.75	4.75	4.75	4.75	4.75

<sup>4</sup> This does not include capacity to be provided in infrastructure schemes. Part B5 explains that we propose to provide capacity for 75,220 connections.

Table B.11.38 – Sewer flooding outputs (source: table 13, draft CIS)

	DBP	Draft CIS	FBP
Required net reduction in properties on the internal 2 in 10 and 1 in 10 risk registers.	59	56	<b>56</b>
Number of internal hydraulic capacity flooding problems to be mitigated.	540	370	<b>200</b>
Number of external hydraulic capacity problems to be mitigated	460	460	<b>100</b>
<b>Key supporting activity assumptions</b>			
Total number of internal hydraulic (2 in 10 and 1 in 10) flooding problems to be solved	164	151	<b>161<sup>[5]</sup></b>
Total number of internal hydraulic 1 in 20 flooding problems to be solved	47	34	<b>139<sup>[6]</sup></b>
Number of external only hydraulic problems to be solved	195	195	<b>103</b>
Number of external linked hydraulic problems to be solved	75	75	<b>66</b>

<sup>5</sup> Includes removal of estimated 105 additions. The final out-turn will be based on actual additions plus the net reduction of 56.

<sup>6</sup> Includes removal of estimated 115 additions. The final out-turn will be based on actual additions plus the net reduction of 24.

## **Appendix B.11.A: CIS Action Plan**

<b>Page No</b>	<b>Reference</b>	<b>Quote</b>	<b>Action Pre FBP</b>	<b>FBP (Routemap)</b>
10	2.1.1 Serviceability Table A4 and A5 Final Business Plan	<i>Key supporting activity – not regulatory outputs and you will need to review them in light of the draft baseline.</i>		Revised outputs in Table A4,A5
11	2.1.1 Serviceability Table B3.1 Final Business Plan	<i>We require you to include in your commentary the reference level and control limits for service reservoir compliance with the statutory standard.</i>		Details of the how reference levels and control limits have been determined are included in B3
11	2.1.2 Exceptional Items	<i>In all cases you need to define an appropriate output in order to protect customers.</i>	Incinerator – build more defined output for position as at Apr 2014	Details of what will be achieved by the proposed AMP 5 expenditure are included in B3.
12	2.1.2 Exceptional Items Table 6	<i>Hydro Energy Recovery – This will need to be improved for the Final Business Plan. We would like to see the expected annual generation and the associated opex savings . We would like to see the profile of opex savings through AMP5.</i>	Split in to 4 lines and assessed for CBA individually	Further details have been included in Part C8.2 including expected annual generation, opex savings and displaced carbon. Details have also been provided on a scheme by scheme basis.
13	2.2.2 Quality Enhancementy Sewerage service Table 8	<i>In your Final Business Plan we will expect you to make full use of the flexibility allowed in the EA’s guidance on profiling of the NEP to achieve a smoother and more efficient investment profile.</i>	Continued negotiations with the EA have provided major deferment in capex for Q smoothing the profile over AMP5.	Capex has been re-profiled and reflected in Aquarius.
17	2.4.2 ESL Water Service	<i>Woolmans Wood -In your Final Business Plan please set out more clearly the step change in customer contact rate for discolouration that you expect the rehabilitation to deliver each year (see section 3.4 for more details).</i>	The scheme has been reviewed phasing of changes in Customer complaints will lag behind the scheme.	Woolmans Wood has now been moved into enhanced level of service and the contact rates have been entered into the tables

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
21-22	3.1.2 Capital maintenance assessment Meter renewal	<i>Your DBP did not include sufficient information for us to make this adjustment based on your actual/projected AMP4 expenditure. .... Information on your actual and projected expenditure for meter renewal in AMP4 should be included in your Final Business Plan.</i>		Included in commentary on B5 and B3
22	3.1.2 Capital maintenance assessment	<i>In our view you have provided insufficient evidence to justify all of the expenditure set out in your plan.</i>	<ul style="list-style-type: none"> <li>• Meetings with Ofwat to understand its view in detail</li> <li>• Assessment of AMA using B&amp;V</li> <li>• Complete revision of B3 commentary</li> <li>• Revision of assessment of capital expenditure requirements</li> <li>• Revision of approach to CBA</li> </ul>	The format of B3, identifying each asset type separately, allows a clear assessment and justification of the need for the investment proposals
22	3.1.2 Capital maintenance assessment	<i>In your Final Business Plan we expect the incremental expenditure to move from stable service to the improved service level to be included in part B6 and the cost beneficial case to be made in your commentary.</i>	We have reviewed outputs and ensured that all enhancements are allocated to part B6 with the exception of restoring stable levels of service in sewerage infrastructure. This is via agreement with Mark Worsfold at Ofwat.	Updated B6 submission including Odour, Flooding and Resilience schemes supported by CBA.
23	3.1.2 Capital maintenance assessment Water Infrastructure	<i>You did not include commentary in line with the Information Requirements which means that there is insufficient evidence to convince us that you have identified the necessary scope and scale of investment to maintain stable serviceability.</i>	The structure of part B3 has been revised and updated in accordance with the revised commentary from Ofwat.	The structure within B3 follows the guidance requirements to allow assessment of current serviceability and our proposals for each asset type to either maintain or improve serviceability.
25	3.1.2 Capital maintenance	<i>You did not include commentary in line with the Information Requirements which means that there is</i>	The structure of part B3 has been revised and updated in accordance	The structure within B3 follows the guidance

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
	assessment Water Non Infrastructure	<i>insufficient evidence to convince us ..... Your commentary did not provide sufficient clarity of the differences in the available data and analysis carried out across the different asset groups.</i>	with the revised commentary from Ofwat.	requirements to allow assessment of such areas as data and analysis process.
26	3.1.2 Capital maintenance assessment Sewerage infrastructure	<i>You do not set out the case for why the future is different and generally lacks the evidence(eg where expert judgement or assumptions were used, how they were validated and how sensitivity to assumptions was tested ) that would provide confidence in the results.</i>		Greater detail is provided in B3 including an explanation of why the future is different (where we believe it to be the case). Details are also provided of the expert judgement process, the validation of judgements and full details of the sensitivity of results to the judgements made.
28	3.1.2 Capital maintenance assessment Sewerage non-infrastructure	<i>We are particularly concerned that the majority of your commentary relates to only part of the investment in the sub-service and that there is very little evidence to justify the rest of the investment. Your commentary did not provide sufficient clarity of analysis carried out and the differences across the different asset groups.</i>	We have ensured that the more of the investment required is supported by the common framework approach and the extent of the uplift has been reassessed. This is included in part B3.	Greater level of detail is provided in B3 that will allow a fuller analysis of the investment proposals
30	3.1.3.1 Approach to renewables	<i>Benefits should be set out in as clear a manner as possible. For example , additional generation capacity installed, expected electricity production and opex savings delivered ( including income from ROC's)</i>	This will be included in Part C8 and referenced in Part B3. Where Ofwat have mentioned specific points in the CBA we have repeated the text between Part C8 and Part B3.	Further information on the predicted benefits from the proposed renewable generation schemes has been provided in Part C8.2 including annual output, displaced carbon and opex savings. A breakdown of opex savings has also been provided along with a

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
				summary of the ROC benefits.
30	3.1.3.1 Approach to renewables	<i>Renewable projects require justification as cost beneficial..... Willingness to pay should not be used in conjunction with the shadow price of carbon.</i>	Shadow price of carbon has been excluded from our CBA.	All the carbon reduction projects have had CBA applied to them and all have CBR's greater than 1
31	3.1.3.2 Hydro energy recovery	<i>We suggest that your plan could be developed further. We cannot see a breakdown between the 4 sites where hydro is proposed. You have not presented the opex savings that this would bring.</i>	Breakdown of the 4 sites is included in the enhanced scheme definition form which will be provided as an annex – ahead of Final Business Plan	Further details have been included in Part C8.2 including expected annual generation, opex savings and displaced carbon. Details have also been provided on a scheme by scheme basis.
31	3.1.3.2 Hydro energy recovery	<i>You have not given any information regarding how you plan to manage any potential revenue from ROC's. We would like to see how this was included within your CBA. Additionally, no commentary is offered presenting or justifying your application of CBA..... We encourage you to improve the robustness of your case for the Final Business Plan.</i>	CBA has been applied to these schemes ahead of the final business plan submission	The hydro energy recovery proposed are associated with 'Pumped' schemes (i.e.. energy has been spent pumping the effluent to the higher level) therefore, under the current Ofgem rules for renewable obligation these schemes are not eligible for ROCs.
31	3.1.3.2 B&H WTW CHP	<i>We suggest that your plan could be developed further. Your plan lacks detail of what would be delivered in terms of opex savings to consumers. You do not tell us the generation output, its related carbon and associated opex saving. .... Additionally, no commentary is offered presenting or justifying your application of CBA. We encourage you to improve the robustness of your case for the Final Business Plan.</i>	The Brighton and Hove CHP scheme includes information on opex savings and identifies the scheme as spend to save hence no additional willingness to pay required To be included in Final Business Plan	Further information on the predicted benefits from the proposed renewable generation schemes has been provided in Part C8.2 including annual output, displaced carbon and opex savings. A breakdown of opex savings has also been provided along with a

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
				summary of the ROC benefits.
32	3.2 Quality enhancements	<i>We will require the requested additional information to be included in your Final Business Plan if we are to continue to include these schemes (listed in following paragraph).</i>	All schemes that had streamlined costs at Draft Business Plan stage have been reviewed and have had detailed bottom up costs derived. Further regular meetings held with the EA to discuss and challenge the Final NEP	All schemes that had streamlined costs at Draft Business Plan stage have been reviewed and have had detailed bottom up costs derived.
33	3.2 Quality enhancements	<i>in the case of non-statutory schemes (which) have an unfavourable cost-benefit ratio. We would require more comprehensive justification to reinstate these schemes in to the baseline.</i>	Cost benefit analysis has been further enhanced. No non statutory driver schemes included in the Final Plan has unfavourable cost benefit ratio.	Cost benefit analysis can be found in C.8.1.2 (water) and C.8.1.3 (sewerage).
33	3.2 Quality enhancements	<i>We also expect those statutory schemes that are not cost-beneficial to be subjected to further review before FBPs.</i>	Enhanced CBA has been carried out by NERA – report received 20/02/09	The Agency remains of the view that these schemes should remain in order to protect Habitats, Groundwater and Fish.
40	3.3.1 Supply/Demand balance Meter unit costs	<i>We have seen no evidence to convince us that the higher unit cost (£272 per meter ) should apply....our assessment uses the unit meter cost of £230.</i>	The implied £272 arose from taking an NPV value as capex. The actual unit rate proposed is £230.	Meter unit rate now at £209 per meter and is less than the baseline of £230
40	3.3.1 Supply/Demand balance Universal metering	<i>you have not demonstrated that it forms part of the least cost approach to balancing supply and demand ...we assumed a further 15% reduction to your costs ..because you have not demonstrated that it is best value option.</i>	NERA have been engaged to demonstrate that metering is the best value option.	EBSD modelling, as reported in B4 shows that Universal metering is part of a least cost strategy.
41	3.3.1 Supply/Demand balance Requisitions	<i>You have not explained why you expect the recovery rate to be so much lower in the future so we have assumed you will recover 66% of costs through revenue and rechargeable works.</i>	Keep historic AMP4 average recovery rate for rechargeable works.	We explain our recovery rate in section B.5.?.

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
41	3.3.2 Supply Demand Balance Sewerage service	<p><i>We recognise that you have attempted to follow UKWIR's long term least cost planning ..... but there are areas in which we think you may have departed from it:</i></p> <ul style="list-style-type: none"> <li><i>We are not sure you have taken adequate account of existing headroom in sewerage assets.</i></li> <li><i>We are not sure you have considered a range of feasible options where investment is probable.</i></li> <li><i>We are not sure you have considered social and environmental costs.</i></li> <li><i>We found that your description of approach was unclear in a number of places making it difficult to be confident about what you have done.</i></li> </ul>	<p>A complete review of the growth submission and the commentary has been undertaken. Each of these points is to be addressed in the Final Business Plan</p> <p>Two meetings held with Ofwat</p>	<p>SWS has discussed its approach in two meetings with Ofwat. B5 provides a commentary that explains in more detail the approach taken by SWS.</p>
42	3.3.2 Supply Demand Balance Sewerage service New development	<p><i>We do not think that you have provided convincing evidence that future unit costs should be greater than the unit cost per connection over the first three years of AMP4</i></p>	<p>Meetings held with Ofwat to explain why unit rates are different from historic. Supporting evidence has been prepared which shows why unit rates are higher than Ofwat's estimate.</p>	<p>SWS has discussed its approach at two meetings with Ofwat. B5.4.3.2 provides a full analysis of the forecast unit cost over the AMP4 period and evidence to support the SWS position that it is inappropriate for Ofwat to use unit costs over the first three years of AMP4 only.</p>
42	3.3.2 Supply Demand Balance Sewerage service New development	<p><i>You have adopted a 20% increase in intensity we expected you to consider whether building in this excess in designs provides best value for consumers.</i></p>	<p>Assessment of key driver for scheme shows that the 20% intensity does not drive the solution.</p>	<p>Assessment of the key driver for scheme shows that the 20% intensity does not drive the solution and no investment is proposed on the basis of climate change. SWS explains its position in B.5.4.3.9.</p>
43	3.4.1 Enhanced	<p><i>Woolmans Wood - We have challenged the expenditure</i></p>	<p>Complete scheme review carried out –</p>	<p>CBA now updated and</p>

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
	service levels – water	<i>with a reduction of 25% to account for weaknesses in your cost benefit analysis.</i>	plus Cost benefit assessment	shows that the scheme has a CBA ratio of 0.98. Therefore we believe that given the intangible benefits that it should be Cost beneficial.
43	3.4.1 Enhanced service levels – water	<p><i>Woolmans Wood - We also require further detail of the scheme and outputs. In your Final Business Plan please provide for the zone proposed</i></p> <ul style="list-style-type: none"> <li>• <i>Customer contact rate trend data</i></li> <li>• <i>Expected step change in customer contact rate following activity &amp; expected delivery date</i></li> <li>• <i>Activity proposed which will be used to monitor progress of delivery of the programme.</i></li> <li>• <i>WQ trend data.</i></li> </ul>	See point above Page 17 2.4.2 The scheme has been reviewed phasing of changes in Customer complaints will lag behind the scheme.	Details provided in B4. Data included in tables.
44	3.4.2 ESL Odour from sewage	<i>We have not included your proposal for Portswood (£4.55m ) as this investment is not cost beneficial.</i>	At Draft Business Plan we understood this scheme was cost beneficial. On further investigation we recognise it is not cost beneficial.	A review of the costs and benefits associated with the Portswood scheme has been undertaken. The review concluded that the scheme was not cost beneficial and is therefore not included in the Final Business Plan
45	3.4.3 ESL Sewer Flooding Additions	<i>Due to the size of your registers we are not convinced that there will not be any removals due to better information from your risk registers and have therefore reduced the number additions by 10% to allow for the better information removals.</i>	Challenge to Ofwat that there are two separate issues – new additions and reductions to better information.	We agree that there may be removals due to better information. We fail to see the relevance of this to the cost of removal of properties from the register.
45	3.4.3 ESL Sewer Flooding Internal known programme	<i>You should provide additional justification as to why you have included non cost beneficial proposals. This should include any dialogue with stakeholders, further customer research or reasons why the cost benefit analysis may be</i>	Complete revision of CBA undertaken – following meetings with Ofwat	Additional explanation included in C6 commentary. Appendix C.6.2 provides justification scheme by

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
		<i>underestimated.</i>		scheme.
46	3.4.3 ESL Sewer Flooding Known low risk problems	<i>we have removed schemes from your low risk programme which have very low cost benefit ratios because we do not believe your willingness to pay supports this.</i>	Complete revision of CBA undertaken – following meetings with Ofwat	Where we feel low cost benefit schemes are justified we have included in the business plan and provided additional justification in text and Appendix c.6.2.
46	3.4.3 ESL Sewer Flooding External schemes	<i>we have removed schemes from your low risk programme which have very low cost benefit ratios because we do not believe your willingness to pay supports this.</i>	Complete revision of CBA undertaken – following meetings with Ofwat	We have included some low cost benefit schemes to resolve severe external flooding where there is clear and significant support from stakeholders and customers. Additional justification is provided in Appendix C6.2.
46	3.4.3 ESL Sewer Flooding Mitigation	<i>We have not included your proposal to mitigate other causes problems because we believe these should be part of your on-going capital maintenance programme.</i>	Other causes mitigation has been identified in maintenance. Hydraulic overload remains in ESL	The majority of our flood mitigation schemes will be to mitigate the impact of flooding problems due to hydraulic overloading. The Final Business Plan includes for mitigation of 200 properties to protect from internal flooding and mitigation of 100 properties to protect from external (curtilage) flooding. Where there is a high risk of severe internal flooding due to other causes which cannot be foreseen and where priority response will not prevent this

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
				(e.g. failure of pumping stations serving large upstream population) we feel these locations are worthy of mitigation. This is likely to be a small number of properties locations as yet not fully determined. WE NEED TO ANSWER THE SPECIFIC POINT RAISED BY OFWAT
47	3.4.3 ESL Sewer Flooding Eastney scheme	<i>...your plan does not convince us that you have identified the least cost solution. From the information available we cannot see if this scheme is cost beneficial and will require you to put more information in your Final Business Plan to justify this level of expenditure.</i>	Complete review of Eastney solution and cost benefit assessment	Further justification is provided in C6 commentary and Section C8 - cost benefit. The Eastney Strategic CSO scheme is now shown to be cost beneficial.
48	3.4.4.1 Approach to resilience	<i>All resilience projects must be shown to be cost beneficial.</i>	CBA has been carried out on resilience.	No intervention expenditure is included in the Final Business Plan, as both Reporter and Ofwat offered concerns that the use of available data would not ensure optimum solutions would be delivered. £2m in the Final Business Plan to allow flood modelling and topographical surveys to be completed. When optimal solutions are established using ???. We will then put the schemes forward under change protocol.

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
48	3.4.4.2 Water service resilience	<p><i>our view is that your proposal is not sufficiently developed in its current form .... Your strategy to address your concerns is less well expressed ....</i></p> <p><i>Your have not quantified this level or presented how you have determined whether or not the consequence of flooding is significant.</i></p> <p><i>It is unclear how the current risk will change as a result of the investment.</i></p> <p><i>It is essential that you undertake and demonstrate appropriate CBA in order to show that your proposals are cost beneficial.</i></p> <p><i>Little evidence is presented to convince us that you have considered other options. This would illustrate that you have arrived at the most cost beneficial solution.</i></p> <p><i>We encourage you to improve the content and robustness of your case for the Final Business Plan</i></p>	<p>CBA has been carried out on resilience</p> <p>The number of schemes has been reduced to 1 scheme as a result of the challenge</p>	<p>No intervention expenditure is included in the Final Business Plan, as both Reporter and Ofwat offered concerns that the use of available data would not ensure optimum solutions wer proposed. £2m in the Final Business Plan to allow flood modelling and topographical surveys to be completed. Not appropriate to apply CBA to investigational scheme.</p>
49	3.4.4.3 Sewerage service resilience	<p><i>your proposal is not sufficiently developed in its current form ....your strategy to address your concerns is less well expressed.</i></p> <p><i>we believe that this could be expanded (methodology for considered risk in terms of flood risk and consequence).</i></p> <p><i>We want sight of your findings. .... It is unclear how the current risk will change as a result of the investment.</i></p> <p><i>It is essential that you undertake and demonstrate appropriate CBA in order to show that your proposals are cost beneficial.</i></p> <p><i>Little evidence is presented to convince us that you have considered other options. ....We encourage you to improve the content and robustness of your case for the Final Business Plan. In this event, we may reconsider our expenditure challenge.</i></p>	<p>CBA has been carried out on resilience.</p> <p>All schemes have been removed as a result</p>	<p>No intervention expenditure is included in the Final Business Plan, as both Reporter and Ofwat offered concerns that the use of available data would not ensure optimum solutions were proposed. £2m in the Final Business Plan to allow flood modelling and topographical surveys to be completed. Not appropriate to apply CBA to investigational scheme.</p>

Page No	Reference	Quote	Action Pre FBP	FBP (Routemap)
51	4. Next steps	<i>We expect you to respond to the draft baseline in your Final Business Plan.</i>	This will be included in Section B11	We have completed our response to the draft baseline earlier in this section in accordance with Ofwat reporting requirements.
51	4. Next steps	<i>You should also take account of your view of the CIS in your financial modelling as set out in PR09/19.</i>	This will be included in Section B11	We have completed our response to the draft baseline earlier in this section in accordance with Ofwat reporting requirements.
51	4.1 Finalising the quality programme	<i>We expect water companies and quality regulators to review those schemes which have a material cost impact and which a company's analysis has indicated are clearly not cost beneficial before submission of Final Business Plan s.</i>	This was reviewed at Stakeholder meeting on 27 Feb	The Agency remains of the view that these schemes should remain in order to protect Habitats, Groundwater and Fish.
52	4.2 Cost base	<i>We expect final cost base submissions with your Final Business Plan's. Our approach will require visits to your offices to review your approach, probably in march and April.</i>	Discussions with Kay Webb are ongoing. Ofwat have confirmed that this process will go beyond the Final Business Plan submission. Audit meeting with Jacobs held on 25 March 2009.	We have written to Ofwat to express our concerns at the pace of the investigation following draft cost base submissions.
53	4.3 Consumers' views	<i>Ofwat survey to explore consumers views on current service and on the Draft Business Plan. We expect you to consider carefully the implications of the high level results and to set out how you have taken account of this research in your Final Business Plan.</i>	Included in C1 we have assessed how similar the results of the national survey are with our own research and commented that ours is more statistically relevant.	Customers priorities are tabulated within C1 alongside the relevant areas of investment. The table demonstrates how customers priorities have influenced proposed service levels and expenditure.

