

YORKSHIRE WATER SERVICES LTD

PERIODIC REVIEW 2009

**B3- MAINTAINING SERVICE AND SERVICEABILITY TO CUSTOMERS
SECTION 4 – FURTHER TABLE AND SUPPLEMENTARY COMMENTARIES
(WATER)**

CONTENTS

1.	INTRODUCTION.....	4
2.	TABLE A2.....	4
2.1.	Section B	4
3.	TABLE A4.....	4
3.1.	Section A	4
3.2.	Section B	4
3.3.	Section C	5
3.4.	Section D	6
3.5.	Section E	6
4.	TABLE B3.1.....	7
4.1.	A1	7
4.2.	A2	7
4.3.	Section B	7
4.4.	D20	8
4.5.	D21	9
4.6.	D22/23	9
4.7.	Reference Level and Control Limits (general)	10
5.	TABLE B3.3.....	10
5.1.	Adjustments to the base year.....	10
5.1.1.	Traffic Management Act.....	10
5.1.2.	Statutory Inspections.....	12
5.1.3.	Reservoir Safety.....	12
5.1.4.	Pensions.....	14
5.1.5.	Non-domestic rating revaluation	14
5.1.6.	Energy costs.....	15
5.1.7.	Bad debts	15
5.1.8.	Additions to rebase total opex to 2008-09 expected out-turn	15

5.2.	Line 6 –	16
6.	TABLE B3.5.....	16
6.1.	Line A1 –.....	16
6.2.	Line A2 –.....	16
6.3.	Line A3.....	17
7.	TABLE B3.6.....	17
7.1.	Line A1 –.....	17
7.2.	Line A2 –.....	17
7.3.	Line A3 –.....	17
7.4.	Line A4 –.....	17
7.5.	Line A5 –.....	17
7.6.	Line A6 –.....	18
8.	APPENDIX.....	ERROR! BOOKMARK NOT DEFINED.

1. INTRODUCTION

1. The following line commentary relates to the A – Activity tables and B3 tables in relation to the Water Service

2. TABLE A2

2.1. SECTION B

2. Line 10 - The numbers in this line are associated with solutions that are forecast to complete in those years. The associated works distribution input was taken from those used in our Water Resource Allocation Plan against the total distribution input in the plan.
3. Line 11 – There is no distribution input forecast to be affected by section 19 undertakings or temporary relaxations or authorised departures in 2014/15,
4. Line 12 – This is the inverse of line 11 but expressed in Water Supply Zones.
5. Line 13 – calculated taking into account all individual water quality parameters detailed in table B3.1
6. Lines 14 and 15 – We assess our infrastructure pipeline and non infrastructure asset serviceability as stable in both 2014/15 and 2019/20

3. TABLE A4

3.1. SECTION A

7. We have included outputs on this line for schemes that are above £500,000 only. All expenditure regardless of value is included in this section as per the table guidance. We predict a reduction in capital maintenance in AMP6 as a result of a reduction in the QRA programme.

3.2. SECTION B

8. We have included outputs on this line for schemes that are above £500,000. All expenditure regardless of value is included in this section as per the table guidance. We predict a reduction in capital maintenance and enhancement in AMP6 from AMP5, as discussed in section 3. We will have undertaken the activities that mean we need an uplift in capital maintenance in AMP5, e.g. rebuild of Acomb Landing Water treatment works and addressing first time replacement issues.

3.3. SECTION C

9. We have included all activity associated with mains renewal, relining and new mains in this section.
10. We are proposing significant mains rehabilitation in capital maintenance to address structural and discolouration issues and this is discussed in detail in section 3 of the document.
11. There is no where in the table to put information about our proposed cleaning programme under capital maintenance. OFWAT directed us in query ref YKY005 to put the length in our commentary. The following table summarises all our planned distribution activity

AMP5	Service Area	Activity	Length (km)	Year 1 length (km)	Year 2 length (km)	Year 3 length (km)	Year 4 length (km)	Year 5 length (km)
DG3 Interruptions to Supply	Capital Maintenance	Length of mains to be replaced (km)	43.49	8.42	8.68	8.54	8.80	9.06
Mains Diversions	Capital Maintenance	Length of mains to be replaced (km)	50.00	13.63	9.09	9.09	9.09	9.09
Structural Base Maintenance	Capital Maintenance	Length of mains to be replaced (km)	121.05	24.16	24.16	24.13	24.04	24.55
DOMS - cleaning	Capital Maintenance	Length of mains to be cleaned (km)	220.88	48.14	47.11	44.30	31.72	49.61
DOMS - rehab	Capital Maintenance	Length of mains to be relined (km)	151.18	9.41	24.52	32.79	39.42	45.03
DOMS - renew	Capital Maintenance	Length of mains to be replaced (km)	97.21	18.54	9.76	22.46	19.19	27.27
Growth New Dev	Supply Demand	Length of new mains to be laid (km)	214.16	27.23	36.50	45.54	49.95	54.94
Sheffield Trunk Main	Capital Maintenance	Length of mains to be replaced (km)	3.00	3.00				
Sheffield Trunk Main	Capital Maintenance	Length of mains to be relined (km)	6.00	6.00				
Sheffield Trunk Main	Capital Maintenance	Length of mains to be cleaned (km)	22.00	22.00				
East Coast Pipe line	ELoS	Length of new mains to be laid (km)	22.00	22.00				
Concessionary Supplies	Quality	Length of new mains to be laid (km)	10.00	5.00				
Cryptosporidium	Quality	Length of new mains to be laid (km)	36.80	12.30		1.50	8.50	19.50
DG2	ELoS	Length of new mains to be laid (km)	0.50	0.50				
Total Lengths (km)			998.27	220.33	159.81	188.35	190.72	239.06

Length Replaced total (km)	314.75
Length Relined total (km)	157.18
Length cleaned total (km)	242.88
Length laid total (km)	283.46

Table 1: Distribution Activity

12. For info, we have classed our Cryptosporidium and Concessionary supplies as water treatment schemes in B4.1 and B4.3. In the database C5 however, they are classed as infrastructure maining out schemes and we have put the lengths associated with those solutions as part of the build up for C9 length of new mains in enhancement activity.
13. We also have some lengths associated with DG2 ELoS infrastructure solutions as detailed in C5 database. These lengths are in C9 length of new mains in enhancement activity too.

14. There is a minor discrepancy between capex and these lengths in section C of the table as the expenditure is elsewhere.
15. Line 10 – We are not proposing any substantive investment in district meters or PCV's.
16. Lines 12-15 inc - We have included outputs on this line for schemes that are above £500,000 only. All expenditure is on this section regardless of value. We predict the same level of capital maintenance in AMP5 as AMP6 for Water Pumping Stations, but a decrease in capital maintenance expenditure for Service Reservoirs. As discussed in section 3 we will have undertaken our activities that mean we need uplift in AMP5 and will revert back to AMP4 levels of expenditure to maintain serviceability going forward for the Service Reservoir group.
17. Outputs and Activities associated with Raw Water Pumping stations are in lines 12 and 13 in this table, but are included within line A1 of table B3.6 as per the guidance from Ofwat clarification DPB/068.

3.4. SECTION D

18. The activities and expenditure included within this section represents 49.25% of the Management and General (M&G) programme, the other half of which is in table A5. The outputs in lines 16 and 17 are above £500,000, for which there are none forecast for AMP5. The expenditure identified on line 18 is not limited by the prescribed substantive investment rule. For AMP6, we expect a similar level of expenditure and activity.

3.5. SECTION E

19. We have included all activities associated with our metering programme in this section. For clarity, our metering programme is summarised in the

Item	Service Area	Table reference - outputs	Table reference - capex	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	AMP5 Total
Meter replacements - Number of	Capital Maintenance	Table A4, Line E19	Table B3.6 line 2 (pt of)	9,876	6,581	8,500	50,000	50,000	50,000	50,000	50,000	250,000
Meter replacements - AMR caps number of	Capital Maintenance		Table B3.6 line 2 (pt of)	0	0	0	50,000	50,000	50,000	50,000	50,000	250,000
AMR retrofits Number of	Capital Maintenance		Table B3.6 line 2 (pt of)	0	0	0	189,000	189,000	189,000	0	0	567,000
DMO - Number of	Supply Demand	Table A4, line E20	Table B5.2 C17	25,176	38,000	38,000	43,563	41,860	39,833	38,123	36,623	200,002
DMO AMR caps- Number of	Supply Demand		Table B5.2 C17	0	0	0	43,563	41,860	39,833	38,123	36,623	200,002
New connection meters - Number of	Supply Demand	Pt of Table A4, Line E20	No Expenditure requirement	19,971	10,500	9,000	9,000	12,000	15,022	16,492	18,168	70,682
New connection meters AMR caps- Number of	Supply Demand		Table B5.2 line B7 (pt of)	0	0	0	9,000	12,000	15,022	16,492	18,168	70,682

following table;

Table 2: Metering Programme

4. TABLE B3.1

20. We note that in the ICS system, some of the numbers in this table are rounded to 1 or 2 decimal places. This means that the accuracy of the numbers are compromised; for example the 2009/10 mean zonal compliance with the PCV for lead is 99.687, yet rounded shows 100%. Similarly, the 2009/10 figure for mean zonal compliance for nitrate is 0.00351%, yet rounded is 0%.

4.1. A1

21. The reported JR08 figure is 102 properties on the register. We anticipate a further reduction in AMP4 to have 90 properties by the end of the period. This is discussed in B3 section 3.

22. For AMP5, we have included moneys to reduce and maintain the level of performance to 19 properties. Investment in the enhancement is discussed in part B6 and investment to maintain the new reference level is discussed in part B3 section 3.

4.2. A2

23. We have used a 7 year average for the DG3 index to obtain our estimation for 2009/10 and 2014//15. Our performance in the last two years has deteriorated slightly due to a number of factors discussed in B3 Section 3 and this has been taken into account in the projection. Our AMP5 expenditure is designed to maintain the DG3 service indicator. We therefore predict the same level of service at 2014/15 as 2009/10,

4.3. SECTION B

24. We have used various statistical techniques to derive our water quality key output projections taking into account of our current water quality enhancement programme and our proposed AMP5 and intended AMP6 quality enhancement programmes.

25. The predictions of future service & serviceability outputs have been derived from the latest full year performance - 2007 calendar year, and applying the improvements delivered by the Company's proposals for Quality and Base Maintenance investment:- i.e.:

- Completion of S19 mains rehabilitation programme (iron, aluminium & manganese in distribution – lines B8,9 and 11).
- The increased levels of Capital Maintenance investment on Service Reservoir maintenance (line B4) and completion of the current activity under a DWI Undertaking.
- Completing the proposed level of Distribution Operation and Maintenance Strategy (DOMS) activity (iron, aluminium & manganese in distribution – lines B8,9 and 11) to deliver a reduction in the number of complaints of discolouration.
- Approval and completion of the proposed Quality programme to maintain ex-works water quality compliance (lines B3,6,7,13).

26. The predictions for future performance assume that the above activities reduce the risk of water quality PCV being exceeded. This activity does not completely eliminate PCV exceedence. There are also historic reasons for exceedence that are unknown and thus solutions to eliminating these are unclear. In the case of (line B5 - % mean zonal non-compliance for faecal coliforms) it is not possible to develop a future scenario for improvement. We have not identified any positive samples in recent years where the cause has been identified as the quality of water delivered to the property. All the evidence points to contaminated customers taps as being the cause and thus generally beyond the influence of Yorkshire Water. Accordingly stable performance is predicted for this line.
27. The most difficult area to predict is that relating to lead compliance (line B10). The level of apparent non-compliance will increase over the period due to the change in standard (25µg/l to 10µg/l - 2013). This is discussed in detail in part B4.

4.4. D20

28. Based on the burst models developed by Tynemarch System Engineering, the foundations on which BGASP was built, the natural rate of rise in bursts is 5 per 1000km over a 5 year period. This equates to a total rise of 150 bursts (4.8 bursts / 1000km) over a 5 year period.

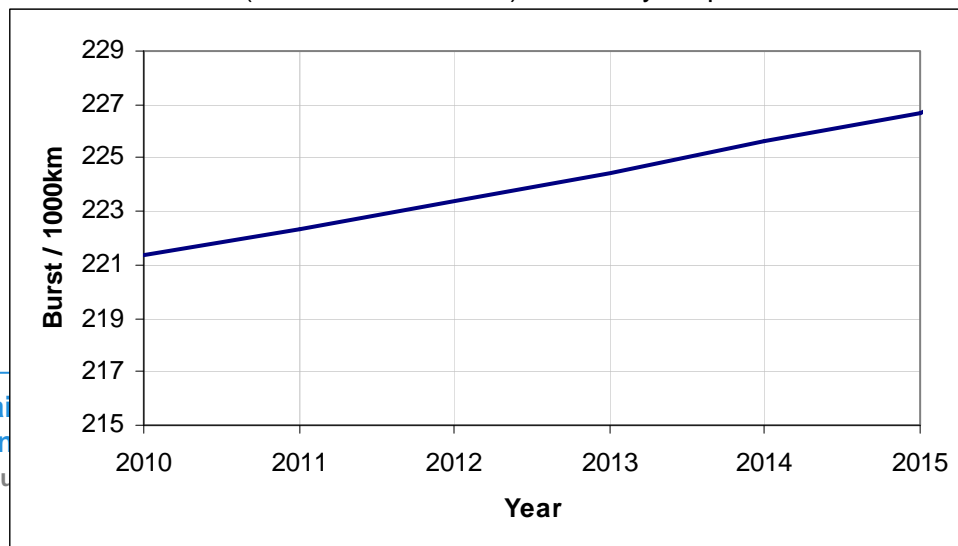


Figure 1 – The natural rate of rise in bursts, without investment

29. Figure x shows the expected natural rate of rise in bursts over the next 10 years (without investment). The current 5 year average (based on historic June Returns and the JR09 projection) is 221 per 1000km or 6807 bursts and this is the number entered for 2009/10. We have had a particularly bad year in 2008/9 and this is mainly attributable to the cold winter. The figure for 2008/9 is therefore 7718 bursts. Similar impacts have been seen with DG3 in lines A2 and D21. However, we are still confident that our AMP4 expenditure will hold the rolling average burst rate at stable and this is reflected in the 2009/10 entry.
30. For AMP5, based on the length optimised for replacement (218km through DOMS and Structural investment) it is estimated that the amount of bursts reduced within a five year period would be 133 bursts or 4.4 per 1000km. This suggests the replacement length will enable the burst rate to remain stable throughout AMP5. The additional length attributed to DG3 investment will give an additional 26 bursts or 0.9 per 1000km. This leaves a difference of 15 bursts or 0.5 bursts per 1000km between the predicted natural rate of rise and the investment. Our number for 2009/10 is therefore 221 bursts / 1000km or 6807 which is stable. Our assumptions are the same for AMP6.

4.5. D21

31. Similarly to line A2, we have taken a 7 year average of DG3 interruptions over 12 hours. As with the index, we have seen a deterioration of service in the last two years which has been taken into account in producing the average. The AMP5 expenditure is designed to stabilise this service and therefore the 2009/10 figure is the same as 2014/15.

4.6. D22/23

32. We have chosen to show this measure as a percentage. We analysed our Work Management Systems history over the past 5 years and found that 22% of our recorded maintenance was unplanned. We have projected a constant level of performance throughout AMP5 and AMP6.

4.7. REFERENCE LEVEL AND CONTROL LIMITS (GENERAL)

We have reviewed OFWAT's feedback on Control Limits and Reference Levels in the CIS Baseline document and concluded that the values given are acceptable to us in delivering the AMP5 programme. We have therefore followed OFWAT's guidance on this matter and used the numbers as set out on page 9 of the document.

5. TABLE B3.3

5.1. ADJUSTMENTS TO THE BASE YEAR

33. Line 4 – Special operating expenditure adjustments are detailed in table 1

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2010-15
Special operating adjustments for Water service									
Traffic Management Act		0.150	0.172	1.845	1.845	1.845	1.845	1.845	9.225
Statutory Inspections		0.113	0.113	0.146	0.268	0.361	0.267	0.265	1.307
Reservoir Safety Maintenance		0.000	0.000	0.670	0.670	0.670	0.670	0.670	3.350
Pensions - 50:50 service split		0.000	0.000	5.000	5.000	5.000	5.000	5.000	25.000
Rates		0.000	0.000	3.033	6.067	9.100	9.100	9.100	36.400
Additions to rebase total opex to 2008-09 expected out-turn		7.168	7.168	7.168	7.168	7.168	7.168	7.168	35.840
		7.431	7.453	17.862	21.018	24.144	24.050	24.048	111.122

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2010-15
Special operating adjustments for Sewerage service									
Traffic Management Act		0.000	0.207	0.398	0.398	0.398	0.398	0.398	1.990
Statutory Inspections		0.160	0.160	0.363	0.407	0.402	0.375	0.377	1.924
Reservoir Safety Maintenance		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pensions - 50:50 service split		0.000	0.000	5.000	5.000	5.000	5.000	5.000	25.000
Rates		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Additions to rebase total opex to 2008-09 expected out-turn		1.836	1.836	1.836	1.836	1.836	1.836	1.836	9.180
		1.996	2.203	7.597	7.641	7.636	7.609	7.611	38.094

Table 3: Special Operating Expenditure Adjustments:

5.1.1. Traffic Management Act

34. The introduction of permits and a review of the Inspections Code of Practice will result in additional fees in 2009.

35. The Yorkshire Highways Authorities Utility Committee (YHAUC) Permit Scheme working group are currently developing a common scheme for local authorities to adopt across Yorkshire. The initial indication is that it will apply to roads of a traffic sensitive nature to minimise disruption.
36. Sheffield and Leeds are the two city councils currently considering commencing a permit scheme in or before October 2009. The estimated annual fees associated with the two permit schemes are £0.45m. This is broken down as follows:
- ⦿ Permit fees £0.38m
 - ⦿ Additional administration £0.07m
37. It is assumed that all local authorities will join the scheme by 2010. The estimated annual fees will be £2.2m. This is broken down as follows:
- ⦿ Permit fees £1.8m
 - ⦿ Additional administration £0.4m
38. If the permit scheme is applied to all streets across the Yorkshire region the estimated annual fees will be £3.9m. This is broken down as follows:
- ⦿ Permit fees £3.4m
 - ⦿ Additional administration £0.5m
39. The most likely scenario is deemed to be that all local authorities will join the scheme by 2010, but that they will only apply it to roads of a traffic sensitive nature (i.e. the £2.2m option shown above). This is the scenario that has been included in the AMP5 costings.
40. In addition to the costs of the permit schemes, new National Road and Streetworks Act (NRASWA) inspection fees are being introduced from April 2009. The details of these fees are currently at draft stage, but applying the information made available within the proposals indicates that they will cost £1.1m per annum
41. Both the permit scheme costs and the inspection fees have been split according to the current ratio of work within each business unit (Water & Sewerage) as well as revenue and capital work-streams. This split is based on a detailed study of notices taken from the Yorkshire Water NRASWA noticing system ('Confirm') and has been adjusted for known changes in the work basket in PR09, specifically the downturn in Section 19 Mains Rehabilitation.

42. 72.6% of the permits and permit variations are anticipated to be revenue Opex work (59.3% Water / 13.3% Sewerage). Fees for this work have been costed according to the split between the types of notice required (Proposed Major, Major, Standard, Minor and Intermediate works) as well as the number of permit variations anticipated. On this basis £1.15m of the total £1.8m cost for permit fees is anticipated to be revenue Opex (split £0.946m Water / £0.205m Sewerage). The split of administration costs for this work based on the number of permits raised (excluding variations) is £0.247m Water / £0.047m Sewerage.
43. Inspection fees costs for revenue work have also been allocated according to the split of permits and variations served. Hence 59.3% (£0.652m) of the inspection costs are anticipated to be Water revenue Opex work with 13.3% (£0.146m) being Sewerage revenue Opex work.

5.1.2. Statutory Inspections

44. Compliance with both the Electricity at Work Regulations (EaWR) and Control of Asbestos at Work Regulations 2006 requires regular re-inspections of sites. In AMP4, this work has been predominantly capital expenditure as the sites have been inspected for the first time under the new regulations, with remedial action taken where appropriate. AMP5 will see re-inspections of sites – much of the work arising from these visits will result in capital expenditure to remedy issues arising, but a significant proportion of the expenditure will be operating costs as the visits will merely confirm that there is either no work or only minor work to undertake.
45. The figures included in the DBP for the operating costs associated with this work are based on the most up-to-date estimate of the proportion of the work that will not be capital in nature. In total, the operating expenditure for the 5 years of AMP5 is forecast to equate to £3.23m (£1.77m for EaWR inspections plus a further £1.46m for Control of Asbestos inspections).
46. The split of the costs between Water (£1.3m) and Sewerage (£1.9m) is based on the number and nature of sites to be inspected.

5.1.3. Reservoir Safety

47. Yorkshire Water (YW) owns and operates 140 reservoirs that come under the ambit of the Reservoirs Act 1975, comprising 105 impounding reservoirs and 35 non-impounding reservoirs and service reservoirs.
48. As noted in the Impounding Reservoirs project charter, moving forward into new AMP periods there is an inevitable tightening of regulations with regard to public safety and reservoir maintenance. In addition, new non-

statutory recommendations need to be considered with a risk based approach to ensure that assets are maintained to a satisfactory level. Service with regards to reservoir safety has previously been about compliance with the Reservoir Safety Act. For this periodic review it there has been serious consideration of the new guidelines (and potential future statutory requirements) around Quantitative Risk and Structural Integrity assessments.

49. Much of the expenditure relating to reservoir safety will be capital in nature, but an assessment has also been made of operating costs that will be required to address a proportion of both the statutory requirements on our asset base and the non-statutory but higher risk failure scenarios identified by the assessments.

50. A prioritised programme over the next 5 years has been adopted for reservoir safety maintenance (non statutory). This focussed on 2 areas;

- o Sites included in the 10 year inspection programme – this allows expenditure to be a targeted at a site level and delivers efficiencies through a reduction in any site establishment costs.
- o Ancillary assets connected to the operation of the reservoir to protect the company from the threat of legal compliance as a result of expert opinion from Quantitative Risk Assessments (QRA). These maintenance activities are linked to residium cleaning, sapling clearing and access road work.

51. The expenditure programme outlined above can be split into the following areas:

o Residiums and intakes	£0.750m
o Earthwork	£0.450m
o Painting	£0.325m
o Fencing	£0.615m
o Access	£0.200m
o Piping	£0.120m
o General	£0.900m
	£3.360m

52. The costs were collated by our consultants, Jacobs, who worked in conjunction with the relevant supervising engineer (SE) and inspecting engineer (IE) for each site. Expenditure has been built up on a site by site basis and spread equally over the 5 years of AMP5.

53. The new guidelines in relation to QRA require the impact of the overall risk profile of the assets to be assessed by the SE or IE. The impact of the QRA guidelines is showing a change in the risk profile that is acceptable to the SE or IE.

5.1.4. Pensions

54. Included within the base opex projections are £10m p.a. additional funding for pensions obligations. The justification and costing for this expenditure are detailed in the information return to Robert Lee (e:mail 23 March 2009). For completeness we have included this return in Appendice 1 and 2.

5.1.5. Non-domestic rating revaluation

55. Every five years the Rateable Value (RV) for the Water business assets is re-assessed by the Valuation Office. In November 2008 the Valuation Office issued their draft expectation of the RV for the period 2010-2015. This first draft contained a RV 120% larger than the current RV for the period (£109.5m). This would have a significant impact on the rates bill for YW and therefore customers' bills.

56. To address this suggested increase we have:

- ⦿ Challenged the changes in methodology since 2004;
- ⦿ Identified cost items excluded by the Valuation Office;
- ⦿ Met with the Valuation Office twice to discuss suggested amendments.

57. As a result of the work undertaken we assess the RV to be £ which would increase the rates bill by £ per annum, as set out below.

	Adopted for Revaluation £m
Income from the Water Business	
Expenditure	
Divisible balance	
Tenant's share (35% of divisible balance)	
Rateable Value (RV)	
Uniform Business Rate Multiplier expected 2010/11	
Rates bill (RV x multiplier)	
Average bill	
2009/2010 bill	

Bill increase at 2009/10 prices	
Bill increase re-priced to 2007/08	

Table 4: Re-evaluation

58. The Valuation Office has indicated that transitional relief will be applied to the increase in the rates bill. We have assumed the relief will be on a straight line basis over three years as follows:

	2010/11	2011/12	2012/13	2013/14	2014/15
Rates increase (£m)					

Table 5: Transitional Relief

5.1.6. *Energy costs*

59. The current price control period has seen a lot of volatility and increase in energy costs. At PR04 an increase in energy costs was built in to prices, however, this has turned out to have been significantly under-funded.
60. We have considered the evidence for future trends in energy and also the pros and cons of shifting risks to customers. We have concluded that the costs included in base year prices are appropriate to be used for the level of costs in the next price control period. We see little benefit in unbundling energy costs once again, and, or treating this costs with a risk sharing mechanism e.g. notified item, cap and collar, cost-pass-through. In other words our position is a 'do nothing' to the level of costs assumed in the base year.
61. Our position rests on no unbundling of costs from the 2008-09 base year. If energy costs are unbundled and adjusted in any way then we reserve the right to re-consider our approach.

5.1.7. *Bad debts*

62. We are retaining the notified item with regard to bad debts. The current economic climate is extremely volatile and unprecedented and as such the effect on customers' ability to pay bills is uncertain. We have not increased the forecast for bad debts over and above the base year as we will endeavour to keep the costs down to this level.

5.1.8. *Additions to rebase total opex to 2008-09 expected out-turn*

63. This line represents the rebasing of the opex forecasts, in total i.e. including opex effects of capex, to agree with the expected out-turn for 2008-09. The reason is that, as in previous price reviews, it is our understanding that this will be the base year for opex for the price setting period. As such this represents a more accurate view of the level of opex requirement going forward.

64. The primary reason for the increase is the higher level of electricity costs experienced in the 2008-09. This has been mitigated to an extent by on-going efficiencies. As mentioned above as the increase in electricity is included in the base opex allowance going forward we consider that no further adjustment for electricity is required.

5.2. *LINE 6 –*

65. We have included savings regarding to the following investment in this line:

- ◉ Identified Renewable Energy savings in AMP4 and AMP5 with the appropriate service split.
- ◉ AMR installation savings
- ◉ A small number of positive effects associated with additional sludge processes on water treatment works
- ◉ Positive effects of CRC adjustments

6. **TABLE B3.5**

6.1. *LINE A1 –*

66. The profiling for the capital maintenance infrastructure programme is as the output from our ELSA+ optimisation. Where possible, we have tried to create an even profile. However, our statutory duties mean that in some areas investment is un even.

67. Expenditure on this line includes all expenditure on Impounding Reservoirs and all expenditure on Aqueducts.

6.2. *LINE A2 –*

68. Expenditure on this line includes;

- ◉ Network Modelling and investigations
- ◉ Communication Pipes

- ⦿ Distribution renewal expenditure under DG3,
- ⦿ Structural and DOMS (Discolouration)
- ⦿ Leakage Find and Fix and Control
- ⦿ Mains Diversions Maintenance

6.3. *LINE A3*

69. There is no M&G expenditure classed as infrastructure

7. **TABLE B3.6**

70. The profiling for the capital maintenance non infrastructure programme is as the output from our ELSA+ optimisation. Where possible, we have tried to create an even profile. However, our statutory duties mean that in some areas investment is un even.

7.1. *LINE A1 –*

71. Expenditure on this line includes Catchwater Maintenance, Raw Water Pumping* and other resource maintenance such as River Intakes.

* As our Ofwat clarification guidance DBP/068

7.2. *LINE A2 –*

72. Expenditure on this line includes our meter replacement programme including Automated Meter Reading retrofits. There is also expenditure related to DMA meters and loggers and Street Furniture replacements.

7.3. *LINE A3 –*

73. Expenditure on this line includes our investment in Boreholes, Springs & Adits, River Intake Maintenance and Water Treatment Works Base Maintenance inc Electricity at Work Regulations.

74. Expenditure on this line contains savings we have created through our Bundling application. The mechanisms for bundling are discussed in B3 sections 2 and 6.

7.4. *LINE A4 –*

75. Expenditure on this line includes our Raw and Water Pumping Stations Maintenance and our expenditure proposed for DG2.

7.5. *LINE A5 –*

76. Expenditure on this line includes our Service Reservoir Maintenance.

7.6. LINE A6 –

77. This includes 49.25% of our Management and General programme. The other 50.75 is in table B3.7.