

UPDATE REPORT

**WCRM EFFICIENCY REVIEW  
UPDATE TO JUNE 2003 REPORT**

**Report to  
Office of the Rail Regulator**

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## UPDATE TO JUNE 2003 REPORT

### INTRODUCTION

1 During the first half of 2003, Booz Allen carried out a review of the WCRM programme for the Office of the Rail Regulator (ORR). This review involved the Strategic Rail Authority (SRA) and Network Rail participation as part of a Constructive Challenge Team (CCT) review of the Baseline 5 scope and costs.

2 In June 2003, Booz Allen presented a report to ORR outlining its view of the efficiency with which the WCRM programme was being delivered. In our view, cost savings of up to £1 billion appeared to be possible with restructuring of the scope, phasing and delivery of the project. Recognising that Network Rail and SRA were continuing to refine and develop the project, the Regulator outlined three options in his July Consultation document which he believed would help to define the most efficient delivery path for the project. These options comprised:

- Base option of Baseline 5 minus, which represented the base position at the time, including the recovery of deferred renewal in the period after 2005/6;
- Minimum initial cost option, comprising minimum necessary renewals to maintain September 2004 outputs (until such time as it could be established that significant cost savings were being achieved), in order that an understanding could be obtained of the base position on renewals before any further enhancement works; and
- Radical restructuring option, involving delivery of post 2004 outputs, based on a radical restructuring of the organization of the project, in order to assess alternative ways of planning and delivering the project, possibly over a longer timescale (i.e. to better understand the impact of schedule on costs).

3 It was also noted that these were not the only options, nor were they mutually exclusive: for example, the minimum initial cost option could lead to the restructured delivery of the remainder of the project.

4 The costs of these three options as estimated at June 2003 and presented in the Regulator's consultation document are reproduced in Table 1 below.

**Table 1: BAH assessment of WCRM expenditure by option  
 (£bn, 02/03 prices)**

Option	To date	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	Total
Base	3.04	1.53	1.44	1.28	0.88	0.98	0.53	-	-	9.67
Minimum initial cost	3.04	1.43	0.84	0.47	0.32	0.25	0.32	0.32	0.20	7.22
Radical restructuring	3.04	1.43	0.84	0.82	0.51	0.43	0.60	0.59	0.33	8.59

Source: Interim review of Track Access Charges: WCRM Consultation Document July 2003

5 As presented, it should be noted that these options were not strictly comparable: the minimal initial cost option included the costs of on-going renewals by the Network Rail Regions, which the other options excluded; further, the options led to the delivery of different outputs, as the minimum cost option delivered only September 2004 outputs whereas the other options delivered FS5.0, but over different time periods.

6 Subsequent to the June 2003 report, Network Rail and SRA have continued to refine the project and to implement the efficiency savings identified in the June report and in other areas. Network Rail has also commenced a number of additional workstreams, assisted by the Regulator's Reporters:

- an assessment of condition-driven renewals on the route (i.e. equivalent to a minimum cost strategy);

- a review of possible changes to the project delivery organization to improve its effectiveness and to reduce overall costs (for example, reviewing which activities should be delivered by the WCMU and which by the Regions); and
- an analysis to determine the extent to which costs are influenced by the project schedule.

## NETWORK RAIL'S SEPTEMBER COST SUBMISSION

7 Network Rail has issued a revised estimate of costs for the WCML in its September 2003 submission to ORR. We note that these cost revisions do not incorporate all of the results of the workstreams commissioned since June 2003 and may be subject to further revision.

8 Network Rail presents WCML expenditure in two categories: what is termed WCMU renewals and enhancements, delivered by the WCRM project organisation; and non-WCMU renewals (i.e. those delivered by the WCML Regional organisations). The non-WCMU renewals category relates mainly to pre-2005/06 renewals on the 217 miles of NMS Route 1 not considered included within the scope of the WCMU project organisation and all WCML renewals post 2005/06.

9 The September cost submission for route 1 (delivered by WCMU and WCML Regions) is presented below. For comparative purposes, we have also added our estimate of the cash flow for on-going renewals undertaken by the Regions to the Base Option as presented in Table 1 above.

**Table 2: WCML expenditure June 2003 v September 2003 submission  
 (£bn, 02/03 prices)**

Option	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	Total
June 03 WCMU	1.53	1.44	1.28	0.88	0.98	0.53	-	-	6.64
June 03 Regional renewals	0.09	0.07	0.08	0.24	0.25	0.24	0.22	0.23	1.42
<b>Total June 03</b>	<b>1.62</b>	<b>1.51</b>	<b>1.36</b>	<b>1.12</b>	<b>1.23</b>	<b>0.77</b>	<b>0.22</b>	<b>0.23</b>	<b>8.06</b>
Sept 03 WCMU	1.52	1.30	1.10	0.51	0.53	0.18	-	-	5.14
Sept 03 Regional renewals	0.09	0.11	0.13	0.24	0.23	0.24	0.25	0.29	1.58
<b>Total Sept 03</b>	<b>1.61</b>	<b>1.41</b>	<b>1.23</b>	<b>0.75</b>	<b>0.76</b>	<b>0.42</b>	<b>0.25</b>	<b>0.29</b>	<b>6.72</b>
<b>Variance</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.13</b>	<b>-0.37</b>	<b>-0.47</b>	<b>-0.35</b>	<b>0.03</b>	<b>0.06</b>	<b>-1.34</b>

Source: June 2003: BAH analysis base option; September data from Network Rail cost submission  
 Note: WCMU includes WCMU Renewals and enhancements

10 The main difference between the two estimates comprises savings of £1.2 billion in the period 2006/7 to 2008/9. Rather than an efficiency saving, this reflects a change in asset management strategy by Network Rail: in FS5.0, it was intended that the renewals programme should deliver an infrastructure at half life, with asset management procedures then maintaining the infrastructure at that level. As Baseline 5 could only programme the delivery of some 80% of the required renewals by 2005/6, given access considerations, we assumed the delivery of the deferred renewals (together with those renewals deferred by the Project Board) in the period 2006-9.

11 It is apparent that Network Rail are no longer considering a strategy to return the assets to half life, at least within the next ten years. The September 2003 submission is based on delivering condition-driven renewals. As noted above, the September 2003 WCML renewals submission is currently being validated by Network Rail in an exercise which is not yet complete.

12 The remainder of this paper assesses the extent to which the rest of our June 2003 analysis and conclusions remain valid in context of information subsequently made available to ORR.

## IMPACT OF NEW INFORMATION ON BAH JUNE 2003 REPORT FINDINGS

### Current estimates of WCML expenditure

13 Network Rail's revised estimates of expenditure, as contained in the September cost submission, are presented in Tables 3 and 4 below, by asset category.

**Table 3: WCMU project expenditure (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	Total
Track	556	353	316	26	24	4	1279
Structures	76	69	69	24	30	12	280
Signalling	446	344	290	158	189	60	1487
Electrification	178	216	206	121	78	9	808
Plant & Machinery	2	29	23	26	35	14	129
Telecoms	26	37	26	2	2	0	93
Stations	1	4	3	0	0	0	8
Total WCMU Renewals	1283	1052	933	358	359	98	4083
Enhancements	239	247	167	148	167	84	814
WCMU renewals & enhancements	1522	1299	1100	506	526	182	4897

Source: Network Rail – Interim Review: Cost Submission (September 2003)

**Table 4: WCML (Route 1) Regional expenditure (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	Total
Track	34	36	43	110	105	98	426
Structures	5	1	1	26	25	24	82
Signalling	23	41	48	64	72	96	344
Electrification	11	12	15	22	20	19	99
Plant & Machinery	2	4	3	1	1	2	13
Telecoms	4	6	10	11	2	1	34
Stations, depots, lineside buildings	16	11	8	4	4	4	47
Total WCML Regional renewals	95	110	127	237	229	243	1041
Total WCMU Renewals	1283	1052	933	358	359	98	4083
Enhancements	239	247	167	148	167	84	814
Total WCMU+Regional+Enhancm't	1617	1409	1227	743	755	425	5938

Source: Network Rail – Interim Review: Cost Submission (September 2003)

14 The quality of available information was a major issue during the period when our June Report was developed. Although it is recognised that, following the issue of Baseline 5, Network Rail has made a major effort to improve availability of information, including reconciliation of baselining and business plan information, it remains the case that lack of information has had a major impact upon our level of confidence in the current Network Rail projections.

15 In their most recent report (Report No 5), the Regulator's Reporters state that they have received scope and cost information for each of the major asset categories with this information currently under review. However, they note that comparison between current information coming out of the project and the September Business Plan numbers is difficult as the Baseline 5- numbers include 6Sigma savings and P80 risk; both of these items are excluded from the September Business Plan.

16 Network Rail states that the September expenditure projections have been revised to include the following:

- Revisions to engineering policy incorporating impact of the Network Rail/SRA/ORR Constructive Challenge Teams
- Technical de-risking of the project
- Improved asset knowledge
- Identification of route to achieve targeted efficiencies

17 We note that Network Rail's review of condition-based renewal requirements is an ongoing exercise and the cost projections may change as more information becomes available and further analysis is carried out. In particular, we note that Route Section 1 Slow line scope has not yet been confirmed by bottom-up analysis. Additionally, the Regulator's Reporters note that the projected cost of a number of contracts has recently increased with for example the plain line track alliance contract (W140) having increased by £100m over the next three years, with no explanation or clear justification provided.

18 Although Network Rail states that asset knowledge has improved, with WCML now 'exhaustively surveyed using up to date methods which have all but eliminated subjectivity and drift', we note that this information does not appear yet to have been used to prioritise the renewal work banks reflected in the current baseline. Indeed, the Regulator's Reporters advised on 15 September 2003 that 'to date we have been unable to obtain consolidated job banks for any of the assets on West Coast, prepared in accordance with the Network Rail remit'.

19 Although further information has recently been made available, it is unclear whether this information was considered within the September Business Plan submission. In addition, we note that information recently provided by Network Rail relates mainly to WCML regional renewals, with little additional quantitative information provided to support WCMU expenditure projections.

## **Volumes**

### *Track*

20 In June 2003, we concluded that track renewal volumes were not well defined, with significant uncertainty with respect to which work was required, where and to what specification. Although in excess of 70% of the remaining Baseline 5 expenditure has been classified as renewals, we noted that accelerated renewal was likely to comprise a significant component of most enhancement schemes.

21 We suggested there may be potential to reduce scope in the near term through a cost-benefit based review of the rules applied to derived work banks and that there could be considerable scope to re-phase renewals for which the principal driver was not condition.

22 We also noted that the approach adopted by Network Rail to determine work scope is not simply the implementation of an engineering rule set but is based on bottom up inspection and the application of engineering judgement, although the degree to which recent bottom up assessment of scope has been incorporated in Network Rail's cost submission is not apparent.

23 Network Rail is carrying out an exercise to identify key drivers and prioritise the WCRM track scope on the basis of delivering September 2004 outputs, although this exercise has not yet been completed. We understand, however, that Network Rail has used some of the CCT work to prioritise renewals for route sections 1,2 and 6 although the degree to which renewal have been reduced/ rephased has not been advised to us.

24 The Regulator's Reporters are currently documenting the process followed by Network Rail for deriving the bottom up track scope. We are surprised that recording such a critical process was not one of Network Rail's core activities, and further it is unclear, in the absence of a documented process, the degree to which the bottom up track scope has been challenged and subject to internal peer review. We have previously expressed our concern that the 29/01/03 Rules appeared to have

been applied to all track despite the view of the track asset head that this specification was only applicable to curved track. The Regulator's Reporters state that likely TSR impact has now been used as one of the criteria employed to prioritise prospective renewals, which we consider to be an improvement over previous track work banks where TSR likelihood was not one of the drivers assessed.

25 The Regulator's Reporters currently advise that detailed job banks are still insufficient to categorise the work scope across all WCML route sections. It remains our view that there may be significant opportunity to re-prioritise track scope in relation to appropriate standards and specific renewal driver. Indeed information recently provided for track indicates a possible 30% decrease in regional plain line renewals but a 230% increase in regional S&C renewals compared to the volumes reflected within the September Business Plan.

26 With potential S&C volume changes of this magnitude, we consider it essential that the opportunity be taken to challenge the specification delivered, including possible rationalisation of layouts to reduce number of point ends, rather than simply to proceed to renew on a like-for-like basis. Such an assessment does not yet appear to have been undertaken by Network Rail. We also note that Network Rail does not currently possess an approved S&C design specification. There would therefore appear to be cause for concern with respect to the deliverability of the revised volume of S&C renewals in the period to 2005/06.

27 Network Rail has provided little additional information to support the pre March 2006 track projections included within its September cost submission. Network Rail states that track volumes in this period are constrained by access considerations with financial constraints also expected to reduce track volumes in 2005/06 from the level assumed in Baseline 5-.

#### *Structures*

28 We concluded in June 2003 that a lack of condition data made an objective assessment of structures scope of work difficult to achieve. The Regulator's Reporters also advised us of similar issues and consequently they have not yet been able to independently assess the Network Rail processes for structures scope identification.

29 However, Network Rail has recently provided us with more information with respect to its structures projections. Expenditure projections for WCML appear to have been derived in a similar manner to that adopted for the rest of the network, using output from top down application of the Structures Annual Cost Profile decision tool, disaggregated to WCML. Network Rail states that a "Policy B" asset management strategy has been adopted for WCML, which is expected to be sufficient to avoid deterioration of outputs for 10 years. We therefore consider that WCML structures estimates are reasonably robust, which confirms the assumption we made in our June report.

#### *Signalling and telecommunications*

30 The Regulator's Reporters have received from Network Rail the 'consolidated' WCML work banks for signalling and telecommunications. However, they have expressed reservations with respect to the accuracy and completeness of this information. Attempts at reconciliation of the work banks to other Network Rail documentation, in particular the delivery schedule, suggest that confidence cannot be shown in the supplied information. An inability to easily reconcile work banks with other Network Rail documentation is an issue for all assets.

31 No information has been made available to us which would lead us to revise our conclusion that there may be significant opportunities to re-phase the signalling scope of work. This would be particularly important were signalling supply chain capability to be constrained nationally.

32 Deferral of work will also provide opportunity for the impact of signalling supply chain initiatives to be captured by the WCRM project. Network Rail states that asset condition and an 'accelerating increase in failure rates' are driving ongoing signalling renewals but provides no data to support this contention. The recent deferral of the Stockport scheme, involving life extension for ten

years, illustrates the possibilities to defer current signalling scope and should reduce expenditure in 2004/05, albeit with small consequential increases in the following two years.

### *Electrification & plant*

33 Recent E&P information provided by Network Rail relates mainly to WCML regional renewals. We acknowledge, however, that Network Rail has made significant progress in defining the overall electrification scope of work for WCML and this should be signed off shortly. It should be noted that Network Rail has expressed its concern with respect to the vulnerability of the post September 2004 timetable due to insufficient power supply capacity, although the situation will improve as additional capacity is commissioned.

### *Post project maintenance and renewal*

34 Network Rail has now issued a Maintenance Strategy for Stage 1 EPS service West Coast (dated 30 June 2003). This document addresses the maintenance strategy from September 2004 up to implementation of Stage 2 in December 2005, with subsequent documents to be issued for Stage 2 and steady state maintenance and renewal strategies.

35 At a strategic planning level, Network Rail is now using T-Spa to identify the likely levels of renewal post project. The ORR and its advisors reviewing the use of this tool have expressed concerns with respect to the appropriateness of some of the assumptions supporting the T-Spa tool, although we understand that the model inputs for WCML have been improved through the application of updated GEOGIS data and estimates of traffic (EMGTpa) based on the timetable currently specified by SRA. The model outputs have also been subject to review by Network Rail's engineers. We understand that the results of this exercise have indicated track renewal rates in the range 3.5 - 4.0% post project, not dissimilar to our analysis in June 2003.

36 It would be expected that, with an increasing proportion of WCML renewals programmed for delivery on a Regional (non WCMU) basis, that the management of WCML in terms of engineering and asset maintenance/renewal criteria would tend to migrate to appropriate network wide specifications. We note that Network Rail asset heads have recently taken a larger role in WCRM, although it is apparent that this process still has some way to go.

### **Phasing of works**

37 We expressed concern in our June 2003 report that the pursuit of schedule objectives was importing significant costs into the project. This remains our view and indeed Network Rail has accepted the proposition that the re-phasing of works could deliver significant cost efficiency.

38 Although the exercise being carried out by Network Rail and the Regulator's Reporters has yet to provide quantification of the net effect of a re-phasing strategy, Network Rail advises that a considerable proportion of future work is already contractually committed and arrangements for major works already in place for 2004/5 and, in outline, for 2005/6. These factors suggest that the volume of work which could sensibly be re-phased and made more efficient is smaller than we had initially supposed and, further, that considerable transaction costs could be incurred in exiting from current arrangements.

39 Further, the work scheduled to take place later in the programme, such as the Trent Valley four-tracking, has already been 'restructured' in terms of being better planned, scoped and with new contracting arrangements proposed.

40 Nevertheless, we consider that a selective, phased approach could deliver significant cost efficiencies in expenditure, particularly over the next 2-3 years. This could be articulated and delivered through the existing Network Rail/SRA/ORR constructive challenge process.

41 In particular, taking into account the recent substantial changes to projected plain line track volumes, we consider that a re-phasing of some renewals based on better information may be both possible and appropriate. This selective re-phasing would take into account current challenges to delivery and the cost efficiencies which could be obtained by better planning, incorporating the lessons learned from the recent blockades, carrying out more work in-house, changes in contracting

strategy (e.g. as at Ledburn) and the way in which work is specified and delivered and would thereby also reduce the level of risk carried by the programme.

42 We are not aware that Network Rail has carried out any detailed analysis to assess the performance risk to WCMU from possible re-phasing of renewals.

### **Efficiency**

43 In its September cost submission, Network Rail highlights cost savings of £1.9bn relative to its June Business Plan. However, the June Business Plan WCMU expenditure projections were indicative, having been drawn from the earlier March Business Plan. The March plan pre-dated finalisation of Baseline 5 and also the subsequent refinements to project outputs, work scope, costs and delivery arrangements led by SRA.

44 Comparison of the June Business Plan estimate and the September cost submission shows cost reductions in three areas, said by Network Rail to comprise: efficiency (£835m), reduction in scope (£454m) and deferral of work (£617m). Network Rail notes that it has identified all but £250m of the required £1.9bn reduction, with the unidentified amount allocated to these three areas in the proportion 25/25/50%.

45 Network Rail has provided information illustrating the specific items within the areas of efficiency, scope and deferral. However, our assessment of the allocation of savings between efficiency, scope and deferral differs significantly from Network Rail's assessment with the respective proportions being closer to £322m efficiencies, £606m scope and £784m for deferral. We have also reallocated Network Rail's projected savings to two additional categories classified as 'risk' and 'miscellaneous' comprising £118m and £76m respectively. If the Regulator were to impose national efficiency targets on WCMU, then these adjustments would need to be made to the 'post efficiency' expenditure.

46 However, a comparison of percentage efficiency savings for WCMU with those to be achieved on the wider network is not in itself a meaningful exercise. The WCRM programme is designed as major project, and we would expect costings to reflect productivity and efficiency improvements through time, i.e. the June cost submission already incorporates efficiencies, although these have not been quantified. Any comparison of efficiency targets should also take into account the starting position with WCMU unit rates substantially higher than those achieved elsewhere on the network due in a large part to schedule, access and layout characteristics.

47 As the proposed efficiency savings have not been disaggregated by asset within the information provided to us it has not been possible to compare unit rate reductions for WCMU with those Network Rail is targeting on the rest of the network. With the exception of track, where Network Rail states a 10% unit rate reduction is projected over two years, we have not yet seen data which would allow an understanding of unit rate reductions for other assets.

48 Whilst for a variety of reasons WCMU unit costs would be expected to be higher than elsewhere on the network, we concluded in our June 2003 report that the extent of the difference was much greater than should be expected and that significant reductions in unit costs should be achievable.

49 For plain line track, where Network Rail has attempted to quantify the difference in unit rates between WCMU and the rest of the network, it would appear that the main drivers for the rate differential relate to the level of risk carried by the WCMU programme and to the alliance contractors' carrying a level of fixed costs based upon the expectation of delivering much higher volumes – over both of which items, Network Rail can exercise control, at least over time.

50 Network Rail has not been able to provide data to demonstrate the variation of unit rate by location within the WCMU programme. It would be expected that this information would be available to support any analysis of structural reasons for WCMU rates being inherently higher than those for the wider network and we conclude therefore that Network Rail may not fully understand the reasons for the high WCMU unit rates.

51 In its September Business Plan, Network Rail has used network wide unit rates for post March 2006 activity. It is not clear why such an approach has been adopted across the board and in particular for S&C, where, historically, WCMU rates have been substantially lower than the network average rate used by Network Rail. It would be expected that due to the significant volumes of renewal required post project, Network Rail would be able to carry forward economies of scale and other efficiency benefits where these have been achieved within the existing project structure.

52 With respect to signalling unit costs, which we considered were particularly inflated, a recent Network Rail presentation with respect to Norton Bridge resignalling has highlighted many of the issues. The Baseline 5- Norton Bridge scheme has been priced at £138m including a sunk cost of £43m. Network Rail, however, suggests a total benchmark cost for the whole scheme to be £45-50m based upon 4 SSI interlockings at £11m each. Even assuming all costs to date to be of no value, the cost to go (£97m) is twice the benchmark cost. We note that issues of 'scope churn' and a lack of standards freeze which affect past performance should not now be expected to impact future costs. Although Network Rail is making progress in addressing such issues, we remain concerned that management and cost controls are insufficient to prevent cost creep.

53 Further, we note that unit rates arising from recent blockades, although substantially lower than non-blockade rates, do not necessarily reflect the efficient delivery of work. We are advised that major work activities within the blockades have generally been carried out only during a dayshift and that blockades have been managed not as 'construction' sites but rather as a series of worksites with operational railway restrictions remaining in force for movement of plant and engineering trains. We acknowledge that Network Rail may have resource and logistics constraints which make the use of a single day shift the only realistic option and that safety regulations may preclude a 'construction' site approach. However, efficient blockade unit rates will only be available once sufficient information is available to compare between different blockades using different work methodologies.

54 The Regulator's Reporters have been provided with the detailed unit costs underlying Network Rail's current WCMU expenditure projections. Their analysis is not yet complete, although they have advised that there are "significant variations between unit rates used in Baseline 5 and those actually realized. Potential reductions may also be achieved on a number of projects where a contingency of 20% has been built into unit rates and reported below the line as risk".

55 It would be premature to revise or confirm the conclusions of our analysis that significant scope for further efficiency exists within WCMU beyond that currently targeted by Network Rail within its proposed 'Six Sigma' savings, its savings from revised organizational structure and contracting strategy and any efficiency reductions built into its unit rates through time.

56 However, we note that the efficiency savings proposed by Network Rail in the September cost submission for WCML renewals to be delivered by the regional organisations are significant and similar to those proposed by the Regulator for the rest of the network.

## SUMMARY

57 Although considerable work is underway to address the issues raised in our June 2003 report we have as yet not been provided with quantified data to suggest a change in our overall findings is warranted.

58 Significant activity is underway to confirm work scope to be delivered within the project and to link that with the renewals scope required to be delivered by the Regions, both in the period to 2006 and post project. This exercise has not yet been reflected in Network Rail's cost submission but is expected to be confirmed within the next few weeks.

59 In terms of the phasing of delivery of the project scope, we consider that a selective approach to the phasing of delivery of renewals could provide the opportunity for greater resilience in delivery of enhancement outputs and in securing cost efficiencies. We remain of the view that significant cost efficiencies can be achieved within the work scope currently scheduled for delivery within the 2004/06 period.

60 With respect to unit rate efficiencies and the potential savings from more efficient contracting, organization, process improvement and risk management, analysis is on-going to determine the extent to which WCMU project delivery can be made more efficient.

61 A number of workstreams are scheduled to report within the next few weeks on the analysis of options, organisation and unit cost efficiencies. We are monitoring the progress of the Regulator's Reporters in auditing processes and in working with Network Rail to produce more rigorous, disaggregate analysis of the WCRM programme. This work should enable a more robust view to be taken of the potential for efficiency savings in the WCMU programme, to better inform the Regulator's Final Conclusions.

## ANNEX A

### Comparison of September and June Business Plan submissions

62 As the June and September Business Plans were derived in fundamentally different ways, detailed comparison of cost movements between these submissions does not provide any particularly meaningful conclusions. The June Business Plan was essentially a top down exercise with the objective of deriving a budget within a predetermined expenditure cap. The September Business Plan projections are based upon bottom up analysis of work requirements carried out through the Baseline 5 and associated constructive challenge processes.

63 For illustrative purposes, we have presented the differences between Network Rail's June and September Business Plans in respect of WCML in the tables below.

#### *Comparison of total WCML expenditure*

**Table 5: WCML - September Business Plan expenditure (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	590	389	359	136	129	102	94	1799
Structures	81	70	70	50	55	36	23	385
Signalling	469	385	338	222	261	156	108	1939
Electrification	189	228	221	143	98	28	18	925
Plant & Machinery	4	33	26	27	36	16	1	143
Telecoms	30	43	36	13	4	1	3	130
Stations, depots, etc	17	15	11	4	4	4	4	59
<b>Total renewals</b>	<b>1378</b>	<b>1162</b>	<b>1060</b>	<b>595</b>	<b>588</b>	<b>341</b>	<b>250</b>	<b>5374</b>

Source: Network Rail – Interim Review: Cost Submission (September 2003)

Note: Includes WCMU and Regional renewals

**Table 6: WCML - June Business Plan expenditure (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	590	495	293	352	338	270	195	2533
Structures	81	71	73	56	62	42	33	418
Signalling	469	401	363	395	404	308	147	2487
Electrification	189	148	165	186	143	100	67	998
Plant & Machinery	4	2	2	1	1	1	1	12
Telecoms	30	58	48	25	18	12	7	198
Stations, depots, etc	17	11	8	44	61	42	28	211
<b>Total renewals</b>	<b>1380</b>	<b>1186</b>	<b>952</b>	<b>1059</b>	<b>1027</b>	<b>775</b>	<b>478</b>	<b>6857</b>

**Table 7: WCML - Change between June & September Business Plans (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	0	(106)	66	(216)	(209)	(168)	(101)	(734)
Structures	0	(1)	(3)	(6)	(7)	(6)	(10)	(33)
Signalling	0	(16)	(25)	(173)	(143)	(152)	(39)	(548)
Electrification	0	80	56	(43)	(45)	(72)	(49)	(73)
Plant & Machinery	0	31	24	26	35	15	0	131
Telecoms	0	(15)	(12)	(12)	(14)	(11)	(4)	(68)
Stations, depots, etc	0	4	3	(40)	(57)	(38)	(24)	(152)
<b>Total renewals</b>	<b>(2)</b>	<b>(24)</b>	<b>108</b>	<b>(464)</b>	<b>(439)</b>	<b>(434)</b>	<b>(228)</b>	<b>(1483)</b>

*Comparison of WCMU expenditure*

**Table 8: WCMU - September Business Plan expenditure  
 (£m, 2002/03 prices)**

	<b>03/04</b>	<b>04/05</b>	<b>05/06</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>	<b>09/10</b>	<b>Total</b>
Track	556	353	316	26	24	4	0	1279
Structures	76	69	69	24	30	12	0	280
Signalling	446	344	290	158	189	60	0	1487
Electrification	178	216	206	121	78	9	0	808
Plant & Machinery	2	29	23	26	35	14	0	129
Telecoms	26	37	26	2	2	0	0	93
Stations, depots, etc	1	4	3	0	0	0	0	8
<b>Total renewals</b>	<b>1283</b>	<b>1052</b>	<b>933</b>	<b>358</b>	<b>359</b>	<b>98</b>	<b>0</b>	<b>4083</b>

**Table 9: WCMU - June Business Plan expenditure  
 (£m, 2002/03 prices)**

	<b>03/04</b>	<b>04/05</b>	<b>05/06</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>	<b>09/10</b>	<b>Total</b>
Track	556	463	255	307	287	214	138	2220
Structures	76	64	64	48	54	34	26	366
Signalling	446	391	356	345	354	256	100	2248
Electrification	178	138	151	169	125	81	48	890
Plant & Machinery	2	0	0	0	0	0	0	2
Telecoms	26	54	46	24	17	10	5	182
Stations, depots, etc	1	0	0	0	0	0	0	1
<b>Total renewals</b>	<b>1285</b>	<b>1110</b>	<b>872</b>	<b>893</b>	<b>837</b>	<b>595</b>	<b>317</b>	<b>5909</b>

**Table 10: WCMU - Change between June & September Business Plans  
 (£m, 2002/03 prices)**

	<b>03/04</b>	<b>04/05</b>	<b>05/06</b>	<b>06/07</b>	<b>07/08</b>	<b>08/09</b>	<b>09/10</b>	<b>Total</b>
Track	0	(110)	61	(281)	(263)	(210)	(138)	(941)
Structures	0	5	5	(24)	(24)	(22)	(26)	(86)
Signalling	0	(47)	(66)	(187)	(165)	(196)	(100)	(761)
Electrification	0	78	55	(48)	(47)	(72)	(48)	(82)
Plant & Machinery	0	29	23	26	35	14	0	127
Telecoms	0	(17)	(20)	(22)	(15)	(10)	(5)	(89)
Stations, depots, etc	0	4	3	0	0	0	0	7
<b>Total renewals</b>	<b>0</b>	<b>(58)</b>	<b>61</b>	<b>(535)</b>	<b>(478)</b>	<b>(497)</b>	<b>(317)</b>	<b>(1826)</b>

*Comparison of Regional renewals expenditure*

**Table 11: Regional renewals - September Business Plan expenditure  
 (£m, 2002/03 prices)**

	03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	34	36	43	110	105	98	94	520
Structures	5	1	1	26	25	24	23	105
Signalling	23	41	48	64	72	96	108	452
Electrification	11	12	15	22	20	19	18	117
Plant & Machinery	2	4	3	1	1	2	1	14
Telecoms	4	6	10	11	2	1	3	37
Stations, depots, etc	16	11	8	4	4	4	4	51
<b>Total renewals</b>	<b>95</b>	<b>110</b>	<b>127</b>	<b>237</b>	<b>229</b>	<b>243</b>	<b>250</b>	<b>1291</b>

**Table 12: Regional renewals - June Business Plan expenditure  
 (£m, 2002/03 prices)**

	'03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	34	32	38	45	51	56	57	313
Structures	5	7	9	8	8	8	7	52
Signalling	23	10	7	50	50	52	47	239
Electrification	11	10	14	17	18	19	19	108
Plant & Machinery	2	2	2	1	1	1	1	10
Telecoms	4	4	2	1	1	2	2	16
Stations, depots, etc	16	11	8	44	61	42	28	210
<b>Total renewals</b>	<b>95</b>	<b>76</b>	<b>80</b>	<b>166</b>	<b>190</b>	<b>180</b>	<b>161</b>	<b>948</b>

**Table 13: Regional renewals - Change between June & September Business Plans  
 (£m, 2002/03 prices)**

	'03/04	04/05	05/06	06/07	07/08	08/09	09/10	Total
Track	0	4	5	65	54	42	37	207
Structures	0	(6)	(8)	18	17	16	16	53
Signalling	0	31	41	14	22	44	61	213
Electrification	0	2	1	5	2	0	(1)	9
Plant & Machinery	0	2	1	0	0	1	0	4
Telecoms	0	2	8	10	1	(1)	1	21
Stations, depots, etc	0	0	0	(40)	(57)	(38)	(24)	(159)
<b>Total renewals</b>	<b>0</b>	<b>34</b>	<b>47</b>	<b>71</b>	<b>39</b>	<b>63</b>	<b>89</b>	<b>343</b>