

**SUPPLEMENTARY EVIDENCE
FOLLOWING CROSS EXAMINATION**

PAUL WITHRINGTON

BUSINESS CASE AND STRATEGIC ISSUES

In relation to the Transport and Works Act 1992

**Transport and Works Act (Applications and objections
Procedure)**

England and Wales Rules 2006

**Chiltern Railways TWA Application 2010 to the Secretary of
State**

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SCOPE

- 1) This evidence is clarification and correction of previous evidence following cross-examination of 11th January 2011.

SUMMARY

- 2) Paragraphs 1. to 2. provide notes that relate to Appendix 1 of OBJ319/1. That appendix deals with Chiltern's Annual Accounts. The Appendix is reproduced as Appendix 1 in this note with (a) the year notation in the first columns of the tabulations amended (b) in Table 2, the column heading "Operating" changed to "Cost of Sales" (c) a correction to the figures in the last column in Table 6.
- 3) At paragraph 2. there is a table providing unit costs etc including that 4.3 people are employed by Chiltern for every vehicle that it owns.
- 4) Paragraphs 3. to 5. outline Chiltern's financial position. The company represents its Accounts on an "on going" basis, only because of financial support from a related company, DB Mobility Logistics AG. Chiltern owes that company close to £55m and has £34m of other debts. Hence how can it pretend to service the £400m that Network Rail has spent on its tracks, let alone the order scheme costs?
- 5) Paragraph 6. to 9. deal with Chiltern's claim that the £400m spent on its tracks by Network Rail is being serviced by the firm. The text refers to the Annual Accounts and demonstrates that the claim is unsustainable.
- 6) Paragraphs 10. to 23. provide a new estimate of the fleet required to serve the order scheme passengers. I conclude that 24 vehicles will be needed rather than the 10 previously estimated. That new estimate depends on the data in paragraph 4.17 of CRCL/R/OBJ319 and upon the change in the passenger flows to the South of Bicester North caused by Phase 1, shown on the flow diagram that Chiltern have appended to that rebuttal.
- 7) Paragraphs 24. to 30. provide an estimate for the cost of that 24 vehicle fleet. The upper-bound depends on the data in Chiltern's Accounts for the year 2009 to 2010. Fixed costs are stripped out and the remainder assigned to the existing fleet. That provides an annual cost per vehicle of £445,000. A lower bound, of £300,000, is obtained by reference to the leasing, maintenance and operating costs of the vehicles. Hence, the order scheme fleet costs between £7.8m to £11.6m pa or between £70.2m to £104m for the nine operational years of Table 1 in CRCL/P/1/A.

- 8) Paragraph 31. to 41. deal with Chiltern's business case. I point to the trivial profit allegedly made after 9 years and to the improbability that any company would hazard such vast sums for such a trivial return, let alone the risks, unless there was some other agenda. Mr Cross claimed in cross-examination that there were two motives, the profit stream, which I describe as laughable, and the need to secure the franchise. I point out that there is almost certainly some large freight interest driving the whole and that the inquiry may be misled.
- 9) In any event, the pretence that the scheme is self-funding is shown to be a sham. Instead the scheme may cost the taxpayer between £120m and £160m, over the 9 operational years of the business case or between £13m and £18m per year, after adding track costs, which the firm does not fully fund.
- 10) Paragraphs 42. to 52. deal with the passenger forecasts and economic assessment. I demonstrate that (contrary to Mr Eyles' assertion that the finely divided hexels lead to a robust forecasts despite all-or-nothing assignments) the coarseness of the road network means that a large number of hexels are routed through common points. Consequently small changes in assumptions would lead to large changes in forecasts.
- 11) The paragraphs also deal with the astonishing multiplier of four that has been applied to passengers' time when travelling to stations by car. Mr Eyles said that the multiplier followed from combining the nominal journey time with the delay due to congestion and with the operating cost. However, that leads to differences in generalised costs that are very much higher than arise if the elements are dealt with separately, as they should be.
- 12) Further, paragraph 49. points out that the multiplier should not apply to the 90% of car trips to a railway station that occur at off-peak times because those trips are not caught by congestion.
- 13) Paragraph 50. deals with the estimate of non-user costs made by Mr Eyles in Table 4.1 of CRL/P/5/A. Those depend on applying a pence per-km formula. Instead it is the delay at junctions that matters. Consequently the formula is likely to give answers that are remote from the truth.
- 14) Taken together these paragraphs destroy the economic case for the proposal.
- 15) Paragraphs 52. to 54. deal with the relationship between GDP and rail travel. I point out that Mr Cross made our case by saying that the absence of growth until 1995 was because the railways had been allowed to run down, and that the reasons for the subsequent growth were the improved services and road congestion. That is to say he sabotaged for me the notion that GDP is the driver of rail growth. It follows that the

growth factors used to estimate the passenger flows for this order scheme have no solid basis and are almost certainly far too high.

- 16) Paragraphs 55. to 58. deal with the presentation of death rate and emissions data by Mr Dare. I point out that such propaganda has misled the Government on a mammoth scale for over half a century. The truth is that:
 - (a) The railways kill more people per passenger-mile than does the strategic road network
 - (b) The train uses twice as much fuel per passenger mile as does an express coach containing as few as 20 people when operating on an uncongested motor road.
- 17) Paragraphs 59. to 60. deal with Mr Dare's notion that the rail network cannot be compared with the strategic road network because the networks "lie in different corridors" – an argument that seems laughable.
- 18) Paragraph 61. points out that:
 - (a) Over-arching Government policies are to:
 - (i) Make the best use of resources
 - (ii) Reduce public expenditure.
 - (b) This scheme and railway policy are not consistent with those policies.
- 19) Paragraph 62. to 63. point out that Lord Adonis effectively took the decision to proceed with this scheme 12 months ago. However, there has been a change of administration since then. Consequently this inquiry creates an opportunity for the present Secretary of State to reverse Lord Adonis' decision in the light of the evidence now available.
- 20) Paragraphs 64. to 67. show that I have experience and expertise in transport economics. **In particular** I report correspondence with the DfT that shows it is unable to defend the principles that are adopted for the analysis of proposals such as this Chiltern order scheme.
- 21) Paragraphs 68. and 69. cite the Inspector. He has pointed out that the inquiry is not a proper forum for challenging established policy going so far as to say that, even if Mr Eyles agreed that the cost benefit analysis is nonsense the fact would be unlikely to change the Secretary of State's mind.
- 22) Paragraph 70. points out that the scheme is contrary to over-arching policy and that the Secretary of State should be given the opportunity to act in accordance with the facts.
- 23) Paragraph 71. points out that even now the passenger flows are unexplained.

APPENDIX 1 of OBJ319/1, an explanation

1. Referring to Chiltern's 2009/10 Accounts:
 - (a) Table 1 data are from note 2 on Accounts page 14 except for the interest which is from the profit and loss account on page 8. The column headed "OTHER" is the sum of the items Revenue Grant, Parking and Lettings on Accounts page 14. The item labelled "more other" is the "other" in Accounts note 2.
 - (b) All the data in Table 2 is from the Profit and loss account, Accounts page 8. The column labelled "Operating" would be better labelled "Cost of Sales".
 - (c) In Table 3 the Grant is from note 2 referred to above. Track access is the sum of the access charges in Accounts, note 3. The rolling stock data is also from note 3.
 - (d) Table 4 is from the balance sheet on page 9 of the Accounts.
 - (e) Table 5 is from notes 4 and 5 on pages 15 and 16 of the Accounts.
 - (f) Table 6 is from the Office of the Rail Regulator's Year Books except for the last column which has been obtained by dividing the grant in Table 3 by the passenger-km in Table 6. However there is a systematic error in that column, namely the years used to calculate the data did not correspond. For example the 2.37 pence for the year 2008/9 was calculated by dividing the grant of £22,918,000, which is for the year ending 2007/08 by the 968m passenger-km for 2008/09. Consequently the numbers should be reworked. However, they have not been used in the main text.

Appendix 1 to this note is a corrected version of the original.

2. The data is useful in that it enables various statistics to be obtained e.g. the loss for the 15 years, if grant is excluded, amounts to £1225m minus £1039m or to £176m or to £12.4m per year and such as follows, where the data is for the year 2009/10.

	Per journey	Per 100 Pass-km	Per Train-km	Per Vehicle
Fares Income £	5.90	11.12	10.95	611,058
Grant £	0.26	0.49	0.49	27,105
Cost of sales £	6.49	12.22	12.04	671,802
Sales plus admin £	7.23	13.61	13.40	741,651
Wages inc directors £	1.90	3.58	3.52	196,692
Employees	Not appropriate			4.30

CHILTERN'S FINACIAL STATE

3. On page 4 of Chiltern's Accounts for the year ending 9th January 2010 we read, under the heading "Going Concern", the following text:

“The directors believe that preparing the Accounts on an on-going concern basis is appropriate due to the continued financial support of DB Mobility Logistics AG (an intermediate parent company which is a wholly owned subsidiary of Deutsche Bahn AG). The directors have received confirmation that DB Mobility Logistics AG intend to support the company for at least one year after these financial statements are signed”.

The implication is that, without DB support, Chiltern would cease trading.

4. Furthermore the balance sheet shows that Chiltern must pay creditors £29.2m within one year and a further £59.8m in subsequent years. Hence the current debt is £89m. To offset that, Chiltern is owed £22.9m. Hence the net debt is £66m. Page 20 of the Accounts tell us that the debt to “Group undertakings” amounts to £54.9m. Hence, the balance from £89m, namely £34m, is owed elsewhere.
5. It is astonishing that a firm in such a position can claim to be servicing £400m, the amount spent by Network Rail on its tracks, along with £185m for this order scheme and the £30 million Fixed Sum Payment, whatever it relates to.

THE £400m

6. Under cross examination Mr Cross pointed out that the interest charges of £2.9m in the Accounts were not related to the servicing of the £400m spent on Chiltern’s tracks. Instead Mr Cross said the servicing of that sum is within the cost of sales, listed in Table 2 of Appendix 1.
7. However, Chiltern’s latest Accounts do not show any item with a description that relates it to the £400m. It could be that the item is the access charge at note 3 on Accounts page 15. That amounts to £29.7m which is close to the annual sum required to repay £400m at 6% over 30 years.
8. If so, it appears to be a fiction that the £400m is being serviced directly. Instead it is being subsumed within the access charge, which is itself inadequate to pay for track maintenance and renewals, estimated at £42pa, see Appendix 2 of OBJ391/1.
9. ***I invite Chiltern to unpack the Accounts data so that we can see where the annual cost of the £400m has been charged.***

THE ORDER SCHEME FLEET

10. Under cross-examination Mr Cross said that (a) Chiltern would not need additional carriages to serve the order scheme passengers (b) he would not get rid of any rolling

stock if the order scheme were abandoned (c) the estimate of 10 carriages that I had made was wrong.

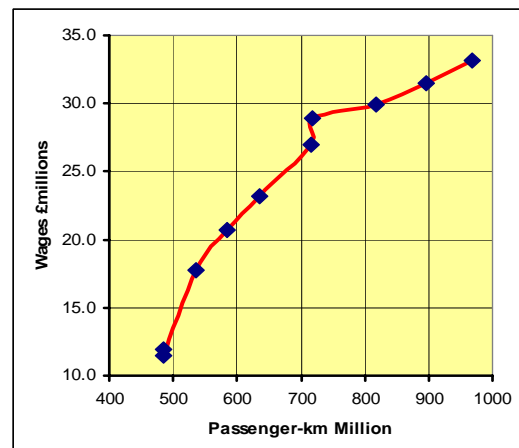
11. That estimate depended upon converting the annual passenger flows to peak and off-peak hourly flows, see paragraph 12)(a) of OBJ319/3. Because of Mr Cross' comment I have made a separate estimate which uses the data in Chiltern's rebuttal paragraph 4.17 of CRCL/R/OBJ319 and the flow diagram for Phase 1 appended to that CRCL rebuttal.
12. The flow diagram provides that Phase 1 will reduce the passengers immediately to the south of Bicester North by 194,000 pa in 2016. Almost certainly those people would, as a result of the proposal, board or alight at Bicester Town. That is to say it is those passengers that would ride on the trains to be "extended" to Oxford.
13. Dividing the 194,000 Bicester passengers by the 300 effective days in the year and by 2 and multiplying by the peak hour factor of 0.25, available figure 3.1 of CRCL/P/5/A yields 80 passengers per hour in the peak direction, or 40 per train, if, as in Table 3 of CRCL /P/2/A, there are two trains per hour.
14. Using the off-peak factor of 0.04 yields 13 passengers per hour in each direction. That is insufficient to justify even one carriage per hour, let alone two. *Consequently it is difficult to see how Chiltern can claim that it would extend two trains per hour from Bicester to Oxford. Instead, all the carriages would be for the order scheme, except at peak times.*
15. Paragraph 4.17 of CRCL/R/OBJ319 says that during the off peak the trains will have three to four cars. There are to be two trains per hour. To simplify calculations I will assume that the trains would have alternately 3 and 4 carriages providing an average of 3.5. If as much as one carriage per hour, equivalent to half a carriage per train, is allocated to Bicester then an average of three cars per train are left to serve the order scheme in the off-peak.
16. The journey plus dwell time takes more than one hour. Hence three trains in each direction will be needed to sustain a half-hourly service. Consequently the off-peak **order scheme** fleet will need 18 carriages.
17. Paragraph 4.17 also tells us that the peak hour trains will have 6 carriages each. One of those carriages would otherwise start at Bicester, leaving 5 attributable to the scheme, or ten for the hour. Of those ten, six will be available from the off peak fleet. Hence the order scheme will require 22 in-use carriages. Also required may be a two-car train set

to cover for maintenance and breakdowns. Adding that to the 22 in-service cars provides a total of 24.

18. ***Against that background I say that the estimate that I made in paragraph 12)(a) of OBJ319/3 is too low. Instead my present estimate is the more consistent with Chiltern's paragraph 4.17 and the Phase 1 flow diagram.***
19. As a check on that estimate I compare the fares taken per carriage with Chiltern's operation as a whole. The latter amounted to £105m in 2009/10, see Accounts page 14 or Table 1 of Appendix 1. There were 172 Carriages, (paragraph 4.29 of CRCL/R/OBJ319). Hence the fares taken per carriage amounted to £610,000. In comparison the order scheme is said to take £157m in fares over 9 years. Hence the fares per carriage may amount to £727,000 per year. That is reasonably close to the average of £610,000 for the existing operation, thereby generating some confidence in our estimate.
20. Additionally, the average trip length of the order scheme passengers, calculated by dividing the passenger-km (23.3m) by the passengers (429,000), available from paragraph 3.125 of CRCL/R/OBJ319, is 54km. That is remarkably close to the 53 km, obtained by dividing the 945m passenger-km by the 17.8m passengers that are reported for Chiltern's existing operation in the ORR year book.
21. Consequently it would be surprising if this order scheme fleet performed very differently, from the fleet serving Chiltern's current operation.
22. Hence, subject to both Chiltern's paragraph 4.17 of CRCL/R/OBJ319 and the flow diagrams associated with that rebuttal being correct, I have confidence in my new estimate that 24 carriages will be dedicated to this order scheme.
23. ***I invite Chiltern to provide a competing estimate complete with the underlying assumptions and arithmetic regardless of how the fleet is sourced.***

VEHICLE COSTS

24. In cross examination Mr Cross said that I was mistaken in my estimate of the annual costs of £760,000 pa per vehicle. I had derived that by dividing Chiltern's cost of sales for 2009/10 plus rolling stock costs by the 172 vehicles that Chiltern uses. Mr Cross' comment amounted to saying that



- much of the cost of sales (called "Operating" in Table 2 of Appendix 1 of OBJ319/1) should be struck out because of the fixed costs elements. Mr Cross pointed out that the leasing costs were only £100,000 per vehicle. Consequently I re-visit my estimate.
25. I first note that Chiltern's wages plus directors' salaries have increased in line with the growth in passenger-km as illustrated by Appendix E of OBJ319/3, figure reproduced here. That suggests that in recent years costs, such as administration, have increased proportionally with passenger-km.
 26. Referring to the profit and loss account in the 2009/10 Accounts, we see that the cost of sales was £115.5m and that there were administrative expenses additional to that of £12m. The total, £127.5m, includes various items in note 3 which could be stripped out, namely, the fees totalling £99,000, access charges totalling £34.1m (these charges do not represent resources. Instead they have an inverse relationship with grant, see the last paragraph in Item 8 in Appendix YY of OBJ319/1), depreciation of £5m and property leases of 11.6m, providing a total of £50.8m. Subtracting that from the £127.5 m leaves £76.7m. Dividing by the fleet of 172 vehicles provides an annual cost per vehicle of £446,000.
 27. Alternatively take Mr Cross' leasing cost of £100,000 and note that it excludes maintenance, running costs and fuel etc., see item 9 of Appendix YY of OBJ319/1. The maintenance costs alone are likely to amount to £100,000 per year (paragraph 25 of OBJ319/1). Operating costs, including fuel, stabling, cleaning, plus an allocation for station costs may add a similar amount. For example if each carriage requires the equivalent of two staff paid £25,000 per year then, together with overheads, the cost may be approaching £100,000. Hence a low estimate of the annual cost of a vehicle, including the assignment of station costs, etc., is £300,000.
 28. Applying the range £300,000 to £446,000 to the order scheme fleet of 24 vehicles yields a range £7.2m to £10.7m per year or £65m to £96m for the nine operational years of Table 1 in CRCL/P/1/A, reproduced at paragraph 31. below.
 29. Here I note that Chiltern has 4.3 employees for every vehicle that it owns, see the table in paragraph 2. above.
 30. ***I invite Chiltern to provide a competing cost complete with the source data and assumptions upon which it may depend.***

THE BUSINESS CASE

31. I reproduce below business case *Table 1 from CRCL/P/1/A*:

	Total 2010-2021 £m
Fare box income	157.3
Network Rail facility charge	- 116.5
Incremental maintenance & renewals costs	- 26.3
Incremental train operating costs	-7.6
Station operations, marketing, staffing costs	-5.5
3rd party agreements	-18.1
DfT payment for Phase 2A works	18.0
Total cash flow	1.1

32. At cross examination I pointed out that (a) the total cash flow is trivial compared to the costs and (b) the risks are huge. After all, the forecasts ignore Crossrail and the electrification of FGW. Even without those, FGW would only have to improve its services slightly to attract the passengers that Chiltern hopes to carry. Hence, why would any private company hazard its funds on such a proposal?
33. Mr Cross remained confident that this scheme was worth it to Chiltern. Firstly there was the “profit stream”, which seems laughable, and secondly, the commitment to the scheme secured the franchise for the full 20 years.
34. Under further questioning Mr Cross denied that freight interests were relevant despite the freight wagon flows exceeding the passenger carriage flow by a factor of two. (The 25 freight trains per day¹ provide circa 625 wagons compared with perhaps 16 passenger carriages per hour or 256 per day consequent upon Chiltern’s seven carriages each way in the off-peak plus one from EWR).
35. *I believe that Mr Cross’ denial is questionable and that as a consequence this inquiry may be misled.*
36. I pressed Mr Cross to say where the carriages required by the order scheme would come from. He said that increased efficiencies, arising from higher speeds and the like, would enable Chiltern to service the order scheme fleet from within the current fleet. I then pointed out that, without the order scheme, those efficiencies would enable Chiltern to reduce its fleet. Mr Cross disagreed – going on to say that the present leases did not expire until 2021.
37. *I find that response unbelievable, particularly as, based on Chiltern’s own data, I now estimate that 24 vehicles would be required. Regardless of any leases it is*

¹ Table D5.3 in CD/1/18

inconceivable that, if there were 24 vehicles spare, Chiltern would not find some way of disposing of them.

38. The cost of the 24 vehicles has the range £65m to £96m. That is far above the sum of the incremental train costs and stations, namely £13.1m, from Mr Cross' Table 1 in CRCL/P/1/A, copied at paragraph 31. above.
39. Now consider the track maintenance and renewal costs, borne largely by the taxpayer. If those costs are proportional to Network Rail's as a whole then they amount to circa £42m per year for Chiltern's operation (see Appendix 2 of OBJ319/1 where Network Rail's maintenance and renewal cost of £3.2b per year from Control period 4 is apportioned according to Chiltern's 945m passenger km and to the sum of Network Rail's 51b passenger-km plus the 20b Tonne-km, 71b –km).
40. The £42m provides £0.244m per vehicle, or £5.86m per year for the 24 vehicle order scheme carriages, equating to £52m for the 9 years in Mr Cross' table.
41. *Against that background I conclude that, far from his order scheme being self-funding, it will cost the taxpayer between £117m and £148m, over the 9 years, or between £13m and £16m per year.*

FORECASTS AND ECONOMIC ASSESSMENT

42. Under cross-examination Mr Eyles confirmed that the passenger flows depend on all-or-nothing assignments with no account taken of the onward journeys from Marylebone and Paddington. He said that, despite the fact that small changes could switch all the trips from a particular hexel from one terminal to the other, the all-or-nothing approach was robust due to the small size of the hexels.
43. I pointed out that, because the road network is relatively coarse, passengers from very large groups of hexels are routed through common points. Hence, small changes in journey time from those common points could switch large numbers of passengers between the destination stations.
44. Mr Eyles disagreed. Nevertheless it seems more than reasonable to say that at least half the passengers to Water Eaton Parkway are susceptible to an en-bloc switch. After all,
 - (a) 68% are from the Witney sector to the west of the Banbury Line, page 48 of OBJ319/1.
 - (b) Nearly all the 68% go through a common point on the A40.
 - (c) Mr Eyles' model does not take account of:
 - (i) The larger number of underground services serving Paddington.

- (ii) FGW electrification, which will shorten the journey time to Paddington.
- (iii) Crossrail, which will add greatly to Paddington’s advantages.

45. ***I also challenged Mr Eyles over the extraordinary multiplier of four that is applied to time spent in cars.*** Mr Eyles said it followed from modelling. The value captures not only the drive time but also the uncertainty due to congestion and the vehicle operating costs. However, to bundle those as one is simplistic, and likely to give the wrong answer.

46. The effect of unpacking the elements is illustrated by the following table. There the values under the heading “journey time” are as in Mr Eyles’ Table 2 of CRCL/R/OBJ319 **except that** the congestion time and operating cost proxy times have been added. I then apply a weighting of one everywhere except to the time associated with congestion delay. That is deemed to be waiting time, and hence, following DfT advice, is weighted by a factor of 2.5.

	Using WEP		Using Oxford		Note
	Journey time	Generalised Time	Journey time	Generalised Time	
Drive time	20	20	25	25	Appendix 2 shows that the generalised time cost associated with operating costs and its relationship to the other costs in this table are consistent with the WEBTAG
Congestion delay	20	50	20	50	
Operating cost proxy time	10	10	12.5	12.5	
Journey time	58	58	61	61	
Frequency	2tph	25	4tph	14	
Interchange Didcot	None	0	Some	5	
Total time	108	163	118.5	167.5	

47. In this example the effective weighting of the WEP journey time remains at four, as in Mr Eyles’ table. However the effective weighting for Oxford is less. That is because the time associated with uncertainty has been set to 20 minutes for both stations. That may be correct because (a) for both journeys, people may very well allow the same addition for uncertainty regardless of the choice of station (b) the greater part of the congestion arises at the Wovercote roundabout, which is common to the routes to both stations.

48. If these values are accepted as fair then the effect on Mr Eyles’ analysis is devastating, in that:

- (a) The differences in generalised times is reduced from 17 cost minutes to 4.5, an amount which may very well vanish at interchange at Marylebone and Paddington.
- (b) The impact on the £222.3m user benefits in Table 4.1 of CRCL/P/5/A would be overwhelming, since most of those benefits are due to generalised time savings.

49. **Worse still**, the multiplier of four, applied to the **nominal** driving time, is consistent with the WEG TAG *only if congestion doubles the uncongested journey time*. That is likely only at peak times. Moreover, the peak period for commuting to and from a

railway station is earlier than the general peak in the morning and later in the evening². Hence, only perhaps 10% of daily car trips to Oxford Station or to Water Eaton Parkway would be caught by congestion. At other times 10 minutes over and above the nominal driving time would allow sufficient for parking and walking to station platforms. In that circumstance it is plainly untenable to multiply the nominal time spent driving to railway stations by four and to carry that through to the economic analysis.

50. I then turn to the £116.3 non-user benefits. Chiltern have calculated that by “Using standard conversion factors to estimate congestion benefit of between 10 and 25p / car km”. That method is inappropriate because most congestion is at junctions, see paragraph 36)(b) of OBJ319/3.
51. *Against that background the best that can be said for Mr Eyles’ analysis is that it is so fragile as to be worthless.*

PASSENGER FORECASTS AND GDP

52. I questioned Mr Dare and Mr Cross about the relationship between GDP and rail travel. In particular I pointed out that there had been long periods in the past when GDP grew considerably but when there was no growth in rail travel. I also pointed out that most of the passenger growth since 1998 is at off peak times, and hence likely to be due to the cheap day and other offers which have become so prevalent, OBJ319/4.
53. In face of that Mr Dare made our case by saying there had been a reduction in the network prior to 1970 and that the railways had been allowed to run down and that there is now congestion encouraging rail use along with better rail services. I could not agree more. It is factors such as those that are the more likely to explain changes in rail usage. I conclude that the assumed relationship between GDP and rail travel is greatly exaggerated. The effect on Chiltern’s passenger projections is that they will be far too high, thereby exaggerating the strength of the business case and economic analysis.
54. I provide at Appendix 3 a diagram that juxtaposes rail use with GDP and which, together with the notes thereon, demonstrates the matter. In particular GDP grew by 73% between 1970 and 1995 when there was no growth in rail use, but that rail use grew by circa 70% between 1995 and 2009 over which period GDP grew by only 39%. Furthermore:
- (a) OBJ319/4 provides evidence that most of the growth has occurred at off peak times (The peak period growth for central London between 1998 and 2009 was only 10%).

² See figure 3.1 of Mr Eyles’ Proof CRCL/P/5/A

- (b) Off –peak travel will have been inflated by the plethora of offers that have arisen since privatisation

DEATH RATES AND EMISSIONS

55. Mr Dare defended his comparison of death rates on the basis that the data are from DfT and RSSB sources. I pointed out that the comparisons are misleading since:

- (a) The presentation included motorbikes (of all things) but not the mode of transport most comparable to the train, namely the express coach.
- (b) Because of the small numbers, the variability of the 10 year deaths by rail or by express coach is so great as to make comparisons pointless.
- (c) System-wide death rates, which include trespassers but not suicides, are higher by rail than on the motorway and trunk road system.

In response Mr Dare was contemptuous of trespassers. However, trespassers represent over 90% of the deaths by rail. In contrast, passengers killed in train accidents are less than 5% of those who die on the railways.

56. I also pointed out that that the express coach was missing from the comparisons of emissions. For the record I have carried out detailed calculations based on the RSSB paper T618 to do with the fuel consumptions of passenger rail. In deference to the UK vernacular I converted the electricity consumption to equivalent gallons of diesel and added the diesel burnt on passenger trains. Dividing the sum by the passenger-miles yielded 94 per gallon. That is little better than a well-tuned diesel car containing the national average of 1.6 passengers. Further, an express coach, with as few as 20 passengers aboard, would return 180 passenger miles per gallon in uncongested conditions.

57. In contrast to those detailed calculations Mr Dare's evidence talks irrelevantly of the low rolling resistance of the steel wheel on a steel rail, overlooking the proven in-service performance of the system as a whole.

58. It is because of comparisons such as Mr Dare's that Governments have come to believe rail is the better form of transport when nothing could be further from the truth. In the words of Stewart Joy, the Chief Economist to British Railways in the late 1960's in his book 'The Train that Ran Away' there were those who "were prepared, cynically, to accept the rewards of high office in the British Transport Commission and the railways in return for the unpalatable task of tricking the Government on a mammoth scale.

Those men”, Joy wrote, “were either fools or knaves”³. There were no libel actions, but Joy had been forced out – too honest to work with railway men.

COMPARABLE NETWORKS.

59. Mr Dare said that the rail network could not be compared with the motorway and trunk road system because the networks do not lie in the same corridors. I respond by pointing out that:

(a) Both networks lie in corridors of intense demand. Moreover very often the corridors are the same, e.g. the East Coast Main Line, the West Coast Main line, Chiltern’s lines (particularly the almost disused order scheme line), most of First Great Western’s lines and most of Southern Region’s etc.

(b) Rail has the advantage of serving the hearts of our towns and cities whereas the strategic road network, for the most part, peters out on the edges of urban areas.

60. Against that background Mr Dare’s comment seems laughable.

POLICY

61. Over-arching Government policy is to make best use of resources, and, particularly at present, to reduce public expenditure. However, the policies to do with railways are not consistent with that. Instead those policies are consistent only with propaganda as perpetrated by the RSSB and the railway lobby and repeated in this inquiry by Mr Dare, reference his presentation of rail safety, emissions and the relationship between GDP and rail usage.

LORD ADONIS

62. Lord Adonis took the decision to proceed with this order scheme one year ago, see Appendix 4. There we read that “Chiltern’s investment plans were praised by Transport Secretary Lord Adonis yesterday, as he announced **a seven-and-a-half year extension to the franchise, until December 31, 2021, in return for the improvements**” and that “The new link line in Bicester and the other improvements to the route will be funded by a £250m loan from Network Rail, which will be paid back over 30 years” - an aspiration that has no hope of fulfilment.

63. This inquiry provides an opportunity of appraising the present Secretary of State of the misconceptions that Lord Adonis laboured under and of the weakness of the case that Chiltern have constructed. The Secretary of State would then be able to base his

³ cited in OBJ/319/3 paragraph 42),

decision on the facts rather than upon the advice that Lord Adonis viewed with such misplaced confidence.

EXPERTISE and the UNSUSTAINABLE PROCEDURES

64. In cross-examination I was asked if I was a Transport Economist to which I answered “No”. However, transport economics formed part of my MSc course and, throughout my career, I have been concerned with evaluating road schemes and the fundamental theory and the workings of the programs.
65. Over the past decade I have taken a close interest in the DfT’s New Approach to Transport Appraisal, and the willingness to pay theory. In that context I have corresponded with the author Professor Sugden, of the University of East Anglia, and with others such as Professor Booth of the IEA and recently with Tom Worsley, Head of Rail Network Analysis and Modelling Division at the DfT.
66. In particular I put it to Mr Worsley as follows where the context is that incremental fares are the full fares minus the income lost by other services, as with this order scheme.

“... let us call those services whose loss of revenue was included the “liquorice all-sort industry”. Why should we exclude that industry’s loss from the analysis upon finding that the services are “liquorice” whilst including the loss if we find that the “all-sorts” are buses and trains? There is, of course, no rational answer, and the theory collapses”.

In response Mr Worsley wrote:

“Your letter of 08 June suggested that rail services were in principle no different from any other goods and services. If this were the case, we would leave the provision of such services and the networks on which they operated entirely to the private sector.

There are, however, a number of reasons why parts of the transport sector differ enough from an efficiently operating part of the economy as to merit government intervention in certain decisions, for example those concerning investment in major projects such as Crossrail or HS2. These schemes are part of a network owned by a monopoly supplier ...” .and so on endlessly.

I comment that that reply effectively concedes my point in that it is no reply at all.

67. So, am I a transport economist or not or is it those who have put in place this untenably willingness to pay theory who lack expertise? If Professor Sugden were here I would put the same point to him, going on to point out that his theory produces the absurdities

that I have demonstrated in other evidence. He would of course have difficulty in defending himself, since the theory does indeed lead to absurdities.

INSPECTOR'S COMMENT

68. The Inspector has pointed out that (a) he is constrained to report only whether or not this order scheme is consistent with Government policy (b) the inquiry is not a proper forum for challenging Government policy or for canvassing other options.
69. The Inspector also said that even if Mr Eyles agreed that the economic analysis is nonsense, the fact may be ignored by the Secretary of State.
70. I respond by saying that:
 - (a) As above, the proposal is not consistent with the over-arching policies of making the best use of resources and reducing Government expenditure.
 - (b) The Secretary of State should be given the opportunity to act in accordance with the facts, even if those facts turn out to be contrary to the story believed by his predecessor, Lord Adonis.
71. The Inspector questioned Mr Eyles about the passenger flows which, at this very late stage in the inquiry, remain unexplained.

Appendix 1: Annual Accounts data: All values are in (000)s except where stated

TABLE 1 INCOME

YEAR	FARES	GRANT	OTHER	More other	Interest	TOTAL	Total less grant
1995/96	23,232	17,940	3,430	0	296	44,898	26,958
1996/97	28,939	16,506	1,928	0	334	47,707	31,201
1997/98	33,435	14,482	2,563	0	534	51,014	36,532
1998/99	38,829	13,081	4,087	0	467	56,464	43,383
1999/00	44,510	10,627	4,497	0	461	60,095	49,468
2000/01	38,307	7,045	3,312	0	118	48,782	41,737
2001/02	53,107	9,912	7,178	0	335	70,532	60,620
2002/03	55,055	17,512	6,558	0	278	79,403	61,891
2003/04	60,242	22,912	7,353	0	319	90,826	67,914
2004/05	68,994	17,903	10,912	0	293	98,102	80,199
2005/06	68,745	13,923	10,563	4,014	0	97,245	83,322
2006/07	80,130	9,823	20,056	0	0	110,009	100,186
2007/08	90,893	22,918	9,567	18,129	0	141,507	118,589
2008/09	102,183	17,575	8,000	3,338	2,375	133,471	115,896
2009/10	105,102	4,662	8,967	4,516	2,293	125,540	120,878
Totals	891,703	216,821	108,971	29,997	8,103	1,255,595	1,038,774

TABLE 2 COSTS/OUTGOINGS

YEAR	Cost of Sales	Admin	Interest	Tax	Total	Dividend	Retained	Recognised gains/loss
1995/96	41,252		0	0	41,252	0	3,646	
1996/97	46,416		217	410	47,043	4,000	-3,336	
1997/98	48,467		293	715	49,475	1,730	-191	
1998/99	54,584		281	550	55,415	1,049	0	
1999/00	58,082		0	621	58,703	1,392	0	
2000/01	49,218		0	-99	49,119	0	-337	
2001/02	66,235		0	674	66,909	3,286	337	
2002/03	72,853		0	852	73,705	5,698	0	
2003/04	83,161		0	1,465	84,626	6,200	0	
2004/05	75,403	13,770	0	1,655	90,828	6,200	1,074	6,314
2005/06	76,204	13,800	1,060	971	92,035	7,574	-2,364	-4,070
2006/07	100,654	13,595	1,446	-1,333	114,362	0	-4,353	-5,353
2007/08	115,726	15,343	287	2,043	133,399	0	8,108	2,908
2008/09	121,958	13,523	3,907	-1,240	138,148	0	-4,677	-12,877
2009/10	115,550	12,014	2,905	-548	129,921	0	-4,381	10,319
Totals	1,125,763	82,045	10,396	6,736	1,224,940	37,129	-6,474	-2,759

TABLE 3

YEAR	GRANT	Track Access	Differ ences	Rolling stock
1995/96	17,940	14,041	-3,899	7,655
1996/97	16,506	16,073	-433	9,187
1997/98	14,482	16,196	1,714	8,833
1998/99	13,081	16,791	3,710	10,061
1999/00	10,627	17,011	6,384	10,985
2000/01	7,045	13,277	6,232	9,001
2001/02	9,912	14,621	4,709	12,501
2002/03	17,512	15,031	-2,481	12,545
2003/04	22,912	20,899	-2,013	12,793
2004/05	17,903	19,743	1,840	13,476
2005/06	13,923	17,176	3,253	12,722
2006/07	9,823	30,250	20,427	14,210
2007/08	22,918	38,900	15,982	14,865
2008/09	17,575	39,853	22,278	15,053
2009/10	4,662	33,092	28,430	15,429
Totals	216,821	322,954	106,133	179,316

Note: Except for the rolling stock, which is the leasing charge, we distrust the data in that the Grant and Track access represent cash flows rather than resource costs. Instead we seek the expenditures by year under the headings Track maintenance, renewals and enhancements. Also, we require the rolling stock maintenance, fuel and other operating cost insofar as not covered by the leasing charge..

TABLE 4

YEAR	Debtors	Creditors 1 yr	Creditors 5yr	Creditors total	Owed
1995/96	3,273	7,256	0	7,256	3,983
1996/97	3,894	10,149	0	10,149	6,255
1997/98	7,062	12,945	0	12,945	5,883
1998/99	7,614	13,075	0	13,075	5,461
1999/00	11,061	15,108	0	15,108	4,047
2000/01	7,538	15,902	0	15,902	8,364
2001/02	8,714	15,160	2,150	17,310	8,596
2002/03	8,087	24,722	1,839	26,561	18,474
2003/04	8,302	32,035	4,631	36,666	28,364
2004/05	10,782	34,821	9,923	44,744	33,962
2005/06	15,678	38,831	10,283	49,114	33,436
2006/07	26,612	53,162	10,396	63,558	36,946
2007/08	20,494	58,872	1,067	59,939	39,445
2008/09	11,636	23,125	47,070	70,195	58,559
2009/10	22,929	29,241	59,777	89,018	66,089

TABLE 5

YEAR	Number of Employees	Wages	Directors	Total pay
1995/96	362	7,630	134	7,764
1996/97	331	7,620	292	7,912
1997/98	318	8,032	375	8,407
1998/99	382	10,904	379	11,283
1999/00	437	11,644	272	11,916
2000/01	437	11,192	283	11,475
2001/02	604	17,203	584	17,787
2002/03	644	20,332	373	20,705
2003/04	680	22,628	574	23,202
2004/05	698	26,595	335	26,930
2005/06	751	28,720	156	28,876
2006/07	712	29,740	217	29,957
2007/08	725	31,271	274	31,545
2008/09	732	32,415	701	33,116
2009/10	740	33,011	820	33,831
Totals	8,553	298,937	5,769	304,706

TABLE 6

YEAR	NATIONAL RAIL TRENDS YEAR BOOK DATA						Grant/per pass-km,
	Subsidy Millions	Journeys Millions	Pass-km Millions	Train-km Millions	Route- km	Sub per pass-km	
1997/08							PENCE
1998/99						3.19	
1999/00	10.5		484			2.17	
2000/01	10.5		484			2.17	1.46
2001/02	14.1		536			2.63	1.85
2002/03	18.9		585			3.23	2.99
2003/04	24.4		636			3.84	3.60
2004/05	14.0		715			1.96	2.20
2005/06	12.1	14.1	718	9.1	336	1.69	1.94
2006/07	32.0	16.1	817	9.1	336	3.92	1.20
2007/08	12.4	16.8	897	9.3	336	1.38	2.55
2008/09	11.1	17.3	968	9.4	341	1.15	1.82
Total/av	160.0		6,839			2.34	2.20
2009/10	NA	17.8	945	9.6	341	NA	0.49

APPENDIX 2. Check to vehicle operating costs as a proportion of the generalised cost.

The working spread sheet below calculates the generalised cost of a 13.8 mile journey, such as from Witney to Oxford Station, using the parameters in the WEB TAG with speed set to (a) 48 kph, or 30 mph, and (b) half that speed, **except that** the additional passenger time due to the lower speed has been weighted by a factor of 2.5, which is itself consistent with the weighting assigned to waiting time by the WEB TAG.

It can be seen that the uncongested, or 30mph passenger time cost, is £3.25 but that when operating costs for the lower speed is added, along with the additional passenger time as weighted, the cost rises to £12.6, nearly four times the base value. We also see that the generalised cost associated with vehicle costs is small.

That is to say the calculation provides data that supports the text table's division of time between delay and operating cost.

Coefficient	Parameters Pence per km				
	a	b	c	d	
Average Car Fuel	3.037119	-0.0692	0.000785	-3E-06	
Av. car non-fuel	3.308	19.048			
Speed kph	24	32	48	64	80
Fuel cost, p per km	1.79	1.54	1.25	1.16	1.23
Non-fuel, p per km	4.10	3.90	3.70	3.61	3.55
Total p per km	5.90	5.45	4.95	4.77	4.78
£ per hour	1.41	1.74	2.38	3.05	3.82

$$L = a + b.v + c.v^2 + d.v^3$$

$$C = a1 + b1/V,$$

Hence on a 13 mile, 20,8km journey if the free speed is 48 kph but uncertainty and congestion lead to 24 kph:

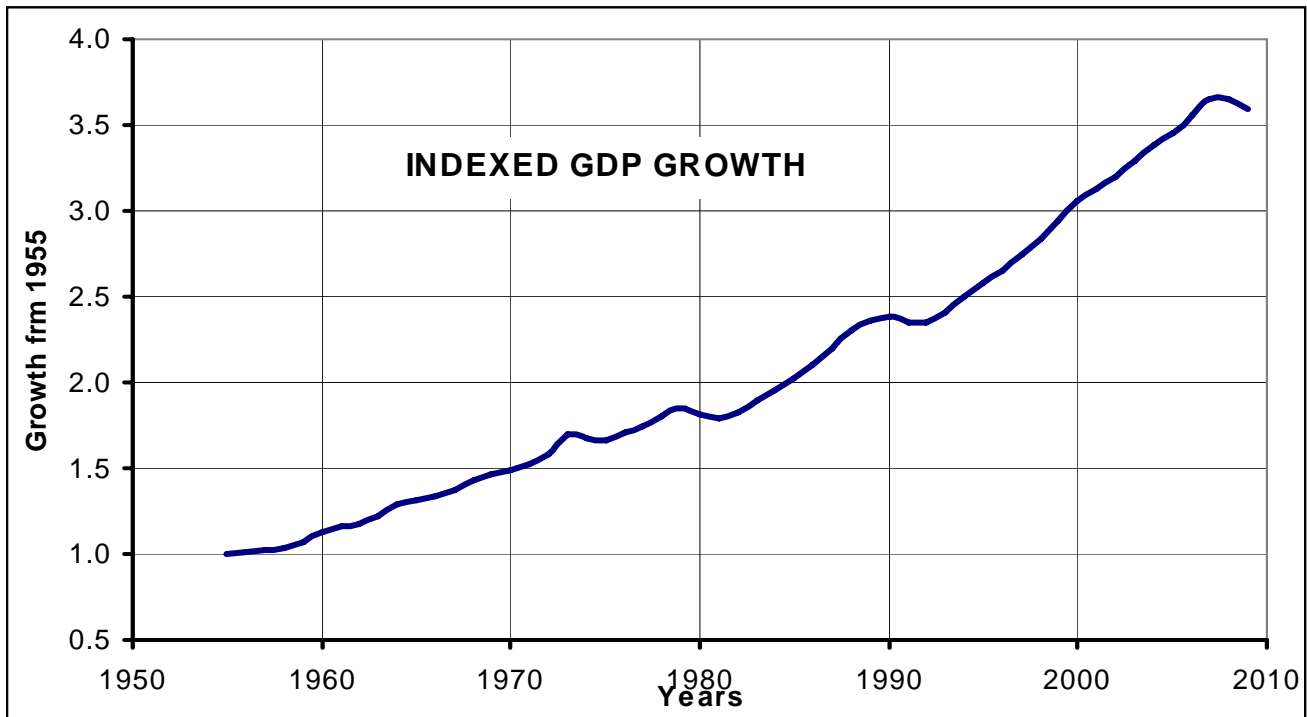
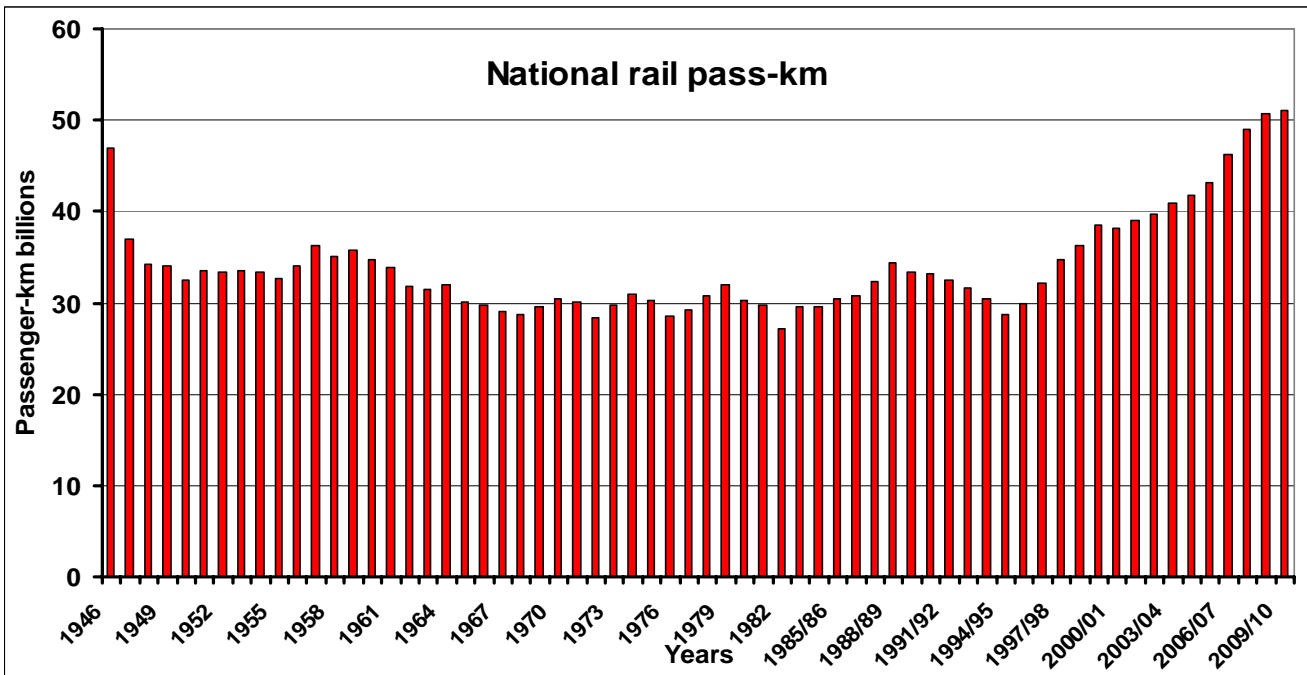
	Time hrs	Opp cost £	Pass time cost £ (a)	Total cost
At 48 kph	0.43	1.03	3.25	4.28
at 24 kph	0.87	1.23	11.38	12.60

Passenger time value £ per hour	5
Pass/vehicle	1.5

(a) After multiplying the extra time for 24kph by 2.5

Note, We see that the passenger time cost at 48 kph is 3.25, which is approximately one quarter of the total cost at 24 kph

APPENDIX 3. PASSENGER-KM AND GDP GROW



Notes:

- The post war and Beeching cuts ended in 1970.
- GDP grew by 73% between 1970 and 1995 but there was no growth in passenger-km.
- GDP grew by 39% between 1995 and 2009.
- Chiltern points out that the railway had been allowed to run down until 1995. The implication is that it is not GDP that drives growth but investment in the railways, which has been massive since that year. It is that, plus the plethora of cheap offers that is likely to account for much of the 70% growth that has arisen since 1995. After all, most of that rail growth is in the off peak period, see OBJ319/4.

APPENDIX 4. The Oxford Times report of Lord Adonis approval

Chiltern Trains' Oxford link seals
franchise extension

12:00am Friday 15th January 2010

By Sam McGregor

CHILTERN Railways has secured the right to run trains between Oxfordshire and London until 2021 after the Government yesterday backed the firm's plans to create a second route from Oxford to London.

As previously reported in the Oxford Mail, the firm plans to spend £250m on creating the new route from Oxford to London Marylebone, via Bicester, along with track improvements to speed up its services between London, Banbury and Birmingham.

The Oxford service is due to start running in 2013.

Improvements to the Oxford-Bicester line will cut Rail journey times from 25 minutes now to just 14 minutes from 2013.

Oxford-London Marylebone journey times should be 66 minutes once the new line is open, compared with about 55 minutes on First Great Western's express services to London Paddington.

A new parkway station will also be built at Water Eaton park-and-ride, near Kidlington, while Bicester Town station is set to be closed for up to seven months to be rebuilt.

Chiltern's investment plans were praised by Transport Secretary Lord Adonis yesterday, as he announced a seven-and-a-half year extension to the franchise, until December 31, 2021, in return for the improvements.

The decision means the Chiltern franchise will run the full 20 years projected when it began in 2002. The firm has to meet a series of investment targets in order to secure the full franchise term.

Lord Adonis said: "Today we gave the go-ahead to Chiltern Railways to take forward plans for a completely new service from Oxford to Marylebone, including a new parkway station.

"These will be huge improvements in the transport infrastructure for Oxford, not only providing alternative routes from Oxford to London, but providing a station serving north Oxford and the area around Oxford, by providing regular fast trains to London.

"It will particularly benefit residents of North Oxford and areas of Oxford who have not had good rail connections in the past. It will also help to get cars off the road and people on to trains."

The new link line in Bicester and the other improvements to the route will be funded by a £250m loan from Network Rail, which will be paid back over 30 years.

Chiltern's chairman Adrian Shooter, who led the firm into the private sector in 1996 when British Rail was broken up, pledged there would be no fare increases to pay for the scheme.

Chiltern Trains' Oxford link seals franchise extension (From Oxford Mail) Page 1 of 2

<http://www.oxfordmail.co.uk/news/4852612.print/> 17/01/2011

He claimed it would be paid for by extra revenue generated by more people travelling by rail, including customers of Oxford-London coach services, who would be attracted by the quicker journeys by train.

Mr Shooter said the work would be carried out in two phases, with speed improvements on the existing route, allowing more 100mph running, being completed before work starts on the Oxford link.

Lord Adonis will decide in the spring whether to hold a public inquiry into the Oxford-Bicester scheme.

Any inquiry would take place by the autumn.

Chris Bates, of the Cherwell Rail Users' Group, welcomed the franchise extension.

He said: "It's good news for rail users and for Chiltern it's well deserved.

"Hopefully, any new Government will see longer franchises work better than short-term ones.