

MINUTES OF ORAL EVIDENCE

taken before

HIGH SPEED RAIL COMMITTEE

On the

HIGH SPEED RAIL (LONDON – WEST MIDLANDS) BILL

Wednesday 15 July 2015 (Afternoon)

In Committee Room 5

PRESENT:

Mr Robert Syms (Chair)
Sir Peter Bottomley
Mr Henry Bellingham
Geoffrey Clifton–Brown
Mr David Crausby
Mr Mark Hendrick

IN ATTENDANCE

Mr Timothy Mould QC, Lead Counsel, Department for Transport
Mr Timothy Straker, QC, of Counsel

Witnesses:

Mr Martin Tett, Leader, Buckinghamshire County Council

Mr Peter Miller, Head of Environment and Planning, HS2 Ltd
Mr Tim Smart, International Director for High Speed Rail, CH2M Hill

IN PUBLIC SESSION

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(At 14.00)

1. CHAIR: Welcome back to the HS2 Select Committee. Mr Straker, do you have any questions of Mr Miller?

Chiltern District Council, Buckinghamshire County Council, Aylesbury Vale District Council and The Chilterns Conservation Board (Cont'd)

2. MR STRAKER QC: Yes, thank you very much, sir, if I may. Mr Miller, I think I'm right in saying, aren't I, that at one stage there was no tunnel proposed within the AONB at all?

3. MR MILLER: No, I don't think that's right, no.

4. MR STRAKER QC: All right, okay, but at some stage the tunnel came to be put or extended into the AONB. I think you touched upon that this morning.

5. MR MILLER: That's right, yes.

6. MR STRAKER QC: Could we put up, please, 7413(18)? We see there, and we are within the observations made by Natural England here, at 237, if we can just expand that a little, please, that the Environmental Statement had indicated that the extended bored tunnel options, and they specify those, all performed well on environmental grounds compared with option A, the proposed scheme, as they avoided a range of impacts on environmental receptors, which included the reduction of landscape and visual. Just pausing there, the author of this distinguishes landscape and visual as two matters for consideration. Is that right?

7. MR MILLER: Yes, it is the sort of thing we do.

8. MR STRAKER QC: Yes, it is the sort of thing you do. Ecological is another matter, cultural heritage is another matter, noise, community and agricultural impacts within the AONB, and so what is there being drawn attention to is that an extended tunnel, the options B to D, avoided a number of matters.

9. MR MILLER: Yes, that's right.

10. MR STRAKER QC: Those impacts are all there set out. They include a considerable range of matters which also have been raised for consideration for the

Chilterns long tunnel, that is to say the further extension of the Chilterns Tunnel promoted by the petitioners presently before the Committee.

11. MR MILLER: Yes, that's right. I am just trying to read that properly. I am not sure whether that is taking into account the more conventional mitigation that I previously described before lunch.

12. MR STRAKER QC: But we can be confident, can't we, that the extended tunnel as now promoted by the petitioners before this Committee would, just as the extended bored tunnel when it got into the AONB did, carry the same consequence, that is to say a reduction of impact in terms of landscape and visual?

13. MR MILLER: Yes, I am not doubting this. My answer to this is that we have looked at it from a mitigation point of view. I think what I said before lunch is that the issues are limited once you take into account the mitigation that we provided. But there are effects that would be overcome by a tunnel, that is right.

14. MR STRAKER QC: And those effects are of significance aren't they?

15. MR MILLER: They are, to a degree, yes.

16. MR STRAKER QC: They include all of these matters identified within this paragraph spelt out by Natural England ranging from landscape through to agricultural impacts.

17. MR MILLER: Yes, they don't particularly identify what they are talking about in that paragraph. It is quite a sweeping statement and I explained the detail, what is remaining and what is residual in the scheme, and that is what I described this morning.

18. MR STRAKER QC: But the paragraph is plain, isn't it, that there was an avoidance of a range of impacts by virtue of an extended tunnel?

19. MR MILLER: As I say, I don't disagree with that. That's an obvious consequence of putting a tunnel all the way through the Chilterns.

20. MR STRAKER QC: And so Natural England continue within 237, as we see. They say, 'It would seem, therefore, that an extended bored tunnel could provide the most effective means of mitigating the landscape and visual effects on the AONB'.

That, plainly, is an accurate statement, isn't it?

21. MR MILLER: In the way that they come at it, yes. They are not considering the nature of the railway, and our considerations are all about building the railway but yes, you are right.

22. MR STRAKER QC: If we just pause there, as far as the railway is concerned, on the tunnel proposal before this Committee produced by these petitioners the speed of the railway would be something in the order of 320 kilometres per hour, which would match the speed as proposed through the Chilterns at surface level?

23. MR MILLER: I am sorry?

24. MR STRAKER QC: The speed through the tunnel.

25. MR MILLER: In the tunnel?

26. MR STRAKER QC: Yes.

27. MR MILLER: Yes, I guess it would be that sort of thing.

28. MR STRAKER QC: Yes, because somebody has identified that there's plus or minus 10 seconds between the tunnel as proposed and the surface route railway.

29. MR MILLER: I haven't done the maths, so I will take your word for that.

30. MR STRAKER QC: Thank you. So, if we keep on focusing on 237, there is advice given by Natural England as to a need for greater clarity regarding the Environmental benefits and disbenefits of all the extended tunnel options to aid understanding and comparison between them.

31. MR MILLER: I believe we've done that, yes.

32. MR STRAKER QC: Does that belief that you have done that derive at least in part from the commissioning of Arup to explain the emerging approach to landscape on the part of HS2 Limited?

33. MR MILLER: Yes, what I said to this Committee is that this is a continuous process. The Environmental Impact Assessment does not stop just because we produce

documents. We continue to look at the merits of other people's arguments and so it continues.

34. MR STRAKER QC: If we go, please, to the Arup document, and for present purposes I will ask for 7408/402 to be put up, we see that this just records the date, I think, that Arup produced this document for HS2 and I think it is done quite recently in July of this year.

35. MR MILLER: Yes.

36. MR STRAKER QC: No doubt, obviously, they had done some work beforehand. Within this document I am right in saying, am I not, that there is no comparative exercise between a tunnel as mitigation and other forms of mitigation within the AONB?

37. MR MILLER: That's not the purpose of this document.

38. MR STRAKER QC: No, and Arup weren't invited to do any such comparison, notwithstanding the suggestion by Natural England that we have just been looking at?

39. MR MILLER: No, I think that our comparisons have been done beforehand. We've looked at the longer tunnel options and I believe we have made that plain to the petitioners that yes, there are benefits of having a longer tunnel. There are some disbenefits to that and it pushes effects outside of the area of outstanding natural beauty, but we also recognise that there are environmental benefits that accrue and, as I said earlier today, we don't deny that there are those benefits, but they come at a huge price and that is the price of the additional tunnel.

40. MR STRAKER QC: In any event the particular document by Arup did not compare one with the other.

41. MR MILLER: As I say, it is not the purpose of this document to do that. We have done that earlier on in the process and we have made that plain to the petitioners.

42. MR STRAKER QC: I see. Can we just look, if you don't mind, at an aspect of this document 74081. We can see there in circle form a number of ingredients are put into consideration of what is under the label 'landscape'. If we blow that up a little, just

the circle, we can see a variety of matters contained within that ranging from land ownership, which is under the 'cultural, social and heritage', enclosure above that. Sometimes it is difficult to read the particular words but we have 'site, natural' and then, 'aesthetic and perceptual', is it – matters that one can perceive?

43. MR MILLER: Yes.

44. MR STRAKER QC: Yes. It is right to suppose, isn't it, that it is perfectly possible to make a comparison landscape scheme with landscape vision for any given area of land?

45. MR MILLER: This is not the purpose of this document. The purpose for comparison is all to do with the Environmental Impact Assessment scope and methodology and that is part of the Environmental Impact Assessment itself. We consulted on that back in 2012 and then we considered, through the community forum events, the merits of other people's views about this particular scheme. We had looked at the effects of further tunnelling, so what this is trying to describe is what is the next step, not what is required by way of comparison; that has already been done.

46. MR STRAKER QC: Just to track back, though, to my question, if you don't mind, Mr Miller, it is simply this. When one sees a document such as that, and I am talking here about the circle and its ingredients, one can readily appreciate how it is possible, is it not, to do a comparison where one compares a landscape vision for a parcel of land with another landscape vision for a parcel of land by reference to the sort of ingredients that one sees within the circle?

47. MR MILLER: You could do that but it's not the purpose of this document.

48. MR STRAKER QC: And there is no such document produced by HS2 Limited before this Committee, is there, referable to the petitions which are presently being pursued?

49. MR MILLER: I'm not sure what you mean.

50. MR STRAKER QC: There is no such document drawing a contrast between and comparing the two landscapes, that is to say one with the tunnel and one without the tunnel, a surface level railway, before this Committee.

51. MR MILLER: Well, I believe we have addressed that before in the ES.
52. MR STRAKER QC: You say that that is in the ES?
53. MR MILLER: I believe that is correct, sir.
54. MR STRAKER QC: Let's look, if we may, please, at the same document. If we can shift it over a bit to see the text we can notice, can't we, that it has recorded by Natural England here a quotation put into the Arup report, 'The importance attached to landscapes'. We can see that in the text?
55. MR MILLER: Yes.
56. MR STRAKER QC: Yes, and we can notice how one is looking for sympathetic planning, design and management so as to offer a more harmonious link between man and the natural world for the benefit of both?
57. MR MILLER: Yes.
58. MR STRAKER QC: And what one is seeking to do, bearing in mind landscapes being attractive, looking on at the quote, it states, 'diverse and publicly valued, showing that environmental, social and economic benefits can go hand in hand'.
59. MR MILLER: I believe that's correct, yes.
60. MR STRAKER QC: That is a reference, isn't it, to the fact that, as we can come to see, landscape is recognised, the character of the landscape, what happens in the land, is recognised as contributing towards both the environmental matters and social matters and economic matters?
61. MR MILLER: Yes, I believe you can read it like that, yes.
62. MR STRAKER QC: Yes, and if we look on to the next page in the document which HS2 has produced for this Committee, we can see at 48011 on the right-hand side, 'HS2 landscape design will create a positive lasting legacy that responds to the landscape whilst acting as a catalyst to support growth by delivering wide social, environmental and economic benefits'. If we just pause there for a moment, in terms of the comparison between the social benefits gained by surface level railway, compared

with social benefits with a tunnel through the AONB, which does better?

63. MR MILLER: They can both do well. A tunnel will, as we say, overcome all of that. I say that it is overcome at a cost, and I believe that that surface route will accommodate all of those issues in many ways, but there are some residual effects, and I have described those residual effects.

64. MR STRAKER QC: We are talking here about delivering social benefits.

65. MR MILLER: Yes.

66. MR STRAKER QC: So, we have in our mind, please, the social benefits which are deriving to the AONB in consequence of a surface level railway through the AONB and my question is which is better in terms of provision of social benefits, a tunnel or a surface level railway through the AONB?

67. MR MILLER: I say that there is not a lot in it. You can get all of the benefits out of the tunnel, but I think that you can accommodate all of these issues through a surface route and we have demonstrated that through our design.

68. MR STRAKER QC: Have you identified the social benefits to the AONB through having a surface level HS2 running through it with no stops or anything of that sort, of course, within the AONB?

69. MR MILLER: I believe we have looked at the merits of each of the effects and so you might, for example, look at the footpaths. We have said that through construction there will be disruption to the footpaths so I accept that there are issues with that. Ultimately those footpaths will be put back and I believe that those footpaths will be used in the future and, as a consequence, I think that the social issues are taken up through our design.

70. MR STRAKER QC: Here, of course, it is talking about the landscape design of HS2 delivering social benefits. I didn't understand what you were identifying there as a social benefit. Can you identify one?

71. MR MILLER: Well, people use footpaths and I don't think that the scheme is detracting from the footpath network, and ultimately when that comes back into use that

footpath network will be available and that is part of the amenity of the area of outstanding natural beauty. So, I think that's an example of how the scheme is able to accommodate what happens within the AONB.

72. MR STRAKER QC: Can you look on, please, once again in this document, to 74816, please? There, on the right-hand side, we see the heading, 'Time', and we look down and see, 'The HS2 landscape design will, wherever possible, add beauty to the landscape with management in place to ensure that the design will enrich and develop to provide continual enhancement of the landscape over time'. We have seen, of course, this morning a particular viaduct which is proposed. Just help me, please, if you don't mind, as to whether that is going to be an addition of beauty to this particular landscape.

73. MR MILLER: I think that is a matter of debate, obviously. There is a possibility that a well-designed structure can contribute to the landscape. I think we have heard some examples of that and we have also heard some examples of where it doesn't work. So, the answer to that is yes it can if we pursue the design, and the attempt with this document here is to pursue that good design through the design panel approach, and that is what I have described.

74. MR STRAKER QC: Very well. Let's look on to 74097, please, within the document provided by Arup at the behest of HS2 Limited. Can we just highlight the text, 'Impact of High Speed 2 on Misbourne Valley' because Misbourne Valley is a large component part of the area of natural beauty about which we are discussing, isn't it?

75. MR MILLER: Yes.

76. MR STRAKER QC: 'The impact of High Speed 2 on the Misbourne Valley as stated to be, by Arup, will be severe and permanent. At the time of writing, the impact of the current design with a long section on the surface crossing two viaducts cannot be adequately mitigated'. Do those two viaducts include the viaduct we were looking at this morning?

77. MR MILLER: Yes, I believe they do.

78. MR STRAKER QC: So, there we see that it cannot be adequately mitigated.

Does this document provide within it some hint, some clue as to how they might be adequately mitigated?

79. MR MILLER: What I think this document is trying to do is to help stimulate a debate about these issues and that debate is being heard here about whether we can pursue a design for these sorts of schemes which are acceptable in the AONB. I believe we can.

80. MR STRAKER QC: For how long now has it been contemplated that the AONB will have the benefit of these viaducts, which are said not to be capable of being adequately mitigated, running through them?

81. MR MILLER: Our scheme has been like this for some while now.

82. MR STRAKER QC: For some while?

83. MR MILLER: Yes.

84. MR STRAKER QC: Has anybody yet come up with anything by way of a suggestion or hint as to how they might be adequately mitigated?

85. MR MILLER: What I was describing earlier on today was about how you can take into account noise issues, how we go about a design panel to look at the aesthetics of the structure, and what sort of materials you might use for these sorts of structures. So, yes, the hint is there.

86. MR STRAKER QC: I see, yes. I am being asked to make plain that this is the quotation that is being described from the management plan, drawing attention to the want of mitigation here. However, my question remains, please, as to whether we have seen anywhere any suggestion of anything by way of observation as to how it can be improved.

87. MR MILLER: I described several drawings this morning where I took you through the sort of landscape plan that would be taken up in pre-submission to the schedule 16 planning arrangements. So, what I was describing there and earlier today was the fact that we can take our clues from the existing landscape and think about how that landscape can then be brought to bear on the design. I don't think that's too far

away from what one of your witnesses said on the Chilterns Conservation Board, but the idea then is to think about this railway in its detailed design and with the grain of the landscape. I think what we have said to you is that that is partly the aesthetics of the structure, partly the landscape outcome and what that might look like, and I described this morning that within the red line boundary that we have there is plenty of room to accommodate objectives to make sure that that fits with the AONB.

88. So, there is more to come on this and we don't have all of that at the moment. As that is the quote from the Chilterns Conservation Board, what that is doing is setting up in my mind a challenge. If you think about that challenge as setting a series of objectives, then you tackle those objectives through your design and that is what Arup is trying to do here.

89. MR STRAKER QC: Yes. Arup aren't setting it out and saying, 'We quarrel with that as a proposition', are they?

90. MR MILLER: I come back to my first point. This is not the purpose of that document. The place for the scrutiny of the route through the AONB is here and against the effects which are written up in the Environmental Statement. That is the due process that we are following and that is what we should be looking at. This is the next step on. That's what we are describing here. I am describing here what we think is the next step for the detailed design and, as I say, and I repeat once again, this is part of a continuous process, so these are the next steps.

91. MR STRAKER QC: Yes, and we have seen what the continuous process has hitherto produced. Perhaps we could just remind ourselves at A199015. That takes us to, doesn't it, the visualisation of that which is proposed for one of these viaducts we have just been discussing?

92. MR MILLER: That viaduct visualisation has been around for some period of time and we have included it in the Environmental Statement. It was right to do so because we need to put information forward in a proper manner. I am not saying that that viaduct will look like that and it may well be that with excellence through design that that viaduct will look somewhat different. I think that the objectives that will come through the process that I have described will help inform that design, and I think that there will be an excellent structure across that valley. So, this is a visualisation. It's an

idea of what it might look like and it may well turn out to be something which looks a little bit different to that.

93. MR STRAKER QC: A little bit better?

94. MR MILLER: I suppose it depends on what your view is of better, but certainly the process that we've set out and the scrutiny that we're bringing to bear in terms of the design panel in the way that we will look at this in detail in pre-submission of the schedule 16 arrangements with the backstop of the local authority providing the final approval on this, I think that we've got the wherewithal to make sure that this structure comes about in a way which proves to be a good legacy in the Chilterns.

95. MR STRAKER QC: Can we just notice two points of detail, please? On the document that we are looking at, I think that one can observe the overhead equipment, which feeds the power into the train.

96. MR MILLER: Yes.

97. MR STRAKER QC: I don't think they are visible on the photomontages that we saw earlier today are they?

98. MR MILLER: People have argued with us about that before and as far as I am aware, they are included. Whether they are hidden because of the type of view, I am not sure on these photographs but to take up your point, just at the head of the train there you can see there are little white marks, and similarly all the way along here. I believe that those are accurate to the current arrangements. And you are right, they do occur along the line of the route, at about 40 to 50 metre spacings and we are not hiding from that.

99. MR STRAKER QC: The second point of detail is this, isn't it, but I just ask it of you. You have touched upon the question of approval by the local planning authorities.

100. MR MILLER: That is right.

101. MR STRAKER QC: The position is this, isn't it, that the presumption is going to be that that which is put forward by HS2 ought to be accepted?

102. MR MILLER: That's the idea of putting the plan forward.

103. MR STRAKER QC: Yes, and the position as far as the local authorities are concerned is that they can only say, 'We refuse' if something else is regarded as being reasonably practicable; that question of reasonable practicability being in the hands of the railway?

104. MR MILLER: You are right to a degree but I think what we have been describing here before this Committee is that these plans have come forward in pre-submission so that there will be time for people to have had a look at these sorts of things and I know that this Committee on making sure that the key stakeholders in this process have been given adequate opportunity to look at those. If you go to Information Paper D1, at the second bullet point, which talks about viaducts, it sets out what we are going to be doing.

105. MR CLIFTON-BROWN: Just before you go on, I want to clarify what happens in the event that the district council comes forward with a different design to that designed by HS2 and that different design happens to be more expensive.

106. MR STRAKER QC: If it is categorised as unreasonable, then it will be an exercise in vain.

107. MR CLIFTON-BROWN: But clearly in design an issue of cost is likely to arise. How will this be resolved?

108. MR MILLER: I suppose that the backstop provision ultimately will be to raise this up to the Secretary of State for his consideration. The further consideration would be whether such a design was desirable, presuming that it comes forward for good reason that this looks better, and it costs, I don't know, £10 million more or whatever it is. Then it may well be something that the Secretary of State will use the design panel to advise him on and I think the backstop provision is – Mr Mould might be able to help me on this – that the Secretary of State will then look at that, most likely with the further advice from the design panel and may or may not take up that design at that point.

109. MR STRAKER QC: There is an appeal mechanism to the Secretary of State, sir.

110. MR MILLER: Yes, I think that is the way it would work.

111. MR MOULD (DfT): It probably adopts the procedure that is applied generally to

planning appeals and transport works appeals and may involve the appointment, for example, of an inspector or an appointed person who would then report, possibly after some written representations or, in some cases, after some sort of oral hearing.

112. MR HENDRICK: Can I just ask, it's not possible to refuse a planning application on the viaduct on the basis that you want a tunnel?

113. MR MILLER: No, that would have been decided upon here.

114. MR STRAKER QC: Could we go to 740820, please, where we are again within the Arup report? I just want to draw your attention, if you don't mind, to the fourth bullet point, I think it is, which states, 'The design provides environmental, social and economic benefits'. I just want to ask you this perfectly general question, if I may. That suggests that landscape design can contribute towards environmental, social and economic benefits, doesn't it?

115. MR MILLER: It can do, yes.

116. MR STRAKER QC: I take it that the position is equally one whereby if one has poor landscape, bad landscape, bad landscape design, one can produce or contribute towards environmental, social and economic disbenefits?

117. MR MILLER: I don't really understand that because I can't think of anything which is poor landscape design. That seems a very odd thing to say. If you go out and you are a landscape designer, presumably you are not going out to design the thing to look dreadful. What is this about?

118. MR STRAKER QC: Let's take it away from an individual designer. There, what is contemplated is that landscape can contribute towards environmental, social and economic benefits. That is what is being indicated there, isn't it?

119. MR MILLER: Yes, and good landscape design will help to get you to that. You can think of that in a number of ways. I can't envisage something which is poor landscape design. It doesn't seem to me to cover that.

120. MR STRAKER QC: You can certainly envisage, I suspect, poor landscape?

121. MR MILLER: I still don't understand what that means.

122. MR STRAKER QC: You can certainly envisage, I take it, poor landscape, can't you?

123. MR MILLER: I am still not sure what you mean by that.

124. MR HENDRICK: That's a subjective judgment.

125. MR STRAKER QC: I am sure it is a subjective judgment, sir. I am simply asking the witness whether he can envisage something which, in my judgment, okay, would be viewed as poor landscape.

126. MR MILLER: Let me try and answer it like this. You can tender and a design might come forward which is poor and it detracts. I would say that as the landscape designs come forward for the route, then the process that we have, the backstop that we have with the planning regime bringing that into account with the district authorities, will ensure that good landscape design will occur. So, as that comes forward, if something is deemed to be poor, and this is what the purpose is of those provisions, the district council could turn around and say, 'Actually, we think you can do better.' It's the same points. 'You can do better. Go away, get it done better because we've put these reasons', and we would go away and get it done better, but I can't actually envisage any landscape designer ever coming forward with something which looks anything like poor design. I think it just won't happen.

127. MR STRAKER QC: My question was that a poor landscape can produce and contribute towards environmental disbenefits can't it?

128. MR MILLER: I don't think I can help you any further.

129. SIR PETER BOTTOMLEY: There is a word missing there. Poor landscape can contribute?

130. MR STRAKER QC: Yes, it can contribute towards environmental disbenefits. This is no more than the proposition as has been stated on many occasions that an area may be depressed because it is depressing.

131. MR HENDRICK: In an area of outstanding natural beauty, though, isn't it a contradiction to say that it is poor landscape?

132. MR STRAKER QC: Well, it certainly ought to be a contradiction in terms, sir, yes, that is so, but I am simply trying to elicit what one would have thought, with the greatest respect, is a statement of the obvious that the counterpoint of a design, a good design producing environmental, social and economic benefits, is that if one has something which is poor, there can be disbenefits.

133. MR MILLER: Or either.

134. SIR PETER BOTTOMLEY: I thought I ought to have heard the word, yes. Poor landscape design can contribute to make things worse, yes.

135. MR STRAKER QC: Yes.

136. SIR PETER BOTTOMLEY: I don't see how a poor landscape by itself can make things worse.

137. MR MILLER: I think if you add the word 'design' in, my answer runs properly because then what we are saying is that the planning regime provides that backstop. In a way that means that we are not going it alone and coming up with something which is just going to be imposed. That simply isn't the case. So, we're able to bring that forward through the planning regime. We've thought about this for quite some time and actually this approach has been applied on High Speed 1. It has been applied on Crossrail and it works and, as I say to you, I cannot envisage any landscape designer in this country coming forward with a poor landscape design. They will not do it. This is a premium project and their reputation will be shot if they come forward with a design which is no good. Their careers would simply be over. They are going to be looking at this job to make their mark. There's no question about that and that is no different from our structure across Wendover Dean. There's no difference between that where we have been planting for hedgerows and this sort of thing. To say otherwise I think does not do our project any justice.

138. MR STRAKER QC: If we look on, please, we can see what is said about that particular matter to P74094. If we go to the foot of the page, please, to there, 'However, the print of HS2 will still result in significant adverse effects on two landscape character areas and of a number of visual receptors after 15 years'. Do you see that?

139. MR MILLER: I see that, yes.

140. MR STRAKER QC: And that is the Ove Arup text?

141. MR MILLER: I believe that is, yes.

142. MR STRAKER QC: So, we can be sure that there will be significant effects bearing upon the landscape?

143. MR MILLER: Yes, that's what's brought these proceedings here and that's got to be taken into account with a decision taken on the route going through the Chilterns. That's right.

144. MR STRAKER QC: Now, we've seen that Arup weren't concerned to consider by way of mitigation the possibility of a tunnel. Can we switch track here, if you don't mind, for a moment or two, just to see what is actually occurring? If we go to A1179(22), we can notice, can't we, that with the scheme which you are promoting we have the route of the tunnel shown against the background of the landform with a dashed line?

145. MR MILLER: That's right, yes.

146. MR STRAKER QC: And it rises at a gradient which is equalled or unequalled anywhere else on the railway system in England?

147. MR MILLER: I'm not sure of the answer to that, to be honest with you. I think we've said that it's a fairly steep gradient.

148. MR STRAKER QC: Yes, and it emerges from a tunnel, the railway rising in that steep gradient. It emerges, rises and comes out of the tunnel at the top of a hill. Is that something which is a usual feature when one has a railway in a tunnel, that the tunnel emerges at the top of the hill?

149. MR MILLER: I don't think it's impossible because we've done it and it meets all of the railway standards and requirements, so that is our consideration. That is what we have put forward.

150. MR STRAKER QC: You have done it elsewhere or you have suggested it here?

151. MR MILLER: I am probably the wrong person to be asked that question to be honest with you. I'm not a railway engineer. I am an environment person. So, I am sure that the railways can do this sort of thing.

152. MR STRAKER QC: Very well.

153. SIR PETER BOTTOMLEY: We were told one in 40, is my recollection.

154. MR STRAKER QC: Yes, I think it's classified as 3%.

155. SIR PETER BOTTOMLEY: That is an approximation to one in 40.

156. MR STRAKER QC: Yes, I know. That's how they do it, in effect. If we could just cast our mind, whilst we are in this document, to 117967, we can notice, can't we, that in terms of earthworks there is a very significant difference between the two schemes and all those matters there identified will bear upon the landscape won't they?

157. MR MILLER: Yes, to a degree.

158. MR STRAKER QC: I am taking it from the previous answer that you are not the person to talk to about the energy savings in terms of the tunnel being at a more favourable gradient than the proposed surface railway?

159. MR MILLER: I think from a railway perspective you perhaps ought to ask someone else.

160. MR STRAKER QC: Very well. I just want to pursue this matter by way of a point of detail, if I may, because there was reference earlier today to the question of fencing. Obviously there has to be fencing along the line, save that one doesn't obviously fence the tunnel. Is that correct?

161. MR MILLER: Well, I think it depends on how the land ownership goes back. I think all of the tunnels on High Speed 1 went back without fence lines on them but if it doesn't go back to another landowner, it may well be that the railway has to put a fence on top, but I think from memory there is a tunnel at Leeds Castle where I think originally that happened and then it was eventually sold off. I am not sure entirely about a fence line.

162. SIR PETER BOTTOMLEY: I think you can say that we all understand that most tunnels don't have fencing?

163. MR MILLER: Yes, that's right for bored tunnels. I think with cut and cover tunnels there might be a little bit of difference.

164. MR STRAKER QC: Yes. You very kindly gave us the height of the fencing. The fencing also has to be kept clear at all times of any sort of overgrowth or anything of that sort otherwise it would lose its security consequence wouldn't it?

165. MR MILLER: What I was trying to illustrate is that the fencing needs to be thought about in the detailed design as to where it is positioned and the fence line takes some time to work out. It is not the thing that you do first of all. It's probably the thing that you do last of all, particularly when you are thinking about the reappointment of land that we have taken to build the scheme and what ultimately might go back to others by way of earthwork raising and that sort of thing. I think that we may need to furnish the Committee with a note about the fencing because I have said one thing but I think there may be other ways of looking at the fencing from our technical perspective.

166. MR STRAKER QC: I want to turn, if I may, to the question of cost. Could we please have put on the screen P7470(33). Just so that we align ourselves, we are here within a document produced by HS2 responding to the Chiltern long tunnel proposal.

167. MR MILLER: Yes, that's right.

168. MR STRAKER QC: We can see at 7470(33) that at 516 reference is being made to the cost of the loss of the environment.

169. MR MILLER: Yes.

170. MR STRAKER QC: It is cited as part of a comparison of construction costs and whilst it can be agreed that the authors say that loss of the environment is a negative impact for the proposed scheme, it is intangible regarding cost and should not be included in the costs comparison. Do you see that?

171. MR MILLER: I do.

172. MR STRAKER QC: Indeed, the authors are good to their own word and when

they do the cost comparison, they exclude any loss of the environment.

173. MR MILLER: I guess from that paragraph that is what they are doing.

174. MR STRAKER QC: I am right in supposing, am I not, that land within the AONB has a social value?

175. MR MILLER: Yes.

176. MR STRAKER QC: It is part of the social capital?

177. MR MILLER: Yes.

178. SIR PETER BOTTOMLEY: If we are going to have a great range could you put them in one sentence and we can deal with the lot together?

179. MR STRAKER QC: That would upset the habit of a lifetime, sir, but I will try as best I can. So, one can put it in a variety of ways in that sort of social capital. I am right in supposing, aren't I, that over the past 15 years at least, efforts have been made to secure some means of valuing what may be described as social capital?

180. MR MILLER: I think you're right, yes.

181. MR STRAKER QC: And that can run through the Treasury Green Book, Supplementary Guidance on Accounting for Environmental Impacts.

182. SIR PETER BOTTOMLEY: You are rehearsing what we have heard from the witness before, so the methodology I think is still in our minds.

183. MR STRAKER QC: Good. I think in terms of HS2 you have drawn attention to the fact that some £1 billion was assigned. This is P7501. Could we put up P7504(2)? You see there at paragraph 7 that this is HS2 drawing attention to non-market effects being intended to represent a range of impacts which may include landscape amenity benefits.

184. MR MILLER: Yes.

185. MR STRAKER QC: It follows that the petitioners, it said, engage in double accounting by both requiring a figure for non-market effects and quantifying impacts on

health and wellbeing, amenity, etc., in addition to these effects. That is said because it is indicated there that the non-market effects figure embraces a number of given ingredients.

186. MR MILLER: Yes, what the WebTAG process is doing is helping a decision at that point, an earlier point in the process. It helps people promoting projects think about the overall economic benefits of a project or otherwise.

187. MR STRAKER QC: Then if we look down to paragraph 7 you see at the foot of the paragraph that a re-estimate of these impact was conducted to inform the 2003 HS2 economic case and the value for Phase One was estimated to be approximately £1 billion.

188. MR MILLER: Yes.

189. MR STRAKER QC: That is something, is it not, in the order of 140 miles leading to £7 million or so per mile?

190. MR MILLER: I will take your calculation.

191. MR STRAKER QC: It is something in the order of. That figure was calculated on the basis of attributing to each mile of the HS2 route the same figure?

192. MR MILLER: I am not sure of that.

193. SIR PETER BOTTOMLEY: You don't need to get him to do a calculation, which is perfectly fair, an arithmetical test, but you are now saying that that is how they created it?

194. MR STRAKER QC: Yes, by reference to a figure per mile whether there were particular assignments.

195. SIR PETER BOTTOMLEY: I am sorry, I thought that you created the figure per mile; they just gave a gross figure.

196. MR STRAKER QC: Yes.

197. SIR PETER BOTTOMLEY: So, the question is how did you get to that figure?

198. MR MILLER: I don't do the calculation, by the way; I contribute information to the calculation and the department carries out the calculation. There is advice out there. I think we waggled a document around the other day and in there, there are factors that are applied to establish the monetised value of the landscape. There is a variety of factors that are applied along the line of the route. So, you can envisage a situation where you have a percentage of your land along the line of the route being of quite a degraded quality and that has value associated with it and you go to the other extreme where there is higher value attributed to land.

199. So, a calculation is made, and I suspect it is very crude, on the basis of percentages of that land that you will come across along the line of the route and then a formula is applied, a calculation is carried out and a value of roundabout £1 billion is then established and then that is looked at in terms of the overall benefit cost ratio and I think it amounts to about 0.1%.

200. SIR PETER BOTTOMLEY: If Mr Straker is leading us sensibly to think did the promoters take the land going through the AONB as better and a higher figure reached per kilometre or distance than they would have done if they had been going through ordinary agricultural land, they are not going to be disrespectful to that?

201. MR MILLER: I think that there is a high sensitivity category for high quality agricultural land. So, I think it's a combination.

202. SIR PETER BOTTOMLEY: If we are looking for a factual answer, perhaps Mr Mould can help us.

203. MR MOULD (DfT): I can, I think. There are two thoughts. If you scroll down to the next page of this document to page 3 you will see an assessment process which is set out in the tables. That is the process, or essentially the process, that was gone through in order to arrive at the figure of about £1 billion. You will see that as part of that process there is at number 5, 'Landscape impact valuation', which requires an assessment using landscape values recommended in the advice.

204. SIR PETER BOTTOMLEY: You actually do take segments in the scheme?

205. MR MOULD (DfT): We do.

206. SIR PETER BOTTOMLEY: So, I think Mr Straker has been helpful in getting this out.

207. MR MOULD (DfT): Then you have a table, a version of which you were shown the other day, I think, by Mr McCartney or at least by Mr Straker after Mr McCartney had given his evidence. You will see here the range of landscape values that are included in the adopted methodology for the purposes of assessing these impacts. You will see that amongst those are rural forested land amenity, agricultural land, extensive and natural and semi-natural land. The position is that the segmented approach to ascribing landscape impact values to land through the Chilterns was made up of those three impact values, so they were ascribed as was considered appropriate by those who carried out the assessment process, and that was fed into the method that you saw in the previous pages.

208. SIR PETER BOTTOMLEY: So, there is nothing specifically added on for being an AONB but the kind of land it is is taken into account for this kind of calculation?

209. MR MOULD (DfT): Yes. This is the approved process, which sits within the wider remit of the Green Book and the WebTAG assessment process, which is applied on a scheme-wide basis, as you heard the other day, resulting in that figure that I showed you from the promoters' decisions document in 2012.

210. SIR PETER BOTTOMLEY: If I were a junior advocate and I looked at this at 12 where they say they haven't assessed the scheme, or some of it, that is producing a minus rather than adding a plus to this. You can't counterbalance doing damage somewhere by the fact that you haven't done damage somewhere else.

211. MR MOULD (DfT): No, exactly. The whole point is that you take the scheme as it is – in this case the Phase One railway.

212. SIR PETER BOTTOMLEY: Sorry, Mr Straker.

213. MR STRAKER QC: It's a very interesting discussion.

214. SIR PETER BOTTOMLEY: We are trying to get to the point of what your lawyers say.

215. MR STRAKER QC: Yes, I trust and it would appear that the point is emerging and becoming patent. Can I just then take it, bearing in mind that that has happened in this short form way, with Mr Miller because I just want to get at, Mr Miller, the actual price that you were ascribing to the AONB land.

216. MR MILLER: To be honest with you, I'd have to check because I am not the person who does the calculation. It is the department who does the calculation, not the project. The purpose of that is to test whether the overall economic case stands up once you have taken these figures into account. So, you can rightly see that there may be a disbenefit to the wider landscape as a result and that may prove to be a tipping point in your benefit costs ratio. That is not the case here. We will have to clarify that but I think it's a proportion of the last category and a proportion of the penultimate category which has been accounted for in the AONB.

217. MR STRAKER QC: Natural and semi-natural land and agricultural and intensive?

218. MR MILLER: I believe that is the case, yes.

219. MR STRAKER QC: A proportion of both?

220. MR MILLER: I believe that is right.

221. MR STRAKER QC: I see, with the ranges there given in the middle column. Can I just then, with a confirmatory question, take you to P7470(40). It is confirmatory to show that in the exercise done with costs for the Committee there is nothing in there, if we blow it up, referable to the social capital attributed to this AONB land?

222. MR MILLER: I think that's right, yes.

223. MR STRAKER QC: Yes, and if we go back in the same document to 747037, and blow up 711, the clear statement is made that there would be a provision of overall environmental benefits compared to the scheme during both operation and construction.

224. MR MILLER: Yes, I go back to my original answer to you in this afternoon's session that the residual effects, I believe, are minimal and the way that we have come about the environmental mitigation is to look at each of those effects in turn and provide

appropriate mitigation where we can and in the conventional sense I think that the scheme has largely been successful, but you are right, an overall total.

225. CHAIR: Order, order. I shall adjourn for 15 minutes due to a Division in the House.

Sitting was suspended

On resuming—

226. CHAIR: Order, order.

227. MR STRAKER QC: Thank you very much, sir. I don't want to detain you much longer. If I may, I just want to draw that character of the discussion to a conclusion in this way. I'm right in supposing, aren't I, that in the various forms of appraisal which are set down – and we've run through certain of the documents and I did that briskly – the landscape to be assessed is considered according to its particular quality?

228. MR MILLER: Yes, that's right.

229. MR STRAKER QC: In certain instances there's a seven-point scale and AONB, naturally enough, comes out on the top.

230. MR MILLER: Sorry. Are we talking about that table?

231. MR STRAKER QC: Not that table. This is an appraisal summary table provided for by the TAG unit – A3. It's not within this.

232. MR MILLER: I see what you mean. Yes, you're right. Yes.

233. MR STRAKER QC: That's simply a function of the fact that this is nationally regarded as important land.

234. MR MILLER: Yes. I've described earlier today that it is a national asset, there's no doubt about that, and a nationally important piece of railway infrastructure in that context.

235. MR STRAKER QC: The Committee has a very difficult task because on the one hand, as we've seen, one can compare landscape assessments using landscape terms and on the other hand we have a difficulty in comparing effect upon landscape and

trying to put it into monetary value.

236. MR MILLER: Well, all of the information is there and it's been used in the right way. You've described the WebTAG process and you've shown that on the screen here. That has taken place at the right time to assist with the economic case and the decision to proceed with High Speed Rail. So the landscape issues have been accounted for at that point. Where I move on to with that is the Environmental Impact Assessment. What we're then looking at is the likely significant environmental effects and how we tackle those and moderate those and that's accounted for in the Environmental Statement, as published.

237. MR STRAKER QC: It may be that we're not going to get very much further, but I just want to draw out from you, if I may, the fact that as we can see, one tends to describe landscape using words, but one can describe the cost of construction using pounds and pence.

238. MR MILLER: Yes.

239. MR STRAKER QC: The difficulty that the Committee has is because on the one hand it can be told, approximately of course, pounds and pence for physical things happening at works, but to translate quality of landscape into a number is a difficult task.

240. MR MILLER: It is. I sometimes think that trying to translate everything into a numeric value in some ways loses the point of the debate. In a lot of ways, I think that the way that it should come forward is to think about the relevant qualities of the issues that are at stake and the response to the effects that these sorts of projects have and that's what we've done. I think that's the debate that we've had over the last couple of days.

241. MR STRAKER QC: In considering the issue at stake, you would ask the Committee, I take it, to have very much in mind the numbers of people who live within a comparatively short distance of the AONB?

242. MR MILLER: I think what I want from the Committee is for it to look at the facts as they've been brought forward. That's the purpose of this. If there is a

counterargument then that should be rightly heard. I believe that we've got it right in the Environmental Statement. We've been at this for some time now. As I explained earlier, we have set out our scope and methodology for the assessment and how we bring all of this information forward. We consulted on that back in 2012. We've given people a lot of opportunity to contribute to this process and I think that the Environmental Statement is well informed. Our decisions in terms of the mitigation and compensation, I believe, are well informed by the expert analysis that has been provided in that Environmental Statement and that is what we are presenting today. I think that the residual effects in the AONB are relatively modest in scope. I've demonstrated that I think there is further room to accommodate some further designs and that sort of thing, fitting the railway into the landscape, and that really is our case.

243. MR STRAKER QC: Just to go back to my question, you would ask the Committee to be particularly careful, wouldn't you, and to have very much in mind the numbers of people who live within and are able to enjoy the AONB?

244. MR MILLER: Yes.

245. MR STRAKER QC: Thank you. You would also ask the Committee particularly to have in mind the rarity of AONB land in England and the fact that the HS2 railway as proposed goes through but one Area of Outstanding Natural Beauty?

246. MR MILLER: I don't dispute that, no. I think that should be taken into account.

247. MR STRAKER QC: Thank you very much. Would you mind if I leave matters there, sir?

248. CHAIR: Thank you, Mr Straker. Mr Mould?

249. MR MOULD QC (DfT): Lest there be any misunderstanding, I just want to confirm one thing on P7408(1), a document which Mr Straker referred to as the Arup document. He is right; it bears Arup's name as the authors of the original draft. Mr Miller, this is a document – the landscape design approach – which has been adopted by the project, isn't it?

250. MR MILLER: It is. Arup was commissioned to assist us with producing this document. I think I've given evidence on this before, but this is part of the process. It

was part of a pilot for the design panel that I described earlier on. It's bringing forward the landscape design approach as early as we can in the process.

251. MR MOULD QC (DfT): The other thing which I thought it might be helpful just to show the Committee – it was raised and debated – is page 326 of the Bill, which is the relevant paragraph of Schedule 16. Just scroll back another three or four pages. It's just below that one. Thank you. Here we go. A question was raised during debate about the basis upon which the local authority can seek changes to, or refuse to grant, consent for the detailed design submission for building works, which would obviously include a bridge or viaduct structure. You can see at subparagraph (5) here that the statutory language is:

‘(5) ...it may only refuse to approve plans or specifications... on the ground that:

‘(a) the design or external appearance of the building works ought to be modified—

‘(i) to preserve the local environment or local amenity [I think that's the relevant one]...

‘and is reasonably capable of being so modified...’

252. I think our position is that if that issue were raised by a local authority in relation to a viaduct design that was submitted to them by the nominated undertaker then clearly the question of cost would be a relevant consideration. It wouldn't be the only consideration, but it would be a relevant consideration in judging whether something was reasonably capable of being so modified.

253. MR MILLER: That's right, yes.

254. MR MOULD QC (DfT): Thank you.

255. CHAIR: Thank you, Mr Miller.

256. MR MOULD QC (DfT): There are two matters which I would ask Mr Smart to deal with briefly and then obviously questions from Mr Straker if there are any.

257. MR SMART: Good afternoon, sir.

258. MR MOULD QC (DfT): Mr Smart, just two points. The first relates to this question of power usage and the point that was made by Mr Blaine about the greater amount of electricity that would be required in order to power the trains up the gradient as they approach and pass through the Mantles Wood Portal. I just want you, please, to help the Committee in putting that into the context of the relative power requirement for the railway if, rather than at surface from thereon in, it were to proceed in a tunnel until the western boundary of the AONB.

259. MR SMART: Yes. I think what Mr Blaine explained was that because of the gradient there would actually be a power saving that would come out of the proposed longer tunnel. I don't know exactly what calculations he has done, but I can see that if that railway were on the surface then one might be able to extrapolate maybe the power saving that he has suggested, but I think, as the Committee will recall from my presentation on tunnels, it isn't straightforward when you have a train in the tunnel. You have to look at the railway as a whole system, the rolling stock in combination with the tunnel, so it depends on rolling stock factors – the speed of the train, the length of the train, the cross-sectional area of the train, aerodynamic capability, the design of the train – and it also depends on infrastructure factors, such as the size of the tunnel, the portals and cross-sectional area, but I think the two most important factors in all of this are the speed of the train and what we call 'blockage ratio' which is the cross-sectional area of the train in relation to the tunnel. When you put that in a proper modelling system and you look at the tractive effort required under the extended tunnel compared to the Bill tunnel, it results in a four per cent increase in energy required to traverse the Chilterns in the longer tunnel than the shorter tunnel. To give you some kind of perspective of the three key parameters that I've talked about, if you were to increase the size of the tunnel by a metre then you would reduce the increase in tractive effort to about half that, which gives you some idea of the effect of the tunnel that I'm talking about. So in fact the longer tunnel results in an increase in traction power.

260. I think Mr Blaine gave an example of about 6,000 houses that he thought would be saved by the saving in energy. I don't quite know where he got that figure from, but if you were to take typical Ofgem figures for a domestic house – I think they quote 8.7 kWh/day for the average domestic house – the increase in energy equates to about 12,500 kWh per hour. If I were to translate that into a similar sort of example that

Mr Blaine used, that means the extra energy required to go through the longer tunnel would actually power about 25,000 domestic houses. So that's really the difference. It's about looking at the effects of the tunnelling in terms of the air issues that you get and not just the gradient, which is not the dominant factor in a tunnel.

261. SIR PETER BOTTOMLEY: You require less power to go in the open air than you do to go through a tunnel because you're not going to push the air aside?

262. MR SMART: Correct, Sir Peter.

263. SIR PETER BOTTOMLEY: You're saying that the extra length of tunnel outweighs the undoubted greater unevenness of the Promoter's scheme?

264. MR SMART: Yes, significantly. Of course, my example, by saying that if you increase the tunnel size you halve that extra, is that the closer you get to fresh air the better it gets.

265. SIR PETER BOTTOMLEY: Although there was of course the atmospheric railway, where you took all the air out and pulled the train along with suction.

266. MR SMART: I should also say that that is just the traction power. Of course, as the Committee has already heard, in tunnels you require a lot more mechanical and electrical plant and equipment and that also requires power. I think you've also been aware from previous evidence that we do have a problem with cooling – the longer the tunnel goes. When you get above 10 kilometres, you do require active cooling in the tunnels. On a tunnel of this type of length, with seven shafts, we'd probably be putting in 1.5 to 2 mW of cooling at each shaft to keep the temperatures under control.

267. SIR PETER BOTTOMLEY: One of the cases put forward by the petitioners is that having ballastless track in the tunnel makes it easy to monitor its state and makes maintenance cheaper. Is a ballasted track cheaper to install than a track without ballast?

268. MR SMART: Potentially we could use ballasted tracking in cut and cover – what have been called 'green tunnels' but they are cut and cover tunnels. The bored tunnels have concrete slab in them. In terms of your general point, in terms of ballast versus slab, slab is much more expensive to put in, but of course you get the payback on the whole lifecycle cost because you do less maintenance. Ballast is cheaper to put in, but if

you have a heavy tonnage then you have to do a ballast clean and tamp the line to restore the profile of the ballast. It does come with a heavier maintenance burden. So there's a definite trade-off to be played there. Of course if you have ground movements as well, if you have significant cuttings and embankments, which we do have, there's also the question of how you deal with the ground movement in relation to the track profile.

269. SIR PETER BOTTOMLEY: Is it the intention to have ballast on the track in the open air on most of the line or is it too early to say?

270. MR SMART: We've made the decision that in tunnels – I think it's fairly clear that what is bad is having constant transitions between ballast and slab. If you consider the amount of running tunnel and viaduct that we have as we come out of London, subject to detailed design, I'd be very surprised if we weren't on a slab formation all the way until we get out of the Chilterns. When we get out of the Chilterns and into the area going north, where we do have a lot more cuttings and embankments, there is more of a choice to be made between a ballasted track or a slab track. There is still, I think, an optimisation process to look at because there are also the effects on construction. If you get significant ground movement, it's about whether and how you contain that in a slab situation.

271. SIR PETER BOTTOMLEY: Can I ask you one last question? We've been told that you can go at a certain speed in a bored tunnel, at a higher speed in a cut and cover tunnel and potentially a greater speed completely in the open air. Why is the speed in the cut and cover tunnel allowed to be higher, or it would be higher, than in a bored tunnel?

272. MR SMART: Well, it's not necessarily. You still have to have the free air to deal with the pressure, to deal with the phenomenon that I'm talking about, which is the pressure of the air. We have some constraints on coming out of London in terms of the size of the tunnel, but you can design for it. It's just a question of how big you make the cell or how big you make the bore.

273. SIR PETER BOTTOMLEY: Thank you.

274. MR MOULD QC (DfT): Mr Smart, again, could you just pull back a bit in your

chair because Mr Hendrick is looking at your back?

275. MR SMART: Sorry. I do apologise.

276. MR MOULD QC (DfT): Just for reference, I've put on the screen paragraph 5.1.5 from our response report to the Chilterns Long Tunnel, which is in the documents. We don't need to read it out. It summarises the point that you've been making about power needs. The other question I wanted just to confirm with you was the question of security fencing. For that purpose if we can put up, please, slide A1185(3). This was Mr Kirkham's slide. I think you'll recognise this, Mr Smart.

277. MR SMART: It's High Speed 1. I think the Committee might recognise it from a site visit. That's North Downs. So what you have here is that – clearly the railway has to have a security fence. Mr Miller was talking about how you create landscaping and roll the landscaping in. Here, it shows an example that at the top of the cutting you can use a normal type of rural-type fencing, which could be rail and post because this is really just keeping animals out and demarcating the top of the line, and you can put the security fencing, which is typically a wire fence, potentially three metres high – we need to do the detailed design – further down the cutting and much closer to the line side and therefore it isn't intrusive on the landscape. Mr Miller talked about palisade fencing. Depending on where your railway is going, if you are going through urban areas where there's a significant risk of trespass and vandalism and you have more important railway line-side equipment, you might well use palisade fencing, as is used on the national rail network, but certainly in the rural areas this is typically what you will see. I think the Committee will recall that on High Speed 1, as part of economical vegetation management, they actually allow sheep on the line between the security fence and the rural fence at the top of the cutting.

278. MR MOULD QC (DfT): As you see on the reservoir, it's just to the west of –

279. MR SMART: There isn't actually one on that photo unfortunately, but that's a bit closer to the portal.

280. MR MOULD QC (DfT): Whilst we have this in front of us, and I don't say that this is an example of it, just as a matter of interest, what is the steepest gradient that you have?

281. MR SMART: As I think Sir Peter correctly said, 1 in 40 is the steepest gradient.

282. MR MOULD QC (DfT): Thank you very much.

283. MR SMART: Thank you.

284. CHAIR: Mr Straker?

285. MR STRAKER QC: Thank you very much. Can we put back up, please, P7470(33)? This is the passage to which you were referred. In particular, paragraph 5.1.5, as stated in section 4, is within a report which was prepared expressly to contrast and compare the Chilterns Long Tunnel with the at grade scheme, isn't it?

286. MR SMART: Yes.

287. MR STRAKER QC: Yes. Paragraph 5.1.5 appears in a section dealing with construction costs, which one sees from the top.

288. MR SMART: Yes.

289. MR STRAKER QC: Paragraph 5.15 draws on section 4.4 for the proposition that it makes.

290. MR SMART: Yes.

291. MR STRAKER QC: Can we go back to section 4.4, please, on page 7470(28)? This begins at paragraph 4.4.1 and is contained under the heading: 'Traction power and overhead contact system'.

292. MR SMART: Yes.

293. MR STRAKER QC: Paragraph 4.4.1: 'In overall terms, based on comparative single train performance simulation runs for a 400-metre long train...' Just pausing there, that's the estimated length of the conventional HS2 trains?

294. MR SMART: Yes.

295. MR STRAKER QC: '...that have been undertaken...' So those simulation runs will have been done presumably through a computer model?

296. MR SMART: Yes.

297. MR STRAKER QC: ‘...total train mechanical energies are predicted to be slightly lower for the proposed [Chilterns Long Tunnel] option...’

298. MR SMART: Yes, but it does go on to say: ‘However there is predicted to be an appreciable redistribution... of average traction...’ This really here was looking at the construction costs of the tunnel. It wasn’t necessarily looking at the energy requirements in the way that you have suggested. That has to be done as a separate piece of work.

299. MR STRAKER QC: Well, it says what it says and refers to ‘total train mechanical energies’. That phrase there used is used to describe all total mechanical energies associated with the mechanisms of the train. Is that right?

300. MR SMART: Well, it is right, but that comes back to how you’re looking at just the gradient if you’re in air compared to where you’re in tunnels. What needs to be done on top of that, as we have carried out, is a different assessment, if I may say that.

301. MR STRAKER QC: Anyway, that is what was said in the report. If we look, please, at page 47470(27), the preceding page, and paragraph 4.3.1 and what was done on behalf of HS2: ‘An assessment [was] undertaken to determine the implications of journey time, technical headway and mechanical traction energy between the Proposed Scheme and the alternative CLT proposal’. So compare and contrast was the exercise undertaken, yes?

302. MR SMART: That’s right.

303. MR STRAKER QC: That was in relation to the implications as they are set out, to include mechanical traction energy. If we look over the page, please, at page 47470(28), the authors have set down in tabular form, haven’t they, if we go to the top of page 28 please, the various ways down away from London and up to London? We can see there the first two lines across are the HS2 as proposed scheme, but that has the nought value, because one is seeking to see a variance from it, and then ‘PBA’ is the Chilterns Long Tunnel scheme. The journey time differences are recorded down as three seconds and up as ten seconds.

304. MR SMART: Yes.

305. MR STRAKER QC: Then the technical headway is recorded and then we have the summated journey mechanical energy in kilowatts per hour, is it?

306. MR SMART: Yes.

307. MR STRAKER QC: We can see that there are differences in mechanical energy from baseline favourable in terms of less energy being employed: PBA down is minus 8 and PBA up is minus 190.

308. MR SMART: Yes, but what this is looking at is the actual mechanical and electrical plant that you need to provide the energy to the train. It is not looking at what the train is actually drawing at the pantograph as it goes through the tunnel either accelerating or braking. It's an apples and pears comparison that you're making. You would have to look at a report that actually looks at what happens with the train tractive effort and what it would draw. What this is saying is that in order to extend the Chilterns tunnel we would not need to put in bigger autotransformer stations necessarily and, if you like, make the actual feeder stations larger etc, but what we're looking at is the running costs – as Mr Blaine said, the energy that is required by the train – and it's two different things.

309. MR STRAKER QC: Then if we just go down the page a little bit, please, to paragraph 4.3.4, the authors have added: 'The summated mechanical energy figures show an energy saving over the Baseline due to the tunnel alignment providing [as it does] a flatter profile than the Proposed Scheme. Tunnel resistance is of less impact than gradient in this case. The impact of the mechanical energy figures is discussed in the traction power section'. Pausing there, the authors were well alive, weren't they, to your point about tunnel resistance but expressed openly the point that it was of less impact than gradient in this case?

310. MR SMART: Well, that is because we were looking at the gradient of a tunnel and the analysis that has to look at the other factors was not carried out in relation to a construction report, which is probably why Mr Blaine suggested that there was actually a favourable power benefit, because it's really looking at the gradient. Although it has reported that there are other factors, you in fact need to do a separate piece of analysis to

get that answer.

311. MR STRAKER QC: Do we have that separate report here before the Committee?

312. MR SMART: No, because we didn't consider that you were going to raise that issue, but if you would like us to give you a technical note on why that is the case then that's perfectly possible.

313. MR STRAKER QC: I see. Well, for the moment we have this report which draws attention to the mechanical energy in the way that it does, Mr Smart.

314. MR SMART: That's that report, but as I said you're looking at one side of a two-sided coin.

315. MR STRAKER QC: The purpose of the report, as we've discussed, was because HS2 Limited was aware that we were seriously putting forward the Chilterns Long Tunnel as a viable proposal and wanted to draw a contrast between that and the ground-level scheme.

316. MR SMART: Yes, and the discussions that we'd had and what we were responding to in the report was the construction costs difference between the two schemes. It did touch on other factors, but as I've suggested there's a different analysis that you'd need to look at to get the full picture. If that needs to be made available to address the particular point that I've made then that can be done.

317. MR STRAKER QC: What the Committee has in terms of the material contrasting the mechanical energy and the time in terms of the running of the trains is that table we've just been looking at, isn't it, Mr Smart?

318. MR SMART: Well, that is on the gradient, yes. So we can expand on that and give you a better understanding. There is actually a marginal impact on journey time of about 14 seconds if you extend the tunnel.

319. MR STRAKER QC: Thank you very much, sir.

320. CHAIR: Thank you. Mr Mould?

321. MR MOULD QC (DfT): I have no further questions. Thank you.

322. CHAIR: Okay. Thank you very much, Mr Smart. Is that it, Mr Mould?

323. MR MOULD QC (DfT): Yes. You have our position, Sir.

324. CHAIR: Mr Straker, do you want to make some final comments?

325. MR STRAKER QC: If I could, sir. Can I do it in this way? Can I draw your attention to a very helpful slide which was produced this morning. It's slides A1190(6) and A1190(7); if they could be put on the screen. First, page 6 shows the number of people and then page 7 shows where those people are to be found.

326. You and your colleagues, sir, have an unenviable task in relation to this particular matter because what you are being asked to do is to draw a comparison in circumstances where the material which advises us collectively over the qualities of what one sees there in the Chilterns AONB are all and always described in qualitative terms by reference to the words actually used, whereas on the other hand the chosen comparison by HS2 is one in financial terms: 'How much does it actually cost to put a railway on the ground?' or 'How much does it actually cost to dig a tunnel?' In those circumstances, the comparison that you are being asked to make is on uneven terms because it is language on one side against numbers on the other. It is there where one gets into the difficulty, which is why I have put up these slides and these numbers of people.

327. We know that the Chilterns AONB is important social capital. Call it what you will, but that is what it can be said to amount to: social capital. We know that it is part of the capital enjoyed by a vast number of people given its proximity to London and its proximity to other places. We know that those people of course are not charged when they come into the AONB, but they will see and enjoy the AONB as part of their social capital, as part of the living which they conduct and as part of the activities which Lewis Silkin described in introducing the Bill which you've seen.

328. MR HENDRICK: Can I ask a question?

329. MR STRAKER QC: Of course.

330. MR HENDRICK: People are enjoying the amenity of the area. They may be ramblers, but some of them may be motorists on the roads running through there or

indeed train travellers who are on the line that's currently there at the moment. I've travelled on high speed rail tracks in Japan and in China. Would it not be the case that, even travelling at those sorts of speeds, you can still appreciate the amenity of the landscape from a high speed rail track?

331. MR STRAKER QC: It's certainly true, sir, that those travelling on the high speed train for the 12 kilometres or so where it's above ground level would get a glimpse of the Chilterns AONB. It would be a glimpse because they're obviously travelling quite fast through. One doesn't want to diminish the enjoyment of the passengers of the train whose principal preoccupation, it may be supposed, will nonetheless be getting to Birmingham as quickly as possible, but on the other hand one has rather more people and rather a bigger consideration in terms of the AONB itself and those people who are coming to visit in the ordinary way – the present way – as opposed to sitting on the high speed train going through.

332. MR HENDRICK: Yes, but the numbers you gave are not necessarily people who are going to be walking. They are people who are maybe travelling through that area for the other reasons that you point out and not necessarily on foot.

333. MR STRAKER QC: That's undoubtedly true. There will be people who are going through the area in all sorts of ways, ranging from the cyclist through to the equestrian, through to the motorist, through to the person who's sitting on the present Chiltern railway. All of those people will be travelling through at the moment and gaining an advantage from the beauty which surrounds them in the Chilterns AONB. The difficult question that you and your colleagues have, sir, call it a privilege or a pleasure, is to consider for all of these hundreds of thousands of people how that can best be preserved given the principle that has been established of driving a train from London to Birmingham which is high speed. That privilege can best be preserved by putting it in a tunnel.

334. Sir, just to help you on the question you asked me about the people and enjoyment, I've just been passed a note which indicates that you would have something in the order of five and a half seconds on the viaducts and the rest would be in cuttings as you travel through High Speed Two as presently proposed.

335. MR HENDRICK: Just on the viaduct?

336. MR STRAKER QC: Yes, that's right.

337. MR HENDRICK: It's five seconds of pleasure you wouldn't otherwise have!

338. MR STRAKER QC: That's right. Some of the acutest pleasure in the world can be of short dimensions! I readily accept that proposition.

339. SIR PETER BOTTOMLEY: If you cannot see out from the cutting then you cannot be seen in the cutting.

340. MR STRAKER QC: The answer to that is that the cutting nonetheless can still be seen and noticed as an effect on the landscape. One has the point that Mr Hendrick makes very clearly. One can have in mind the passengers on the train, but one has this other, very wide picture that one has to think about and there one gets to the great difficulty which confronts the Committee: how do you value this social capital. Undoubtedly it has to be valued. It has to be valued somehow. Everybody agrees that. HS2 said 'Well, we've put in £1 billion over the line' and came up with something of a convoluted explanation as to how it valued this particular part, but even if it was giving it the forestry categorisation, the sort of figures that you then get to are very substantial indeed. What I am suggesting to you is that there must be a figure when one is doing that contrast. If there is a figure then you get so much more easily to the answer. The answer may be to provide it in the tunnel to enable all the social capital and the social advantages that exist within the Chilterns to be preserved because one can say it time and time again and one can look at the slides time and time again. This is very particular landscape. Of course, to take Sir Peter's point, one does not want in any shape or form to denigrate other parts of England through which the train will pass, or to denigrate any other parts of England at all, but the fact remains that Parliament has said that this is special and this must be treated specially. If it's going to have an impact then the answer, I would respectfully suggest, must be a tunnel. There is a whole raft of other matters which fall into line when one reaches that conclusion from the rather surprising point that the tunnel produces far, far less spoil, because you're not doing the big cuttings which otherwise have to take place when one is going through it at surface level, to matters whereby one is protecting against noise, environmental loss, visual damage and all those matters that Natural England identified and which I asked the witness about. So I respectfully urge that the Committee goes down that particular line.

It doesn't matter for the purpose of my case whether the end figure in terms of the assigned value to the social capital is a given sum or not, but just concentrate on the idea that this is social capital and it has to be taken into effect.

341. MR CLIFTON-BROWN: You've very helpfully put this map up for us which shows the M40 going straight through the Chilterns AONB. Presumably exactly the same arguments were advanced when the motorway went through – this loss of social capital – and it was deemed at the time that a tunnel wasn't warranted. The entire motorway could have been tunnelled. What's the difference between this HS2 railway and the motorway in terms of damage on the AONB?

342. MR STRAKER QC: Two answers. I doubt, sir, that the same arguments would have been put forward, partly because, as indicated by the witness in answer to me, it's over the last 15 years or so that there's been this development in thought and appreciation of social capital. Second, the fact is that the M40 as part of the national motorway network has an effect which serves the Chilterns as well as other parts of the country, so that one can go along the M40 and one can come off and go to Wycombe or go to other places and so forth either in or adjacent to the Chilterns, whereas with the HS2 railway all one has, I'm afraid, are the 5.5 seconds that have been identified.

343. MR HENDRICK: That's just on the cutting though.

344. MR STRAKER QC: On the viaduct, yes.

345. SIR PETER BOTTOMLEY: There is more than one.

346. MR STRAKER QC: I beg your pardon?

347. SIR PETER BOTTOMLEY: There is more than one.

348. MR STRAKER QC: More than one viaduct?

349. SIR PETER BOTTOMLEY: Isn't there?

350. MR STRAKER QC: Yes, yes.

351. SIR PETER BOTTOMLEY: We could get to 10 seconds if we tried hard enough!

352. MR STRAKER QC: You may be able to and you may have a particularly acute

sense of vision and so forth and perceptive powers, but you're not going to have long. Sir, the answer to your question I give as a twofold, double-barrelled answer, if I may. It would have been different for the M40. We have moved on since then and consider these matters in different ways. Sir, that was what I wanted to say, unless I'm reminded of anything.

353. CHAIR: Okay. Thank you very much, Mr Straker. There is one more item you're going to raise with us and I think you've got some slides.

354. MR STRAKER QC: Yes, sir.

355. CHAIR: Thirty minutes?

356. MR STRAKER QC: Sir, I suspect that it might take more than 30 minutes because there turned out to be somewhat more than was originally supposed to be the case – if I can find them.

357. CHAIR: Do you want two minutes, Mr Straker?

358. MR STRAKER QC: Sir, it might be useful just to clear the decks a bit.

359. CHAIR: Let's give you five minutes.

360. MR STRAKER QC: Thank you very much, sir.

361. CHAIR: Order, order.

Sitting suspended

On resuming—

362. CHAIR: Order, order. Mr Straker, please continue.

363. MR STRAKER QC: Sir, could I put up slide 1218(1) and, whilst that's being put up, say that I'm more than usually in your hands, sir, so far as this is concerned because this exercise, as that slide reveals, is to set out summaries of issues that may be raised by the councils after the recess. It is not intended to be an exposition of those cases, nor is it intended to be a restriction on what may subsequently come to be said and nor is it intended to be a restriction on what others might say, but it is merely to give you, sir, an

indication of what these matters are.

364. CHAIR: To assist the Committee?

365. MR STRAKER QC: That's right, sir. So that's why I say I am more than usually in your hands as to how quickly or how slowly you wish me to take these particular matters.

366. The next two slides make the sort of point that I've just been making. Slide 1218(3) draws attention to the fact that we've worked closely with various others who are there set out. Obviously that will continue and so that will have a bearing upon the timetabling for the exercise when you resume your deliberations after the recess. I just emphasise at slide 1218(4) the points about how we will still continue to seek agreement, or we hope that the Promoter will continue to seek agreement with us, and what will come by way of the autumn's evidence.

367. Can I then, sir, go to slide 1221(1) because what these next few slides seek to do is indicate the sorts of topics which have been raised by petitions so that you get a feel for the matters which are going to be canvassed by petitioners in the autumn. Slide 1221(2) says what would remain and slide 1221(3) reveals that a very large majority asked for the tunnel and a limited number didn't refer to the tunnel but asked for other matters.

368. The petition point themes are then set out in a number of slides, which would obviously embrace those people who wanted a tunnel in any event and those who just were content to raise these matters. You'll see there shown graphically out of the 905 petitions what the damage point being canvassed by the petitioner is and how particular themes were raised. Slide 1221(5) shows that approaching 70-odd per cent were concerned with noise and some 40-odd per cent, I think it is, concerned with soil dumping. Passing on to slide 1221(6), there are construction and petition point themes emerging there. I don't read those out. The next slide shows what the councils, Chiltern, Bucks and Aylesbury Vale District Council, will between them cover. You will see, sir, that there is a considerable number of items, starting with landscape and the AONB, including deficiencies of the ES and running over to local site-specific issues. I can take these more slowly if you would wish me to, but there are plainly a number of issues there. Sir, unless corrected, I am not going to simply read out every word which is contained within these slides.

369. Going on to slide 1221(8), there are going to be some themes expressed in terms of principle and dealt with on a route-wide basis by lead councils and other points will be reflected by way of local example by the Buckinghamshire councils. The balance of this is still being finalised – partly, sir, it’s ease of work on the part of the councils and partly, sir, it’s a recognition that it’s more sensible for you, it is hoped, to have someone taking a lead on one issue rather than many repeating it to you.

370. Slide 1221(9) draws attention to the fact that designation of the AONB is relevant to many of the themes. And I can pause at that stage to leave the Chilterns District Council there. I’ll return to matters which they particularly raise. But I’ve drawn attention now to the general themes in the petitions.

371. And go back to that which Buckinghamshire, in particular, will be concerned with. So, if I can take you to 1219(2)? Waste and sustainable placement, which has been spoken to on a number of occasions and given various labels. Sustainable placement being mentioned in 1219(3). And, sir, that provides a sensible queue to me to draw attention to the fact that the opportunity was taken, of the invitation for these slides, to put in evidence, as A1222(1), if that can be taken up? The document, the handout which was given on the site visit, sir, which you will recollect, which took place, it was thought to be useful, particularly perhaps, it may be thought ,for those new members of the committee, all of who are welcome, of course, to visit the Chilterns and these areas, in any event. But, one will see for example, if one goes on to 1223(24), that Hunts Green Farm, as a, then, proposal for a permanent spoil heap is discussed and described. Now, of course, it’s suggested for a temporary placement of spoil.

372. CHAIR: Can I just ask a question about that? At some point, Mr Mould, the soils going to have to be shifted. How long after? I mean, is that going to be soon or is it putting pressure on the road network, or will it be at a rather later date?

373. MR MOULD QC (DfT): Well, it’s going to be a facility that will be operating so as to hold back material and regulate it being distributed through the road head at Rocky Lane. So, clearly the temporary storage area will have to be sufficiently extensive to enable it to perform that role. I suspect that if you look at it at any given time during the duration of its use, that the extent of storage is likely to rise and fall, because obviously material will be coming into it at different rates, and material will be taken away at

different rates. But, what I am conscious of the need to do, in time, certainly, in good time for hearings, which will touch on these issues in more detail, is to be able to give a much clearer, a more detailed understanding of how that facility is likely to operate, so that we can, for example, give a sense of what the overall extent of the area required for temporary storage is going to be.

374. CHAIR: Alright. Okay. Mr. Straker, sorry to interrupt you.

375. MR STRAKER QC: Not at all, sir. Thank you very much. And I can mention also, if we go back to 1219-3, that that provided a prompt to go where I've just shown you in the handouts for the site visit. I mention, but don't ask to be turned up, that one can also go to 1224(12), to see similar references to the spoil dumping in the handout but I don't take those now, for the purpose of time. I go then, if I may, to 1219(4), the Calvert community mitigation plan, the Calvert area cumulative impact, a matter to be raised. Once again there are references in the handout to these pages 1224 and following. 1219(5) shows the areas with which on that particular matter is concerned and I don't need to dwell upon it. 1219(6) seeks a community plan assurance. 1219(7) seeks an East-West Rail station at Steeple Claydon. This is referable to the East-West Rail line of which you may have heard, which is a railway being funded, at least in part by local authorities to provide east-west links and to restore some connections which some time ago were removed from the railway network.

376. SIR PETER BOTTOMLEY: It stops in Cambridge.

377. MR STRAKER QC: It includes that.

378. SIR PETER BOTTOMLEY: The Zuleika Dobson line.

379. MR STRAKER QC: It's part of that, and takes into account Milton Keynes, as well, and places of that sort. Milton Keynes being declared to be a new town on the very day that the railway was closed in Milton Keynes, which was connected thinking by someone. 1219(7) is the Steeple Claydon Station and the passive provision for that is diagrammatically shown at 1219(8). And 1219(9) draws attention to the East-West Rail impacts and mentions in fact Milton Keynes and London (Marylebone), Aylesbury and Princes Risborough. And the committee may know that there are going to be some improvements. The London (Marylebone) one is going to be able to get to Oxford from

there.

380. CHAIR: So, the passive provision is that in the bill at the moment or is that something that?

381. MR MOULD QC (DfT): No, there isn't any passive provision made for a station at Steeple Claydon. No.

382. MR STRAKER QC: I can then move to the landscape. Buckinghamshire County Council, 1219-10. How that matter will be pursued before the committee. The assurance is noted as to what is sought and the assurance no doubt will be worked up. And 1219-11, Aylesbury linear park will be raised. And 1219-12, the community and environment fund and business and local economy fund. The committee has had, I think, some reference to this already. And that will be canvassed by the County Council or is predicted to be canvassed by the County Council.

383. 1219-13, takes me, just as a heading, through to transport petition issues overview and that then has 1219-14 route wide issues, transport assessment inadequacies, unsuitable construction routes and sensitive junctions. I'm not reading out particulars of the roads concerned. They're there on the screen. And can be seen. 1219-15, route wise issues, additional transport burdens and the widening of carriageways and impacts on cyclists and pedestrians, seeking provision of such footways and cycleways where deemed appropriate.

384. 1219 takes me from Buckinghamshire County Council into the Aylesbury Vale District specific issues. Impacts, 1219-16, onto inter-Aylesbury routes and the 4010 realignment and that is shown in 1219-17. Aylesbury Vale 2, at 1219-18, and here one is talking about particular roads there recorded, including Waddesdon and the relief road required to mitigate impacts on Waddesdon Village and the A41. And the committee will know that Waddesdon is a particularly attractive place. And Aylesbury Vale 3, 1219-19, Calvert, Steeple Claydon and Turweston.

385. Then still under the rubric of the County Council, but by reference to Chiltern District specific issues, 1219-20, Wilton Park relief road, the provision of haul roads with maximum use of the railway trace sought to mitigate the use of unsuitable rural lanes. 1219-21, offline solutions sought so as to prevent long term temporary closures

with long diversion routes, and examples are given; provisions of cycle ways; and sensitive junctions requiring improvements. 1219-22, public rights of way. They're enumerated and the number of concerns are broken down. 23, the next slide, towards discussion about such matters but a number of points of significance remaining and assurances being sought.

386. 24, 1219-24, takes us to ecology. Additional surveys being sought. Cumulative impacts being assessed, is suggested. 1219-25, connectivity of habitats is mentioned. Assurance 4 sought is on specific sites issues which are there referred to but not to read out by me. 1219-26, biodiversity, specific species impact and local authority costs. And that's to do with the burdens been placed upon local authorities in connection with certain assessment matters. Which takes me to 1219-27, water and flooding, with modelling sought and further information also sought.

387. We then come to Council assets, 1219-28. And these are County Council matters, so one sees certain assets which are impacted upon, schools and so forth. Buckinghamshire, of course, being education authority. And then one gets to 1219-29, the council's request of HS2 to protect public assets and service users, specific undertakings sought.

388. Cultural heritage is next, 1219-30, dealing with historical environmental records. 1219-31 takes us to archaeological investigations and a programme of archaeological works. 32, to community engagement and an archive of archaeological finds. 33, the effect of spoil dumping on archaeology. Visual impact, assurance 7, on the setting of history environmental assets. And assurance 8, the impact of ecological and landscape mitigation on archaeology.

389. That enables me to leave that which is under the heading of Buckinghamshire County Council, though some were specific to those two districts, and to take me to the Aylesbury Vale. And the first matter here, which is via 1220-2, is the Aylesbury to Princes Risborough Railway. And here there's a cross reference which can be mentioned, but doesn't need to be taken up, in the handout, 1222-11. And that seeks assurances about the closure of the line or reduction in passenger services. 1220-3 refers to the Stoke Mandeville maintenance loops. Once again, these are referred to in the handout for the site visit 1222-9, we don't need to go there, though I give the reference.

The assurance required is suitable mitigation scheme, consequential upon the maintenance loops. 1220-4, the Stoke Mandeville and Aylesbury by-pass extensions including linear park. This is a consequence of a redirection of traffic which will occur through the by-pass proposal and what is sought there, as is shown on the slide, is for the extension of relief road, and a road link. Details there are given in brief form. Shown on 1220-5, by way of aerial photograph with markings upon it.

390. Aylesbury Vale next, at 1220-6, support Buckinghamshire in connection with the Waddesdon relief road and at 1220-7 –

391. CHAIR: Can I ask a little bit about that? When we met the Speaker, we were in that local hall there, there was some discussion about this. Are you aware whether the County Council is promoting a by-pass at the moment?

392. MR STRAKER QC: I don't know the answer to that question, sir.

393. MR TETT: When you say by-pass, we are asking for a by-pass as part of this because of the HGV traffic movements through that village. We haven't current plans for a by-pass.

394. MR MOULD QC (DfT): My understanding is that there is a local, there's an aspiration amongst local developers to create a by-pass. The railway's position is that we don't do anything to inhibit the construction of a by-pass, but the traffic, our latest figures, in the light of the review that you've heard about touched on over the course of the past few days under the aegis of Additional Provision 2, is that the quantity of HGV construction vehicles going through that area is actually going to be reduced substantially.

395. CHAIR: Okay. There was an example of a by-pass being provided in Northants where, everybody is chipping in, if you see what I mean.

396. MR STRAKER QC: Yes.

397. CHAIR: To get an outcome. Clearly, somebody has to start the ball rolling.

398. MR STRAKER QC: Yes, Well, I hope that helps in answering your question, sir. And I'm grateful for the assistance provided sir. There's nothing, so to speak, on the

books of Aylesbury Vale at the moment. It's coming through this scheme. 1220-7, Quainton Station Road over bridges, once again with Buckinghamshire, and the consensus that the scheme is over-designed or engineered for the rural location. And then 1220-8, Calvert Bechstein's bats and this is support be given, if required, in connection with that matter and there's a cross reference which I can give, but not ask to be shown on screen, 1224-5. 1220-9, Calvert waste sidings, also referred to in the handout, 1224A, and this is some sidings opposite residential properties thought to have a detrimental effect upon the residents within. 1220-10, cumulative impacts in Calvert, and there the points are made in short form in the slide on display and it's also referenced in the handout, 1224-9, 12, 15, 13 and 14. 1220-11, Calvert cumulative impacts, takes us also back to the East-West Rail and the re-opening of the disused rail, Oxford-Bletchley, and the link to Aylesbury and it's sought that matters should be dealt with in an integrated manner. 1220-12, Calvert cumulative impacts community and mitigation plan. And 1220-13 continues that particular matter, seeking amongst other things that the lighting impacts of the railway line should be addressed. And there's a plan in connection with those matters just discussed at 1220-14. 1220-15, recreation ground at Turweston and support given to the parish council, here about the loss of the recreation ground.

399. And, next slide, number 16, ecology, route-wise, supporting the case presented by Bucks and others. And 1220-17, noise, route wide. And, sir, I mention here, if I may, that the expectation is that this will be within the generic case the noise consortium is presenting with Camden on the construction noise impacts. 18, 1220-18, landscape, route wide.

400. And 1220-19, traffic, route wide, with Aylesbury supporting the case presented by Buckinghamshire. And attention will be drawn, 1220-20, to some listed buildings being demolished along the route. Photograph of Glebe House, Hartwell. And the next slide shows, 1220-21, Wendover Dean, the farm, an example of adverse effects along the line. And we get then to 22, not getting the tunnel, significant detrimental effects, a number of topics need to be considered. 1220-23, Wendover Green tunnel, so this takes us to the character of that, the screening bunds proposed, the land take, to facilitate the above mitigation is insufficient. And there's a point just to make in passing here, Because of course, there's the mitigation which is capable of being provided by HS2 is

within the line, which is available to them under the terms of the bill. The next slide, 24, Wendover aquifer impact, concerned about the effect of construction activities. And 1220-25, alternative site, please, for the Wendover Cricket Club. 1220-26, construction impacts on communities. 1220-27, provision for construction workers accommodation, particularly so it doesn't overwhelm smaller communities and there's a cross reference here to the handout 1222(2). Design, 120220-28, standard and quality of design, the undertaking sought, also cross reference to the handout 1222(2) and 1222(6). And then, finally, here, heritage issues, noise insulation and the impact on settings of listed buildings, 1220-29.

401. And that then means that I go back to the Chiltern slides and pick them up again, please, at 1221-10. Mitigation as far as communities and businesses are concerned and that touches upon the community environment fund. 1221-11, community and businesses protection during construction, referent to highly impacted communities, impact on businesses of construction, development of business relocation strategy and funding for an economic development officer to promote economic development in the area for seven years. And then the community and businesses, 1221-12, with North Warwick being the lead in connection with this and this seeks funding for compensation for the loss of revenue because of loss of business rates during the period of HS2's construction in particular. That's 1221-12. 1221-13, air quality, a route wide theme being led by the London Borough of Camden. 14 continues with air quality and draws attention to the want of air quality monitoring. And 1221-15, seeks comprehensive monitoring in relation to nitrogen dioxide and particulates before work commences. 1221-16 refers to the lead of Camden on cultural heritage. And 1221-17 draws attention to cultural heritage and raising of local concern concerning certain buildings, some of which are referred to in the handout which was given to members at the site visit, 1223-3, 22 and 22.

402. And then ecology, 1221-18, support given to Buckinghamshire there. And landscape, townscape, and visual assessment, 1221-19, once again a matter being raised. 1221-20 continues the point about landscape, townscape and visual assessment; seeking, amongst other things, sensitive integration into the historic and natural landscape. 1221-21 continues under that heading, refers to sustainable placement dumping and one can cross refer to the handout again in connection with the matter.

1223-23, 24 and 12. And traffic and transport is next, 1221-22. Also referred in the handout, 1223-14 and 22. Artificial lighting follows in the next slide, 23. Concern about the use of artificial lighting. Waste and material resources, 24. Concern about what is described as the re-sculpting of the landscape. And then 25, water resources and flood risk assessment, which is followed by some specific sites where there are issues. 26, Amersham vent shaft, also referred to in the handout, 1223-4. A number of further sites, 27, which then goes to a point, at 28, about the vertical limits and the limits of deviation there provided for in the bill. 29, Council resources. 30, the summary overview of the generic route wide sound, this is the noise consortium, and that is revealed, 31, as LANC, seeking to deal with and having 13 supporting members, generic route wider issues on sound noise and vibration. The lead authority on sound noise and vibration being Chiltern District Council, and construction, London Borough of Camden. And then, slide 32 just records a certain amount of progress to date. 33, records key discussion categories: National noise policy; Observed adverse effect levels; and uncertainty to and risk to stakeholders. There then follows a series of slides touching upon the discussion categories, 34, where it's suggested there is an inconsistency between the general principles document of the environmental minimal requirements and its interpretation in the information papers. 35, observed effect levels, discussion category, and how that is dealt with and the HS2 justification for some of its adverse effects, how that is considered. Discussion category 3, risk and uncertainty to stakeholders post Royal Assent, that's slide 36. And that follows over, into slide 37, with the next steps for noise being identified at 38, the continuing engagement and so forth. And the slides which thereafter follow on the 122 –

403. SIR PETER BOTTOMLEY: You're spelling out what we're going to be hearing. I hope I'll be allowed to think aloud? But, if it's possible for the lead authorities' knowledgeable people to speak with Mr Thornely Taylor during the gap between hearings, it will be much more helpful to have, if possible, an agreed list of what is not agreed, rather than having to go through and detect as we go through. It would be very helpful if it's possible in areas where there might be differences of view, an overlap of view, to know, together, what is that they haven't agreed.

404. MR STRAKER QC: Well, sir, that is certainly the intention on the part of the authorities. The way to a particular destination is paved with good intentions, but, I

hope that those good intentions can be satisfied.

405. MR MOULD QC (DfT): Well, let me say this. It is also the intention of the promoters. And indeed I think I can give some reassurance on that, because the process that you have just commended has been in place now for, certainly since beginning of this year. And regular meetings have taken place and they will continue to take place with that objective in mind.

406. SIR PETER BOTTOMLEY: Sorry.

407. MR STRAKER QC: Not at all. The balance of the slides that were prepared for today, A1222-1 and following, I'm not proposing to go through. Those were the handouts which the committee were given, those members of the committee who were able to attend. Obviously –

408. CHAIR: The visit, you mean?

409. MR STRAKER QC: The visit, yes. The site visit. Obviously, if there's any opportunity for those committee members who didn't attend and who would wish to attend, then we can make that available, whether it's tomorrow or any other occasion. If the committee's not sitting tomorrow, I'm sure that people would be happy to entertain committee members tomorrow. And, I don't mean lavishly entertain, by the way. Yes. So, that is what I was going to do, sir, in connection with those slides. Unless you want me to go through those site visit handouts, which I wasn't proposing to do, but, I hope to give, and I trust that I have given, at least to some extent, a foreshadowing of the cases to come, an indication of what it is, without either trespassing too much on your time today. Alternatively, without upsetting subsequent hearings in the sense of having recited now material which you're going to hear again, expressed slightly differently, on a future occasion. I do emphasise that we don't see ourselves, so to speak, as restricted by what has just been said. Though, obviously, that provides the back cloth as to what will come.

410. CHAIR: Can I thank you for going through a lot of material very quickly. I think it's helpful the committee, and indeed helpful to the several hundred petitioners, if they know what their local authorities, many of the issues, in which their local authorities are going to raise in detail in the negotiation. And therefore I think it's been a useful time

to walk through some of the issues and concerns which the local authorities have, and I think the fact that the local authorities are working together, I think is a good thing. The handouts we got on our visits were very well done by the staff at Buckingham County Council and from the other local authorities. So, thank you very much Mr. Straker.

411. MR STRAKER QC: Thank you, sir.

412. CHAIR: You have no final comments, Mr Mould?

413. MR MOULD QC (DfT): No. It was very helpful to us too, of course, because it gives an indication of where matters lie, which we can use as a continuing prompt as well.

414. SIR PETER BOTTOMLEY: It can be relied on, the promoters, if there's a point they know is going to be coming up, if they can satisfy the petitioners, the petitioners will be told in advance of coming to see us.

415. MR MOULD QC (DfT): Yes.

416. CHAIR: Okay. Thank you very much.

417. MR STRAKER QC: Thank you, sir.

418. CHAIR: We end session now. I'd be grateful if you could withdraw, so we can clear our thoughts. Thank you. Order, order.