



Second Addendum Report to the Secretary of State for Transport and the Secretary of State for Communities and Local Government

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**an Inspector appointed by the Secretary of State for Transport and the Secretary of State for
Communities and Local Government**

Date: 31 August 2012

TRANSPORT AND WORKS ACT 1992

TOWN AND COUNTRY PLANNING ACT 1990

ACQUISITION OF LAND ACT 1981

**THE CHILTERN RAILWAYS (BICESTER TO OXFORD IMPROVEMENTS)
ORDER 201[X]**

**REQUEST FOR A DIRECTION UNDER SECTION 90(2A) OF THE TOWN AND
COUNTRY PLANNING ACT 1990**

**APPLICATION FOR AN EXCHANGE LAND CERTIFICATE UNDER SECTIONS 19
AND 28 OF THE ACQUISITION OF LAND ACT 1981**

Dates of Inquiry: 2 November 2010 to 28 January 2011

29 May 2012 to 15 June 2012

Ref: TWA/10/APP/01

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CASE DETAILS

1 Purpose

- The Order would enable The Chiltern Railway Company Limited to carry out works to the railway between Oxford and Bicester, and construct a new length of railway to connect the Oxford-Bicester line to the Bicester-London line so as to enable through trains to run from Oxford station to London (Marylebone) station.

2 The Chiltern Railways (Bicester to Oxford Improvements) Order 201[X]

- This Order is drafted under section 1 of the Transport and Works Act. The application for the Order was made to the Secretary of State for Transport on 6 January 2010. If made it would authorise The Chiltern Railway Company Limited to construct and operate works and to compulsorily acquire land and rights in land for the purpose stated at 1 above.

3 Request For Deemed Planning Permission

- Application was made on 6 January 2010 for a direction granting deemed planning permission subject to conditions for the Works that are the subject of the Order, and for other measures associated with those Works.

4 Application for an Open Space Certificate

- Application was made to the National Unit for Land Acquisition on 29 January 2010 for the Secretary of State for Communities and Local Government to issue a Certificate under section 19 of, or paragraph 6 of Schedule 3 to, the Acquisition of Land Act 1981.

1 PREAMBLE

- 1.1 On 2 November 2010 I opened concurrent local public inquiries ("the Inquiry") at the Conference Centre Oxford, Park End Street, Oxford OX1 1JD to hear representations and objections regarding an application by The Chiltern Railway Company Limited ("Chiltern") to the Secretary of State for Transport to make an Order and grant deemed planning permission, and an application by Chiltern to the Secretary of State for Communities and Local Government for an Open Space Certificate, all as described in the Case Details. The Inquiry sat on 31 days and closed on 28 January 2011.
- 1.2 On 15 July 2011 my report (document X/20) was submitted to the

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- Secretaries of State. An addendum report dated 6 October 2011 (document X/21) sets out clarification of two matters requested by the Department for Transport.
- 1.3 In respect of the Order, and with regard to the guidance on the making of compulsory purchase orders in ODPM Circular 06/2004 paragraphs 16 to 23, I found in paragraph 9.17.18 of document X/20 that:
- “The likely lack of a Licence in respect of bats, issued under The Conservation Of Species And Habitats Regulations 2010, is an impediment to the implementation of the Scheme, since it would render illegal the carrying out of works in Wolvercot Tunnel. To confer on Chiltern compulsory purchase powers while such an impediment is likely would be contrary to the advice of Circular 06/2004.”
- 1.4 By virtue of that finding, I concluded in paragraph 9.18.1 of document X/20 that The Chiltern Railways (Bicester to Oxford Improvements) Order 201[X] should not be made.
- 1.5 Paragraph 9.17.11 of document X/20 more fully describes the impediment I found in respect of licences under the Habitats Regulations 2010. Paragraph 9.17.10 of the document refers to the proposed land acquisition associated with Phase 2B of the Scheme, for which funding is not confirmed; and paragraph 9.17.12 sets out the view that the impediment associated with the lack of funding for Phase 2B would fall away if the land and interests identified in paragraph 9.17.5c were excluded from the Order, a change which is recommended in paragraph 9.18.3 of document X/20.
- 1.6 The Department for Transport’s letter dated 15 November 2011 (document X/22) summarises the Secretary of State’s views. If Chiltern were able to overcome the impediment to implementation of the Scheme that I had identified, the Secretary of State would be minded to make the Order and give the planning direction. Chiltern was invited to inform the Secretary of State of progress since the close of the Inquiry in agreeing with Natural England mitigation measures for species protected under the Habitats Regulations. A letter of the same date issued by the Department for Communities and Local Government (document X/23) sets out the views of the Secretary of State for Communities and Local Government; namely, that if in due course the Order was made he would be minded to give a certificate under the Acquisition of Land Act 1981 in respect only of open space land at Tubbs Lane, since no other exchange land certificate would be necessary; and the Order would not be subject to Special Parliamentary Procedure.
- 1.7 Document X/24 is the Department for Transport’s letter dated 24 January 2012. In the light of new evidence presented by Chiltern and Natural England (described in the letter) in response to the document X/22 letter, the Secretary of State was minded to make the Order and to give the planning direction. Attention was drawn to Rule 20(5) of the Transport and Works (Inquiries Procedure) Rules 2004. The Annex to this letter sets out planning conditions the Secretary of State proposed to attach to the deemed planning permission, if given.
- 1.8 Following representations made in accordance with Rule 20(5), the Department for Transport’s letter dated 6 March 2012 (document X/25)
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announces the Secretary of State's decision to re-open the inquiry to consider the matters set out in paragraph 7 of that letter. The Secretary of State explicitly did not ask me to re-examine evidence previously submitted to the Inquiry, and would consider representations or parts of representations on matters other than those set out in paragraph 7 (of the 6 March 2012 letter) alongside all other evidence which is before her; and so I am not required to consider representations other than those which relate to matters set out in paragraph 7 of that letter. The Department for Transport's letter dated 3 April 2012 (document X/28) confirms the point with particular but not exclusive reference to the adoption of the Oxford Core Strategy in March 2011 and the publication of the National Planning Policy Framework on 27 March 2012.

- 1.9 I held a non-statutory Pre Resumption Meeting on 5 April 2012 at The Saïd Business School, Park End Street, Oxford, and the note of the meeting is at Document X/29. Although I was prepared to make further visits to the site if necessary, nothing at the Meeting, at the Inquiry or in written representations suggested to me that such a visit was necessary and so I made none.
- 1.10 I re-opened the Inquiry at the Kassam Stadium, Grenoble Road, Oxford OX4 4XP at 10:00 on Tuesday 29 May 2012. The re-opened Inquiry sat for a further 8 days in total and I closed the Inquiry on 15 June 2012.

Statutory Formalities

- 1.11 Chiltern Rail confirmed that it had complied with all necessary statutory formalities. Document CRCL/RI/18 provides details.

Written Representations

- 1.12 In addition to submissions by those who appeared at the Inquiry, there were 271 written representations before the Inquiry at its close. They include 35 statements of support, 225 objections and 11 other representations.

Scope of this Report

- 1.13 This report is concerned with representations and evidence given to the re-opened Inquiry that relates to matters set out in paragraph 7 of the 6 March 2012 letter. Where representations were made on other matters they are broadly identified but I neither report such representations nor make recommendations in respect of them.
- 1.14 This report is an addendum to my report dated 15 July 2011 (document X/20). It adds to that report a report of procedural matters raised at the re-opened Inquiry, the gist of the relevant evidence presented at the re-opened Inquiry and my conclusions in respect of the matters identified to me on behalf of the Secretary of State. Lists of inquiry appearances and documents submitted at the re-opened Inquiry are attached. Proofs of evidence and other statements by the parties are identified; these may have been added to or otherwise extended at the Inquiry, either during examination in chief or cross examination.

2 PROCEDURAL MATTERS

2.1 Costs Application

- 2.1.1 A costs application was made at the Inquiry on behalf of Mr & Mrs Offord and Mr & Mrs Bradshaw (objector 238) against Chiltern Rail. The application is the subject of a separate report.

2.2 Planning Policy

National Planning Policy Framework and the Oxford Core Strategy

- 2.2.1 The Framework was published on 27 March 2012 and the Oxford Core Strategy was adopted in March 2011. Parties' attention was drawn to these events, and to the Department for Transport's letter dated 3 April 2012 (document X/28), at the Pre-Resumption Meeting and in the note of that meeting (document X/29). I report representations that refer to the Framework insofar as the reference made is relevant to purposes for which the Inquiry was re-opened.

2.3 Inquiry Venue

- 2.3.1 Paragraph 42 of the note of the Pre-Resumption Meeting (Document X/29) refers to the location of the venue for the re-opened Inquiry. It was on the southern edge of Oxford, whereas most objectors who wished to appear at the re-opened Inquiry live in north Oxford. The venue used for the 2010/2011 sessions of the Inquiry, in central Oxford, was no longer available. Due to bus timetable differences, the journey time between north Oxford and the re-opened venue by public transport could be substantially reduced by delaying the daily resumption of the Inquiry beyond the usual 10:00 a.m. and so I varied the resumption time so as to optimise the travelling time for those parties who travelled to the venue by public transport. No further representation was made regarding the different venue.

3 THE CASE FOR CHILTERN RAILWAYS

The material points were:

- 3.1 **Whether the mitigation measures proposed by Chiltern since January 2011 and agreed by Natural England to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme in this regard.**

Introduction

- 3.1.1 The impediment is the want of a European Protected Species (EPS) Licence in respect of bats.
- 3.1.2 A licence is needed by anyone who wishes to carry out an activity prohibited under wildlife legislation which has the potential to disturb or damage the habitat of certain protected species. In Britain, all bat species and their roosts are legally protected. EPS Licences are issued by Natural England in accordance with their powers under the Habitats Regulations. Chiltern Railways has submitted licence applications for bats, and for Great Crested Newts. The lack of Great Crested Newt

licences has not been cited as an impediment to the Scheme and is not a matter before the re-opened Inquiry.

Developing The Bat Licence Application

- 3.1.3 The bat licence application was first submitted by Chiltern in April 2011. Natural England replied in May 2011, setting out a number of issues to be resolved to provide satisfaction that the tests under the Habitat Regulations could be met. Chiltern arranged for a lighting trial and a study of internal air pressure to be undertaken in Wolvercot Tunnel during August and September 2011.
- 3.1.4 This information formed part of a re-submission of the bat licence application in October 2011. Natural England replied in November, and further discussions took place about the nature and scope of necessary surveys and monitoring. In the light of those discussions, Natural England confirmed to the Secretary of State by letter dated 9 December 2011 that "in principle there is a good prospect that the licence will be granted in due course".
- 3.1.5 Chiltern's final licence resubmission was made in January 2012 (documents CRCL/RI/1 to CRCL/RI/3). These provide for a comprehensive programme of pre- and post-construction surveys which will continue until December 2017. Having considered the January 2012 resubmission, Natural England wrote on 31 January 2012 that "on the basis of the species information and proposals provided, Natural England is satisfied that no outstanding issues remain which would prevent the licence being granted in respect of this application" (document Obj246/7).
- 3.1.6 The bat licence, when issued, will incorporate the application form (CRCL/RI/1), the Reasoned Statement in support of the application (CRCL/RI/2) and the Annexes to the Reasoned Statement (CRCL/RI/3). The Reasoned Statement Annexes include a method statement in respect of the proposed works and their potential impacts, and a method statement setting out the proposed mitigation and monitoring programme. Other Annexes include baseline bat survey results for 2010 and 2011, the Wolvercot Tunnel Lighting Trials Report 2011 and the Wolvercot Tunnel Internal Pressure Environment Study 2011.
- 3.1.7 The mitigation approach taken is precautionary and robust. It will ensure that the favourable conservation status of the relevant bat species is maintained, in accordance with Regulation 53(9)(b) of the Habitats Regulations. Natural England has well-established powers to enforce the provisions of the EPS Licence, if necessary through the Courts. Network Rail has made the necessary commitments to maintaining and operating the deterrent lighting system in Wolvercot Tunnel for as long as it remains necessary.

Surveys And Research To Support The Licence Application

- 3.1.8 Various surveys were undertaken. At Wolvercot Tunnel there was a winter hibernation survey in February 2011, and surveys associated with a lighting trial in the period August to October. Air pressure levels due to trains passing through the South Harrow Tunnel at speeds of up to some 100 mph were also monitored, and used to predict the pressure levels

that would occur for trains passing at 70 mph. The results were compared with pressure readings from current train movements at Wolvercot Tunnel.

- 3.1.9 The hibernation surveys confirmed previous findings that the tunnel is used in winter by small numbers of bats, with two Natterer's and one Daubenton's bat found.
- 3.1.10 A full-scale lighting trial has been undertaken to support the use of lighting in the tunnel as a mitigation measure to protect bats from moving trains. (The proposed deterrent lighting system is described on pages 321 to 323 of document CRCL/RI/3, and in document CRCL/RI/22.) The lighting system trial was successful, with a large proportion of the bats of all species (60%) being cleared from the tunnel, or into night roost sites, within one minute of the lights being switched on (that is, before the train would arrive). Bats returned to the tunnel within seconds once the lights were switched off, and bats continued to roost in the tunnel during the day throughout the trial.
- 3.1.11 Surveys found that the pressure changes from the existing trains passing through Wolvercot Tunnel at 30 mph were 0.1-0.2 kilopascals (kPa) for passenger trains, and 0.2-0.4 kPa for freight trains. The pressure range of 0.1-0.4 kPa equates to gusts of wind between approximately 30 and 57 mph. By comparison with results from the South Harrow Tunnel, a passenger train travelling at 70 mph through the Wolvercot Tunnel was estimated to cause a pressure change of around 0.8 kPa (equivalent to a gust of wind of approximately 81 mph). This figure would increase to 1.5 kPa (equivalent wind speed of approximately 110 mph) if two trains pass in the tunnel.
- 3.1.12 The only reported evidence about the effects of air pressure changes on bats is of barotrauma associated with operating wind turbines. Although the pressure level which causes this effect in bats is unknown, the levels created by wind turbine blades are typically 5 to 10 kPa. Pressures in the tunnel caused by passing trains will therefore be several orders of magnitude less than those resulting from the movement of wind turbine blades. These findings support the view that trains using Wolvercot Tunnel at the speeds proposed will not have significant effects on bats roosting in the tunnel.
- 3.1.13 The mitigation measures which will be implemented by Chiltern to protect bats include:
- Protecting existing roosts;
 - Creating new bat roosting crevices in the tunnel;
 - Installing and operating the lighting system (CRCL/INQ/81) following its successful trials;
 - Bat boxes, which have already been put in trees along the railway cutting at either end of the tunnel;
 - A monitoring programme until December 2017 (described in the licence application annex CRCL/RI/3), to include roost site counts, bat box inspections, emergence surveys, tagging bats and activity recording using static bat detectors and walked transects, casualty surveys and hibernation surveys. Baseline bat casualty surveys will

be carried out in 2012 and early 2013. Annual reports would be made to Natural England.

3.1.14 Document CRCL/RI/15 is a statement of common ground between Chiltern and Natural England in relation to the bat licence. Among other things, it sets out matters that underlay Natural England's earlier position and the subsequent considerations that have contributed to its current position.

3.1.15 In order to ensure that the lighting system is installed, operated and maintained to avoid harm to bats, an additional planning condition is proposed as set out as Condition 34 in document CRCL/RI/26.

The Licence Application

3.1.16 The completed bat licence application form is document CRCL/RI/1. CRCL/RI/2 is the Reasoned Statement in support of the application. The Reasoned Statement refers to various other documents, and those are included in CRCL/RI/3.

3.1.17 The following activities at Wolvercot Tunnel are to be licensed:

i) The disturbance of bats: Bats would be excluded from roost cavities by tubes, 200 mm long and 32 mm diameter, to be inserted into roost cavities and left for 7 days.

ii) The disturbance and capture of bats, for radio tracking.

3.1.18 Method Statement 1 is among the supporting documents that would form part of the licence (CRCL/RI/3, page 167). The proposed works on site to be covered by the licence are:

- Disturbance to roosting bats from ground level works.
- Temporary exclusion of bats from all potential and confirmed roosting crevices/holes in the tunnel.
- Installation of five new crevices into the upper third of the tunnel arch barrel during the tunnel works.
- Tunnel works, to involve phase 1 and 2A of the Order scheme. They would include lowering the tunnel floor and relaying a single track along the eastern side of the tunnel, and the installation of the lighting system. Arrangements for the lighting system are set out in Method Statement 2 (page 250 of CRCL/RI/3). Document CRCL/RI/22, not part of the licence application, also provides details.
- Capture of bats: two-week sessions of trapping, tagging and manual radio tracking would be undertaken at intervals during 2012, 2013 and 2014 to determine main flight routes, roosts and key foraging areas.

3.1.19 Method Statement 2 (CRCL/RI/3, page 240) sets out "Delivery Information" among which are monitoring and mitigation, activities to be undertaken by the Licensed Bat Ecologist, works to be undertaken by Chiltern, and post-development site safeguarding. The application form (CRCL/RI/1) indicates at item C4 the total numbers of bats of each species that would be affected by the scheme.

- 3.1.20 The impact on roosting bats after completion of the works would be negligible, and would ultimately be positive as the roosting opportunities in the tunnel would be increased. Overall, the existing favourable conservation status of the bats concerned would not be affected by the works.

Conclusion: Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 3.1.21 Chiltern shares common ground with Natural England that, in relation to bats, there is no impediment to the implementation of the Scheme.
- 3.2 **Whether Condition 19 (operational noise and vibration monitoring and mitigation), in the form proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the operation of the scheme would have an acceptable effect on local residents, businesses and the environment, by virtue of noise and vibration.**
- 3.2.1 Condition 19 ensures, in respect of noise and vibration, more comprehensive mitigation than occurs elsewhere on the existing rail network and would provide mitigation which is as good as, or better than, that provided for other recently approved or built railway and highway schemes.
- 3.2.2 Several objectors have raised concerns that Oxford City Council has neither the will nor the means to enforce Condition 19 properly. But neither of the two relevant local planning authorities ("LPAs"), Cherwell District Council and Oxford City Council, has raised any concern about either the form of the condition or its enforcement. Both have a duty to discharge and enforce the planning conditions. Section 187A of the Town and Country Planning Act 1990 provides for enforcement of a planning condition by a breach of condition notice, which can be used as well as an enforcement notice under the powers of the Act following the procedures in Annex 4 of Circular 10/97. It is entirely appropriate and in accordance with the Government's commitment to localism that these conditions would fall to be enforced by the local planning authority, rather than by the Secretary of State. Residents have direct means of communication with their local authority, through Councillors or otherwise, and it is in the interests of the authority and the residents that development is sustainable and the local environment protected.
- 3.2.3 Document CRCL/RI/23 summarises the requirements and responsibilities associated with Condition 19. The burden of the responsibility for development of the noise and vibration "refined assessment" scope, undertaking the assessment, developing mitigation proposals, report (including arranging independent review) and monitoring effectiveness lies with Chiltern. The LPAs' role is limited to approval of key stages of the process and would ensure a robust and effective process of noise and vibration mitigation.
- 3.2.4 Noise levels are quantified on the decibel (dB) scale, which is logarithmic rather than linear. The characteristics of the human ear are such that an increment of 1 dB is a very small change in perceived noise, and changes

in environmental noise levels of less than 2 to 3 dB are not noticeable to most people.

Noise and Vibration Mitigation Policy

- 3.2.5 Document CD/1.29/2 is the version of the Noise and Vibration Mitigation Policy that was submitted to the Inquiry on 27 January 2011. It includes various "tracked changes" which identify differences between CD/1.29/2 and previous versions. Document CD/1.29/2.1 was submitted to the re-opened Inquiry. It is the same as CD/1.29/2 except that the "tracked changes" are consolidated into the text and the paragraph numbers have been updated. CD/1.29/2.1 supersedes all previous versions of the Policy.
- 3.2.6 The Noise and Vibration Mitigation Policy contains standards which the mitigation has to achieve. The Noise Impact Threshold Levels (free-field noise levels of 55 dB by day or 45 dB at night) are consistent with national planning guidance in PPG24 and are based on international guidance below which noise impacts are never significant. They are consistent with other rail schemes including recently approved schemes that have been examined at public inquiry. The UK National Noise Incidence Study 2000/2001 (CRCL/P/9/R/B, Appendix MF5) found that 55% \pm 3% of the population of England and Wales live in dwellings exposed to day-time noise levels above the daytime noise standard, and 68% \pm 3% of the population live in dwellings exposed to night-time noise levels above the night-time standard.
- 3.2.7 The Noise and Vibration Mitigation Policy also defines a significant noise impact as being at or above 3 dB which defines the point at which mitigation will be considered.
- 3.2.8 The evidence has been reviewed in response to the question raised by the Secretary of State. Application of the Noise and Vibration Mitigation Policy together with Condition 19 would provide more than sufficient mitigation to control operational noise and vibration to better than statutory limits. Where practicable, noise impacts will be mitigated so that they do not result in significant noise impacts (3 dB or greater), which will mean that noise levels would remain similar to existing levels, or to stringent Noise Impact Thresholds. Where it is not practicable to provide mitigation of railway noise emission and noise barriers to ensure that noise levels are acceptable, noise insulation "packages", where provided, will create acceptable internal levels, better than statutory requirements.

Proposed Modifications To Condition 19

- 3.2.9 Chiltern proposes minor modification of Condition 19 beyond the changes that led to Condition 19 as drafted in the Annex to the Department for Transport's 24 January 2012 letter. The proposed changes are as follows (references to line numbers relate to the condition as set out in Appendix IMG21, document CRCL/P/12/R/B):
- 19.1 Line 3: Change document reference to CD/1.29/2.1 to ensure that the reference is to the consolidated version of the Noise and Vibration Mitigation Policy.
- 19.3 Line 15: Refer to a native female speaker; and

- Line 17: Insert after "metres per second." a new sentence, "A correction factor of -5dB shall be used to convert the standard for male voices to female voices." These changes take account of the different vocal power of female riding instructors, and it was confirmed in examination that the 5dB factor should be applied by subtraction.
- 19.4 Line 5: Change "or 55dB" to "and 55dB" so that both standards would apply, in accordance with Building Bulletin 93.
- 19.5 Line 2: Delete "most", in order to provide greater clarity.
- 19.7 Lines 6 and 7: Delete "(modified as necessary in the light of subsequent forecasts which led to the approval of East West Rail for construction)". This adds necessary precision to the condition so that it clearly refers to the assumed train frequencies for Phase 2B set out in the Noise and Vibration Mitigation Policy. The change is also more advantageous for residents in that if the predicted or actual number of trains falls below the frequencies assumed in the Environmental Statement and the Noise and Vibration Mitigation Policy, then residents will remain eligible for noise mitigation.
- 19.8 Line 2: Change "installed." to "installed during the Phase 2B works." To clarify the condition.
- 19.11 Line 2: Change "By the times" to "By the times that". To clarify the condition.
- 19.14 Change the condition to read "Development shall be undertaken in accordance with the approved schemes and this condition." To make clear that the terms of this condition are central to the delivery of effective noise mitigation.

Overall Reply To The Secretary Of State's Question

- 3.2.10 The standards set out in the Noise and Vibration Mitigation Policy, enforced through Condition 19 as amended, would lead to an acceptable effect on residents, businesses and the environment by virtue of noise and vibration. They would deliver a comprehensive package of mitigation which has clearly stated and appropriate environmental standards.

- 3.3 **Whether Condition 31 (measures for the protection of the lowland hay meadow habitat at the Oxford Meadows Special Area of Conservation), in the form now proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the integrity of the Oxford Meadows SAC, having regard to the conservation objectives of the site, by reason of air pollution.**

Need For Condition 31

- 3.3.1 Chiltern did not consider a condition in this form to be necessary and so did not propose it during the earlier sessions of the Inquiry. The Inspector reached a different conclusion. Chiltern was concerned that the Inspector's assessment of the likely emissions and nitrogen

deposition rates adjacent to the A34 was unnecessarily precautionary, based as it was on the transposition of the predicted traffic data from the Water Eaton Car Park assessment.

- 3.3.2 A new traffic assessment has been carried out, to establish the effects the scheme would be likely to have on the daily traffic flows (annual average daily traffic, AADT) on the A34 and the A40 near the Oxford Meadows SAC. The finding is that the A34 would see a decrease in AADT, and the AADT on the A40 would be slightly increased.
- 3.3.3 The air quality assessment has been re-worked to incorporate the new traffic findings, with the result that emissions arising indirectly or directly from the scheme are expected to have no identifiable effect on the lowland hay meadow for which the Wolvercote Meadows SSSI and Pixey and Yarnton Meads SSSI elements of the SAC are designated in accordance with the Habitats Directive. There would be no significant impact on the integrity of the SAC. Cassington Meadows SSSI could, entirely safely, be removed from the Condition, since it is over 1.5 km west of the A34 and will not be materially affected by any rail or rail related traffic emissions (document X/24, enclosure G).
- 3.3.4 The evidence is now that the likelihood that the scheme would harm the designated habitat is extremely low. The scientific evidence is robust and Condition 31 is not likely to be necessary. Nevertheless, Chiltern has considered the eventuality in which such a condition is found to be necessary.

A Suitable Form of Condition 31

- 3.3.5 Chiltern and Natural England have discussed Condition 31, with a view to revising it to a form that both bodies could commend as properly fulfilling the matter set out at 3.3 of this report while meeting the tests for planning conditions set out in Circular 11/95. The result is set out in paragraph 5.8 of document CRCL/RI/16, a statement of common ground between Chiltern and Natural England. It was explained at the Inquiry that the version of Condition 31 in CRCL/RI/16 supersedes that in Appendix IMG21 of document CRCL/P/12/R/B.
- 3.3.6 The proposed amendments to Condition 31 are necessary because they:
- Provide a trigger for the implementation of the condition;
 - Set out requirements for a Scheme of Assessment; and,
 - Set out clear stages that need to be followed.
- 3.3.7 If the Secretary of State concludes that such a condition is necessary, a condition as suggested would ensure that the Scheme in operation would not be likely to have a significant effect on the Oxford Meadows SAC, by reason of air pollution.
- 3.3.8 Document CRC/RI/31 summarises the powers of Natural England under the Wildlife and Countryside Act to require the owners and occupiers of land designated as Sites of Special Scientific Interest (SSSIs) to implement changes in land management that might be required for the monitoring and mitigation measures associated with draft planning conditions 31 and 32. Any monitoring and mitigation measures relevant to the SSSI lowland hay meadow designations that are required

pursuant to the two planning conditions will be implemented even if Chiltern is unable to agree such arrangements with the owners or occupiers.

- 3.3.9 The location of the SAC and the administrative boundary of Oxford City are shown on Figure 1 of the Oxford Core Strategy 2026 (document CRCL/RI/5).

Traffic Modelling And Air Quality Modelling

- 3.3.10 The effect of the Scheme on annual average daily traffic (AADT) flows on the road network near the SAC has been modelled in the following way:
- i) The total annual changes in rail passenger trips previously reported to the Inquiry were converted to annual average daily numbers of trips by dividing by 365.
 - ii) Allowance was made for expected growth in passenger numbers to the design year of 2016.
 - iii) The annual average daily passenger trips to and from each station were converted to car movements (AADT) by applying a factor of 83.9%.
 - iv) The remote trip ends of the scheme-related car movements were estimated on the basis of the "hexcell" method previously reported [X/20, 4.4.3b].
 - v) The scheme-related AADT car movements were then assigned to the network using the Central Oxfordshire Transport Model ("COTM"). COTM models the two peak hours, at which times congestion occurs. In modelling peak hour flows, COTM produces several iterations in its output so that congestion and its effects on the routes traffic takes can be simulated. Such an approach is not necessarily appropriate at other times of day since there is generally less congestion than in the two peak hours. Therefore, in modelling the effect of the scheme on AADT traffic flows, only the first iteration of the model (which makes no reassignment of traffic due to congestion) was used. The AADT modelling has not been calibrated but the resulting flows compare reasonably well with the findings of long-term traffic count data on the A34 and a 1-day traffic survey on the A40.
- 3.3.11 The findings of the AADT modelling are that:
- i) AADT flows on the A34 south of the Peartree interchange (passing through the SAC) would be reduced by the scheme, by 487 car movements per day in 2016 and by 609 in 2026. This reduction will be due to car trips transferring away from Oxford station to Water Eaton, and some modal change from car to rail.
 - ii) AADT flows on the A40 near the Pixey and Yarnton Meads SSSI would increase due to the scheme, by 746 car movements per day in 2016 and by 918 in 2026. This increase will be due to increased trips to the railway at Water Eaton Parkway from Witney and the surrounding area.

- 3.3.12 The DMRB recognises that changes in vehicle design have resulted in reductions in emissions of oxides of nitrogen, carbon monoxide, hydrocarbons and particles. That process is expected to continue, resulting in further reductions of NOx emissions from road traffic.
- 3.3.13 The following table summarises data in respect of nitrogen at Wolvercote Meadows (WM) and Pixey and Yarnton Meads (PYM) SSSIs (both are Lowland Meadows):

Site	NOx concentration (µg per cubic metre)		Nutrient Nitrogen Deposition (kg per hectare per year)	
	Critical Level	Baseline*	Critical Load	Baseline*
WM	30 (Annual)	21.1	20-30	18.6
	75 (24 hour)	42.2		
PYM	30 (Annual)	20.8	20-30	21.1
	75 (24 hour)	41.6		

* Note – site specific baseline derived from the Air Pollution Information System ("APIS") database.

- 3.3.14 The APIS database provides average values for each square of a grid of 5 km squares.
- 3.3.15 The scheme will influence nitrogen levels by virtue of emissions from trains using the scheme and by virtue of road traffic generated by the scheme.
- 3.3.16 In relation to impacts on sensitive ecological receptors, there are specific significance criteria in *The Environment Agency For England And Wales (2010) Horizontal Guidance Note H1*, Annex F. These relate to the critical loads and critical levels set for the protection of habitat sites. Emissions are considered insignificant (that is, no further mitigation or assessment required) if:
- a) The impact associated with emissions from the scheme (the process contribution, PC) is less than 1% of the long term critical load or critical level;
- or, if the PC is greater than 1%,
- b) the predicted environmental concentration (PEC) (the PC plus the existing background conditions) is less than 70% of the critical load or critical level.
- 3.3.17 NOx concentrations and nitrogen deposition levels are expected to fall at Wolvercote Meadows SSSI due to the drop in traffic along the A34. Therefore the effect of road traffic emissions alone on Wolvercote Meadows SSSI is not considered to be significant for either the 2016 or 2026 modelled scenarios.

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- 3.3.18 The predicted impacts at both SSSIs are greater in the 2016 scenario than in 2026, notwithstanding the larger traffic flows in 2026, because emissions from individual vehicles are expected to fall between 2016 and 2026.
- 3.3.19 NO_x concentrations and nitrogen deposition levels in the northern section of the Pixey and Yarnton Meads SSSI are expected to increase because more traffic will use the A40. The annual NO_x process contribution is above 1% and the PEC for the same year is just above 70% of the critical load, although the predicted impacts remain well below the relevant standard.
- 3.3.20 Predicted concentrations of NO_x fall rapidly with increasing distance from the A40, as shown by Figure 4.1 of appendix 9 of document CRCL/P/10/R/B.
- 3.3.21 The cumulative impacts of the scheme, including rail and road traffic emissions, on the SSSIs indicates that the predicted nitrogen deposition levels and short term NO_x concentrations are not expected to be significant. In terms of the annual mean oxides of nitrogen, the impacts predicted cannot be regarded as insignificant.
- 3.3.22 The assessment method is conservative. Pessimistic emission factors have been used for the trains. The expected traffic-related reduction in the baseline is not considered. And only marginal decreases in baseline air pollution would render insignificant the impacts associated with the proposed scheme.
- 3.4 **Whether condition 32 (measures for the protection of the Hook Meadow and Trap Grounds SSSI), in the form proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme would not be likely to have an adverse effect on the notified special interest features of the SSSI.**
- Need for Condition 32***
- 3.4.1 Chiltern did not consider a condition in this form was necessary and did not propose it during the earlier sessions of the Inquiry. The Inspector reached a different conclusion.
- 3.4.2 Emissions arising from the Scheme are very unlikely to have an adverse effect on the designated features of the Hook Meadow and Trap Grounds SSSI. Through lack of management and for other reasons, the designated features have already been adversely affected and all of the SSSI is in an unfavourable condition. Parts of it are incapable of restoration to favourable condition. The condition is not likely to be necessary.
- 3.4.3 The pollutant levels predicted at this SSSI were reported to earlier sessions of the Inquiry (CD/1.16, CRCL/INQ/74). The predicted total concentrations of NO_x and deposited nitrogen attributable to trains from the scheme are not insignificant, but NO_x levels do not exceed the critical level and deposited nitrogen levels (22.5 kg per hectare per year) are at the lower end of the critical load range (20-30 kg per hectare per year). The predicted levels are based on modelling using pessimistic emission factors from the trains, which are likely to improve in future, and are
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therefore likely to be conservative. In addition the critical levels and loads used are those for lowland meadow habitat which is only present, albeit in a slightly degraded form, in Unit 1 (see Figure IMG22.2, appendix IMG22, CRCL/P/12/R/B).

A Suitable Form for Condition 32

- 3.4.4 Chiltern and Natural England have discussed and agreed a revised form for condition 32 which they commend to the Secretary of State as properly fulfilling the matter set out at 3.4 of this report while meeting the tests for planning conditions in Circular 11/95. The result is set out in paragraph 6.5 of a statement of common ground (CRCL/RI/16). It was explained at the Inquiry that the version of Condition 32 in CRCL/RI/16 supersedes that in Appendix IMG21 of document CRCL/P/12/R/B.

3.5 Other Matters

- 3.5.1 Amended versions of the TWA Order (CD/1.2.3) (and a tracked amended version, CRCL/RI/11), Deposited Plans and Sections (CD/1.9.1), Book of Reference (CD/1.10.1) and Planning Direction drawings (CD/1.13.1) were submitted for information to the re-opened Inquiry. An explanation of the amendments to the draft Order is provided in CRCL/RI/12 and an explanatory memorandum to the plans and book of reference is document CRCL/RI/13. The amendments reflect the Secretary of State's letters of 15 November 2011 and 24 January 2012.

4 THE CASE FOR NATURAL ENGLAND

The material points were:

4.1 Natural England's Role

- 4.1.1 The European Protected Species of relevance in this part of the Inquiry are bats at Wolvercot Tunnel. Natural England is the relevant licensing body for the purposes of granting licences in respect of European Protected Species under regulation 53 of the Habitats Regulations.
- 4.1.2 Natural England did not attend the re-opened Inquiry as a supporter of, or an objector to, the railway improvements scheme. Rather, its attendance was as an official body required to attend under Rule 15 of the Transport and Works (Inquiries Procedure) Rules 2004, in response to a letter dated 23 April 2012 from Mrs Harris, a statutory objector. Its role was that of objective advisor.
- 4.1.3 Natural England originally objected to the scheme on the ground that insufficient information had been provided to give confidence that the scheme would not have unacceptable impacts on bats in Wolvercot Tunnel. Natural England also objected due to the impact of air pollution on various conservation sites designated for their exceptional grassland features.
- 4.1.4 Natural England has followed a consistent iterative process, whereby the regulator has sought further information and mitigation from the regulated party and consequently has been able to withdraw its

objection. This is very common. At least 30-40% of licence applications receive further information requests.

- 4.1.5 The evidence given by Natural England to the re-opened Inquiry related to items (i), (iii) and (iv) of paragraph 7 of the Department for Transport's letter dated 6 March 2012.

4.2 **Whether the mitigation measures proposed by Chiltern since January 2011 and agreed by Natural England to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme in this regard.**

- 4.2.1 The impediment referred to was Natural England's indication that an application for a European Protected Species licence in respect of bats at Wolvercot would be likely to fail because insufficient information had been provided to give Natural England certainty that the works proposed in the tunnel would not be detrimental to the maintenance of the population of the bats at a favourable conservation status in their natural range.

- 4.2.2 The initial bat licence application was received by Natural England in April 2011. The complexities of the case (for example, the novel lighting system) led to the licensing team instigating a formal Quality Assurance process, with regard to the assessment of the "favourable conservation status" test. The matter has been considered by Natural England's Wildlife Licensing Specialist and by its European Protected Species Senior Specialist, and it has been reviewed by a wildlife specialist not previously involved in the case. Natural England's National Mammal Senior Specialist specifically advised on the lighting trial. Considerable weight should be given to Natural England's expertise in these matters.

- 4.2.3 There have subsequently been a number of meetings between Natural England and Chiltern, described in document Obj246/13B. Those, the findings of the full-scale lighting trials in August and September 2011, and other new information from work undertaken by Chiltern in collaboration with Natural England have resolved concerns that Natural England previously had.

- 4.2.4 The previous concerns, and the new information that has addressed them, are set out in Part A of section 4 of Natural England's statement of case (document Obj246/9). Briefly:

- i) The previous lack of surveys of the use of the tunnel by bats has been satisfactorily addressed by new surveys, and others are planned by Chiltern.
- ii) The tunnel works are now proposed to be carried out at such times as will lessen their disturbing effect on bats.
- iii) The deterrent lighting system has been tested and found to operate satisfactorily, causing no long-term disturbance to bats in the tunnel.
- iv) A robust pre- and post-development monitoring strategy has now been adopted, with clear objectives. Annual monitoring reports to Natural England will enable problems with the bats to be identified and remedied.

- v) The previously-proposed use of acoustic lures is no longer relevant because the deterrent lighting system has been found to operate satisfactorily.
- vi) The monitoring strategy gives confidence that, should drainage alterations in the tunnel alter the ambient humidity and affect the tunnel's suitability as a bat roost, any such change will be identified and remedied.
- vii) Air disturbance in the tunnel caused by passing trains, faster than now, has been assessed and Natural England is satisfied that changes in air pressure resulting from increases in train speeds will remain below the level that would be likely to harm bats roosting in the tunnel.

The Deterrent Lighting Scheme

- 4.2.5 The lighting trial took place during the period when the highest number of bats are considered to be using the tunnel and therefore at the time when the greatest impacts were likely.
- 4.2.6 Network Rail has confirmed (Annex B to document Obj246/10) that it will allow the lighting scheme to be installed and permanently retained in the tunnel, and that Network Rail would maintain the lighting system. Nevertheless, Natural England considers that the provision of the lighting system in the tunnel may be better secured by a planning condition; and document Obj246/17 provides a draft condition the purpose of which is to ensure that the lighting system is installed, operated and maintained to avoid harm to bats. The use of such a condition would be consistent with paragraph 98 of ODPM Circular 06/2005 (document CD 5.20).
- 4.2.7 Natural England is satisfied on the basis of the report from the lighting trial that the deterrent lighting system will be effective to deter bats, and considers it should be adopted as a permanent mitigation measure. It provided sufficient mitigation to enable Natural England to conclude that the proposal passed the favourable conservation status test. In any event, there is nothing to suggest that the impact on bats that are not deterred would necessarily be significant or adverse. With proper monitoring the system will be sufficient to ensure that harm above an unacceptable threshold does not occur. Should monitoring suggest an intervention to be necessary, it cannot be known now what action would be necessary. But it is possible to imagine now a number of illustrative measures: changing the specification of the lights, providing additional roosts and/or shelters, enhancing or creating alternative commuting routes and/or foraging grounds.
- 4.2.8 In light of the further information provided by Chiltern, it is not necessary for a licence to cover the operation of the lighting system. An impact on a European Protected Species is only considered licensable if it reaches a certain threshold. In relation to disturbance, the Habitats Regulations term disturbance to be (among other things) disturbance that affects "significantly the local distribution or abundance of the species". A similar approach is taken in the definition of "favourable conservation status" in the Habitats Directive. The disturbance caused to bats by the short-term illumination in the tunnel would not be so significant as to reach such a threshold.

Potential Bat Casualties

- 4.2.9 There is no dispute that the operation of trains sometimes kills bats. But the fatal collision of bats and trains is incidental, rather than deliberate, killing. Therefore Article 12(1)(a) of the Habitats Directive which prohibits the deliberate capture or killing of individual specimens is not engaged, and no offence is committed under corresponding Regulation 41(1)(a) of the Habitats Regulations. This interpretation is shared by the EU Commission's guidance on Article 12 (Obj123/36: page 49, para 82). It has never been Natural England's position that the impact of the existing or prospective trains would amount to deliberate killing: nor has Natural England ever been asked to assess an application for the deliberate killing of a European Protected Species by vehicles.
- 4.2.10 It is therefore not possible to characterise any killing of bats in this case as "deliberate" for the purposes of Article 12(1)(a). Circumstances where the operation of a train could amount to deliberate killing, if they exist, would be exceptional and far from the present case. For example, the level of casualties is not expected to be high; the fact of casualties is not established, and the opportunity to take remedial action would be taken. As to "incidental" killing, the effect of the scheme on the bats will be monitored so that appropriate conservation measures can be taken; and that is the approach required by the Habitats Directive (Article 12(4)) and the Regulations (Regs. 50-51). The finding of one bat casualty from a train strike in May 2012 does not affect Natural England's assessment.

Adequacy of Survey Work Undertaken

- 4.2.11 Natural England is satisfied that the survey evidence now available provides an accurate picture of bat activity in Wolvercot Tunnel, including roosting, commuting and hibernation. That is the basis upon which Natural England can make a finding as to the likely impact on bats or favourable conservation status. Natural England's position is that enough additional survey work has already been undertaken to enable it to come to a view that there is unlikely to be an unacceptable impact on bats. This conclusion is supported by the imposition of a strict monitoring and mitigation method statement.
- 4.2.12 Others draw attention to the case of *R (Hardy) v Cornwall CC* (2001). In that case, no surveys had been undertaken to show whether bats were present in the relevant mine shaft (despite English Nature's strong concerns), and the Court concluded that such surveys were necessary to allow a rational conclusion that there would be no significant nature conservation effects. But in the case of the Scheme, detailed surveys have been carried out and the Secretary of State is in a position, on the information provided by Chiltern and the advice of Natural England, to conclude as to the likely nature of the conservation effects.
- 4.2.13 Article 12(i)(d) of the Habitats Directive prohibits the deterioration or destruction of breeding sites or resting places. The tunnel is not used as a breeding site; but it is used as a roost for bats, although such use is fairly limited and not substantial. If an impact was demonstrated, remedial proposals could readily include the enhancement of roosts and crevices or the creation of alternative roosts elsewhere. It is not likely

that a licence for any ongoing disturbance of roosts or the deterioration of resting places would be required. As with disturbance, not any deterioration in a roost site counts for the purposes of Article 12. The EU Commission's guidance states that Article 12(i)(d) should be understood as aiming to safeguard the ecological functionality of breeding sites and resting places (Obj123/36 page 41 para 53). Therefore, roosts of limited significance or those that are not used regularly are less likely to be protected – an approach which was adopted and approved by the Court of Appeal in *Morge* (R (Morge) v Hampshire County Council, (2011) UK SC 2 (document CRCL/INQ/80)).

Enforcement of Terms

- 4.2.14 Chiltern has made a number of commitments that have enabled Natural England to remove its objection. Those are contained in the annex to the licence application. There are a number of ways in which the commitments could be secured between Natural England and Chiltern, but there is no reason to doubt that the commitments will be made and, if necessary, enforced. The Secretary of State therefore can be reasonably certain that the commitments will in due course be met.
- 4.2.15 Natural England and Chiltern are agreed that it is desirable for the installation and operation of the deterrent lighting system to be the subject of a condition (CRCL/RI/26 proposed condition 34). This will secure the long-term maintenance of the deterrent system, by Chiltern and its successors and any other person deriving an interest from Chiltern under the planning permission. It is intended that the lighting system should operate indefinitely (subject to changes made following monitoring) to secure the long term protection of bats. Triggers and thresholds for action and enforcement are clearly defined in the licence application (CRCL/RI/3 starting at page 256). Such a condition would be consistent with the advice of paragraph 98 of ODPM Circular 06/2005 (CD/5.20).

Conclusion: Removal Of The Impediment

- 4.2.16 The mitigation measures proposed by Chiltern to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme identified by the Inspector at paragraph 9.17.11 of his report. In view of those measures it is likely that a licence will be granted for the scheme and that the favourable conservation status of the protected bats will be maintained.
- 4.3 **Whether Condition 31 (measures for the protection of the lowland hay meadow habitat at the Oxford Meadows Special Area of Conservation), in the form now proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the integrity of the Oxford Meadows SAC, having regard to the conservation objectives of the site, by reason of air pollution.**
- 4.3.1 Document CRCL/RI/16 is a statement of common ground between Natural England and Chiltern with regard to the adequacy of conditions 31 and 32. Its paragraph 5.8 sets out a draft of Condition 31 that has been agreed by both parties.

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- 4.3.2 Natural England's position is that condition 31 as now proposed and agreed between Natural England and Chiltern would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the integrity of the Oxford Meadows Special Area of Conservation having regard to its conservation objectives.
- 4.3.3 The condition is necessary because of the potential for an indirect chemical impact on the relevant qualifying feature of the SAC, that is, lowland hay meadows. There is no serious dispute that the other qualifying feature, creeping marshwort, would not be adversely affected by the proposals.
- 4.3.4 Annex C of document Obj/246/10 includes a description of the Oxford Meadows SAC, together with the SSSI units that underpin it. The only relevant parts of the SAC (identified in the Secretary of State's letter, document X/24) are the Wolvercote Meadows SSSI and the Pixey and Yarnton Meads SSSI. The same Annex also includes a copy of the final pre-publication version of the conservation objectives for the SAC. The status of that document makes no material difference to the robustness of Natural England's recent evaluation, which was undertaken because Natural England is currently clarifying the conservation objective statements for every European site in England. Document CRCL/RI/17 includes an error in the condition assessment comment for Unit 2 of the Wolvercote Meadows SSSI. The assessment includes the sentence "The Conservation Objectives state that this is MG4 which it is not." The reference is to MG4 grassland and the sentence should be altered to read "The Conservation Objectives state that this is wholly MG4 which it is not." MG4 is present in the middle field of Unit 2.
- 4.3.5 Although Chiltern has provided some modelling data, the potential for significant adverse effects cannot be ruled out until the impact of the scheme has been assessed against on-site data. The current data, which are completely based upon modelling, leave room for uncertainty. By requiring further assessment, Natural England adopts a precautionary approach, in light of the significance and sensitivity of the SAC.
- 4.3.6 The draft Condition 31 provides a robust series of steps in which data will be gathered, thresholds set and (if necessary) mitigation carried out. Item (vii) notes that mitigation is likely to include changes to the management regimes for the relevant parts of the SAC, that is, the Wolvercote Meadows SSSI and the Pixey and Yarnton Meads SSSI. There is no reason to believe that management measures (if necessary) could be carried out in the relevant units. For example, one measure is the possibility of varying the grazing of the area by cattle; but it would not be appropriate at this stage to set out what might hypothetically be required by way of management. The important point is that tried and tested management techniques are available and that there can be confidence that they would be implemented (CRCL/RI/31). Accordingly, Natural England is able on the basis of Condition 31 to rule out the possibility of likely significant effects on the SAC.
- 4.3.7 The precautionary approach adopted by Natural England in this regard is entirely in accordance with EU law. It is permissible to take into account mitigation measures when deciding whether or not significant effects would be likely on a protected site (see *R (Hart DC) v SSCLG* [2008])
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EWHC 1204 (Admin) Sullivan J at para. 71: "... considering proposed mitigation measures at the screening stage under Art.6(3) would not be frustrating the purpose of the legislation by pre-empting any particular form of inquiry ..."). By incorporating condition 31 into the scheme, Natural England's view is that there will be no risk of significant effects on the SAC.

4.4 **Whether condition 32 (measures for the protection of the Hook Meadow and Trap Grounds SSSI), in the form proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme would not be likely to have an adverse effect on the notified special interest features of the SSSI.**

4.4.1 Natural England was pleased to see that planning conditions relating to Hook Meadow and Trap Grounds SSSI (and to Oxford Meadows SAC) were proposed. There is a potential for an indirect chemical impact to the SSSI (and to the SAC) as a result of the addition of nutrients to a low nutrient habitat from the pollutants in emissions associated with use of the scheme. But the condition as originally proposed lacked precision.

4.4.2 Natural England's position on Condition 32 is similar to that on Condition 31: the condition in the form now proposed and agreed between Natural England and Chiltern (again the most recent version is at CRCL/RI/26) would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the notified special interest features of the Hook Meadow and Trap Grounds SSSI. Condition 32 proposes a similar scheme of monitoring and (potential) mitigation for the SSSI to that proposed for the SAC. Natural England will be able to assist Chiltern if necessary to secure access to the Hook Meadow part of the SSSI for the purpose of monitoring and any necessary management.

4.4.3 Two relevant points distinguish the SSSI from the SAC. First, the SSSI is in unfavourable condition. Secondly, the duty on the Secretary of State arises under s28G of the Wildlife and Countryside Act 1981 rather than under the Habitats Regulations. That duty is to "take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest." While the SSSI is in favourable condition, management measures (if necessary) to offset any impacts from the scheme are in principle available. It would not be reasonable to require Chiltern to bring the SSSI up to favourable condition except to the extent that the scheme has an impact upon it. Accordingly, condition 32 ensures so far as possible that the special interest features of the SSSI are protected from any additional impacts from the scheme.

5 THE CASES FOR THE OBJECTORS

The scope of the re-opened Inquiry was set out in the Department for Transport's letter dated 6 March 2012 (Inquiry document X/25) and confirmed in the DfT's letter dated 3 April 2012 (document X/28) and again at the pre-resumption meeting held on 5 April 2012 (the note of which is document X/29). When re-opening the Inquiry on May 29 I announced that if any party wishes to make

representations on matters unrelated to those set out in paragraph 7 of the 6 March 2012 letter I would forward to the Secretaries of State with my report any such material that I receive; but that my report would address the matters set out by the Department for Transport.

The cases of those objectors who appeared at the re-opened Inquiry are reported largely in order of appearance in so far as they are relevant to the matters listed in paragraph 7 of the 6 March 2012 letter. Other matters raised by those who appeared at the Inquiry is identified but not reported. Additional relevant points from written representations are then reported in order of assigned objector number, and all written representations received at the Inquiry accompany this report.

The material points were:

5.1 Dr Michael Drolet and Dr Rosalind Thomas (Obj 9)

- 5.1.1 The proposed speed of trains would, through noise and vibration, adversely affect local residents, businesses and the protected bats of the Wolvercot tunnel. Chiltern has failed to demonstrate that the trains would not have an adverse effect, by virtue of their speed, or that the trains could not run at lower speeds than are proposed.
- 5.1.2 The scheme provides insufficient safeguards to offset noise and vibration. Chiltern originally told Dr Drolet and Dr Thomas that no noise mitigation would be needed at their property and later revised its calculations and said that noise mitigation measures would be provided. Chiltern's assessment of the noise and vibration effects of the scheme is not robust and their claim that no significant noise impacts are predicted at the Doctors' property is not convincing. Objectors from Lakeside and from Waterways complain regularly about appalling noise pollution from trains. People living by railways suffer high levels of stress.
- 5.1.3 It is not sufficient to use structural damage as the measure of unacceptable vibration, as Chiltern do, because lower levels of vibration will disturb sleep and cause serious annoyance.
- 5.1.4 In his report, the Inspector has required the local authority to monitor actual noise and vibration levels. But local councillors say that Oxford City Council has neither the personnel, equipment or the expertise to do that. Chiltern will co-operate satisfactorily with the local council in monitoring noise and vibration. But:
 - i) Monitoring should be by an independent body, previously approved by the Council; and,
 - ii) Monitoring should continue for more than the 18 months proposed.
- 5.1.5 The Noise and Vibration Mitigation Policy is intended by Chiltern to provide for reasonable enjoyment and amenity inside residential properties. This implies that severe disruption is expected outside the residential properties, that is, in people's gardens and in school playgrounds.
- 5.2 Councillor Michael Gotch (Obj 61)**
- 5.2.1 Cllr Gotch appeared in has capacity as ward Councillor for Wolvercote.

5.2.2 First floor flats at Quadrangle House (St Peter's Road) would be less than 7 metres from trains on the dualled line, and the noise levels of 70 mph trains would be unacceptably high. The promised noise barriers can only be effective if they rise nearly to first floor ceiling level, which would be visually oppressive and harmful to outlook and to natural lighting levels in the building. A speed limit of 40mph at this point would ameliorate some of the damage to the environment of residents.

5.2.3 Paragraph 6 of document Obj61/4 refers to tasks that would be incumbent upon Oxford City Council. Cllr Gotch had, by the time of his appearance at the Inquiry, reconsidered and accepted the mechanism proposed by draft condition 19 whereby an independent expert approved by the local planning authority would report to the local planning authorities on the robustness of the schemes of assessment. There should be a clear statement that Chiltern should meet the cost of such reports and of monitoring noise and vibration levels associated with the scheme.

Other Matters

5.2.4 Cllr Gotch suggests alternative mitigation measures, matters beyond the remit of the re-opened Inquiry.

5.3 **Mr P M Napier** (Obj 88)

5.3.1 Following the close of the Inquiry on 28 January 2011, negotiations continued between Mr Napier and Chiltern. Those are summarised in Chiltern's consultant's letter dated 8 March 2011 (the "resolution letter", folder Obj88). Noise mitigation measures proposed by Chiltern for Quadrangle House include a barrier and non-statutory glazing for second floor flats in Phase 2B. If the assessed frequency of night freight trains fell below the level established by the Noise and Vibration Mitigation Policy to constitute "regularly", the non-statutory element would not be provided.

5.3.2 The proposed wording of item 7 in draft condition 19 includes a passage in parentheses, as follows:

(modified as necessary in the light of subsequent forecasts which led to the approval of East West Rail for construction).

5.3.3 An effect of that passage could be to permit East-West Rail to reduce the agreed forecast (in the Noise and Vibration Mitigation Policy, document CD/1.29/2.1 at 1.9) of 8 freight movements per night after Phase 2B to one which might not be considered to constitute "regularly", and thereby to remove the non-statutory noise mitigation proposal for Quadrangle House. That would be contrary to the position reached by Mr Napier and Chiltern, and would reduce the level of protection from railway noise afforded to Quadrangle House. The passage identified in paragraph 5.3.2 of this report should therefore be removed from the condition.

5.4 **Mr Peter Claye** (Obj 255)

5.4.1 Mr Claye is a retired chartered civil engineer.

Noise

- 5.4.2 The National Planning Policy Framework (document CRCL/RI/14) says at paragraph 123 that planning decisions should aim to avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development, and that other adverse impacts on health and quality of life arising from noise from new development. Attention is drawn to the Noise Policy Statement for England (document Obj255/7) in which paragraph 2.14 says, "It is recognised that noise exposure can cause annoyance and sleep disturbance both of which impact on the quality of life. It is also agreed by many experts that annoyance and sleep disturbance can give rise to adverse health effects. The distinction that has been made between 'quality of life' effects and 'health' effects recognises that there is emerging evidence that long term exposure to some types of transport noise can additionally cause an increased risk of direct health effects."
- 5.4.3 In the Environmental Statement, Chiltern have applied the Department of Transport's "Calculation of Railway Noise" ("CRN", Document CD/5.12). Chiltern says that noise exposure levels should be 55dB(A) for daytime and 45 dB(A) at night, even though the World Health Organisation recommends 40 dB(A) at night.
- 5.4.4 CRN contains a number of worked examples. Example 11 most closely resembles the Lakeside situation. It results in the finding that trains of 10 passenger coaches pulled by a class 47 diesel locomotive at 94 mph with a 2-metre high noise barrier would result in noise levels of 65 dB(A) daytime and 58 dB(A) at night at the property facades, or more when various site-relevant factors (proximity to the line, noise source at the top of the locomotive, sound diffraction at the top of the barrier, and the elevation of the line on an embankment 2 metres high) are taken into account.
- 5.4.5 No details of the suggested barriers have been issued to justify their effectiveness. In order to determine a mitigation strategy then the actual worst case must be considered; it should include Stages 1 and 2 and future traffic to be used within the next 15 years, in accordance with CRN. The Noise and Vibration Mitigation Policy does not set out details of precise mitigation. Rather, it sets objectives.

Vibration

- 5.4.6 Ground investigation has yet to be undertaken and Chiltern do not yet know where vibration problems will occur.
- 5.4.7 The increased number of trains and the associated vibration are more than likely to lead to settlement of the ground, which normally takes the form of a trough which could extend as far as 25 metres either side of the track, severely affecting many properties along the line, including Lakeside. It was agreed in examination that this would be consolidation settlement and therefore time-related; that the railway had been in place for a considerable time; and that there is currently no evidence of such a trough forming.
- 5.5 **Engage Oxford** (Obj 297)
- 5.5.1 Engage Oxford was represented in this part of the Inquiry by Mr Reuben

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- Peckham, a qualified acoustician with 15 years' experience.
- 5.5.2 The noise impact thresholds used in conjunction with the scheme are excessively high and could significantly under-estimate the impact on properties which are currently subject to low ambient noise levels.
- 5.5.3 Nevertheless, having reviewed the measured baseline noise levels and predicted railway noise levels for the north Oxford area it is apparent that baseline ambient noise levels in the area are sufficiently high such that Chiltern's noise assessment methodology does not adversely affect the north Oxford residents.
- 5.5.4 Mr Peckham's experience is that people who are subject to vibration in their properties at the "adverse comments possible" are quite significantly and adversely exposed to vibration. Contrary to Chiltern's view, this would not be an acceptable effect. Furthermore, paragraph 2.10 of the Noise and Vibration Mitigation Policy (document CD/1.29/2.1) says that, where the existing (baseline) vibration level is greater than the BS 6472 "adverse comments low" threshold, mitigation will be considered where the change in vibration dose value is 50% or more as a result of the Phase 1, 2A and 2B works. Thus in the case of properties exposed to high levels of vibration already, a large increase would be required before mitigation would be considered. Also, as Phase 1 relates to an increase only in passenger trains it does not take into account the more likely increase in operational vibration that could occur as a result of increased freight train movement associated with Phase 2. Ultimately this could result in a very severe vibration impact at some properties, justifying consideration of mitigation measures.
- 5.5.5 Consideration of draft planning condition 19 leads to the following comments:
- 19.1: Mr Peckham agrees with paragraph 19.1 of the condition, subject to the matters set out in paragraph 5.5.4 of this report.
- 19.2: Noise predictions can be undertaken relatively accurately using *Calculation of Railway Noise* (document CD/5.12). But many variables affect vibration predictions, which therefore have significant potential to be inaccurate. Paragraph 19.2 should be expanded to include precise requirements for compliance monitoring within (say) 6 months of opening the line, with a requirement to undertake remedial works if the vibration impact magnitude, measured in accordance with BS 6472:2008 is greater than "probability of adverse comments is low".
- 19.3: This is not relevant to the residents in north Oxford.
- 19.4: The performance standards are appropriate but there should be a compliance test noise survey upon completion and remedial works if necessary.
- 19.5: Agreed.
- 19.6: Agreed, subject to the matters set out in paragraph 5.5.4 of this report.
- 19.7: Not relevant to the area under consideration in north Oxford.
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- 19.8: Agreed, subject to the addition of a requirement for a compliance vibration survey once the improved railway is in operation.
- 19.9: Agreed.
- 19.10: Agreed.
- 19.11: This condition should also require a demonstration that the measures have been assessed to determine compliance through on-site surveys, to the satisfaction of the local planning authority and within a defined time frame.
- 19.12: It was agreed in examination that vibration mitigation of the types identified by Chiltern is likely to be practicable, subject to cost and design constraints. But where they are held to be not practicable, the local planning authority should be informed of the proposed measures to be implemented and an assessment undertaken to show the original measure to be not reasonably practicable. A revised assessment of the impact with the substitute measure should be provided to the satisfaction of the LPA.
- 19.13: No comment.
- 19.14: No comment.

- 5.5.6 The normal course of proceedings with any technical report to a planning authority to discharge planning conditions involves a peer review process undertaken by technical officers at the planning authority. Engage Oxford remains concerned that Oxford City Council may not have the will and resources to discharge the noise and vibration planning condition in the spirit in which it is intended. A provision within the planning condition to enable Oxford City Council or Engage Oxford to appoint an independent expert to act on their behalf would provide greater balance and ensure that the condition is discharged fairly.

Other Matters

- 5.5.7 Engage Oxford suggests alternative noise mitigation measures, matters beyond the remit of the re-opened Inquiry.

- 5.6 **Professor Sir Muir Gray** (Obj 149)

Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 5.6.1 There is no evidence that the measures proposed by Chiltern would mitigate the effect of passenger trains on bats. The evidence they have produced is not strong enough to allow any conclusion to be drawn. It would not be accepted by any scientific journal. The test should have been run continuously for three or six months (a reasonable period) before the findings could be accepted as valid.

Noise and Vibration

- 5.6.2 The noise and vibration discussed are for passenger trains whereas it is clear the main problem will come from freight trains. The mitigation

proposed by Chiltern is obviously inadequate. The Inspector should specify the mitigation measures. There is no evidence that Chiltern's contractor has expertise in this field.

Other Matters

- 5.6.3 Sir Muir Gray's statement of case suggests alternative noise mitigation measures, matters beyond the remit of the re-opened Inquiry.

5.7 **Quadrangle Management Limited** (Obj 14)

- 5.7.1 In response to my question, Quadrangle Management Limited said they propose no change to draft condition 19.
- 5.7.2 Bats in the tunnel would be likely to be struck by trains passing through at 70 mph, as the scheme would allow, or caught in air turbulence caused by trains and dashed against the internal surfaces of the tunnel or swept from surface roosts. The resulting attrition rate would be high and, because bats breed relatively infrequently, unsustainable.
- 5.7.3 Natural England's stated intention to grant a bat licence is unsafe, because they have not performed the necessary baseline survey of current casualty rates, and offer no confidence of a fail-safe measure to ensure the protection of this colony, which should be their duty as the relevant regulatory authority.

Other Matters

- 5.7.4 Quadrangle Management Limited suggested alternative mitigation measures, matters beyond the remit of the re-opened Inquiry.

5.8 **Mr and Mrs McClements** (Obj 106)

Noise

- 5.8.1 European Directive 2002/49 (Obj/106/3b) requires Member States to establish common assessment methods for environmental noise and a definition for "limit values", in terms of harmonised indicators for the determination of noise levels. Condition 19 and the Noise and Vibration Mitigation Policy should properly reflect, and be harmonised with, such guidance in the measurement of the impact of noise and its mitigation to ensure that Quadrangle House and the adjacent school are realistically protected from the adverse health effects of noise.
- 5.8.2 Mr and Mrs McClements support Mr Napier's submission (section 5.3 of this report) regarding the proposed wording of item 7 in draft condition 19, for the reason given by Mr Napier. The part of that item that is in parentheses should be removed.
- 5.8.3 Research into the health effects of noise since the publication of PPG24 in 1994, and the publication of the Noise Insulation (Railways And Other Guided Transport Systems) Regulations in 1996, has resulted in significant new recommendations which replace and outdate Chiltern's noise impact thresholds. There is a large body of subsequent research into the health effects of noise: in particular, that published by the CALM Network, the World Health Organisation and the European Environment Agency.

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- 5.8.4 European Directive 2002/49 (Obj/106/3b) relates to the assessment and management of environmental noise. Its Annex 1 defines the day-evening-night noise level L_{den} , which is calculated from the annual average day, evening and night sound levels L_{day} , $L_{evening}$ and L_{night} .
- 5.8.5 The EEA technical report "Good Practice Guide on Noise Exposure and Potential Health Effects" (Obj/106/3a) suggests that L_{den} around 50 dB would represent a good noise quality, and L_{night} of less than 55 dB should be respected to protect the population from serious health effects.
- 5.8.6 The CALM Network, in its *Good Practice Guide On Noise Exposure And Potential Health Effects*, considers L_{den}/L_{night} values of 50/40 dB as an optimum target that is defensible.
- 5.8.7 The World Health Organisation regards 55 dB $L_{night, outside}$ as an interim target, and the WHO's "Night Noise Guidelines for Europe" (Obj/106/3f) says that although biological effects may arise as low as 30 dB $L_{night, outside}$, especially for vulnerable groups such as young children, 40 dB $L_{night, outside}$ should be an adequate health protection value. The WHO "Guidelines for Community Noise" (Obj/106/3d) recommends that "At night, sound pressure levels at the outside facades of the living spaces should not exceed 45 dB L_{Aeq} and 60 dB L_{Amax} , so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB."
- 5.8.8 In the case of Crossrail, both underground and overground sections, an increase in noise of more than 3 dB is classified as a "significant negative impact" and 40 dB $L_{Amax,s}$ in residential buildings and 30 dB $L_{Amax,s}$ in studios are considered the appropriate levels (Obj234/10, footnote 9 page 2). People near the scheme should not be disadvantaged because the scheme is not Government sponsored.
- 5.8.9 Mr and Mrs McClements' infant son has been hospitalised five times with severe asthma attacks and he is hyper-sensitive to sudden, loud stimuli. The increased frequency and intensity of sudden noise from the railway at Quadrangle House may stop him sleeping and result in psychological trauma.
- 5.8.10 In the same way as is proposed for the music studio at 45 Lakeside, Building Bulletin 93 *Acoustic Design of Schools: A Design Guide From The Department Of Education And Skills* (Obj106/4/L) should be applied to the effects of the scheme on Wolvercote School, and to the living rooms of flats 13 and 14 Quadrangle House. Mr McClements is a self-employed audio engineer, project manager and music teacher and his neighbour works from home as a French teacher. Mr McClements' interest could alternatively be protected by bringing forward the fitting of noise insulation at their property to Phase 1 of the scheme.
- 5.8.11 Building Bulletin 93 recommends a maximum indoor ambient noise level in primary school classrooms of 35 dB $L_{Aeq,30min}$ or 55 dB $L_{A1,30min}$. Other standards are set out in Table 1.1 of the document for other parts of primary schools. Those standards should be applied to Wolvercote School. Although Chiltern claims that, because predicted noise levels at the school are below the Noise Impact Thresholds in the Noise and Vibration Mitigation Policy, mitigation is not necessary and reasonable
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amenity would be achieved inside and outside existing schools, this ignores the standards laid out in Building Bulletin 93.

- 5.8.12 The Secretary of State is invited to consider imposing the following noise threshold levels in place of those adopted by Chiltern: 50 dB L_{den} ; 40 dB L_{night} ; and 60 dB L_{Amax} (outside façade, night). The limits should be the same as existing levels if those are higher. The limits should apply after both phases of the scheme. The noise impacts of the scheme should then be re-examined.
- 5.8.13 Following Phase 1 of the scheme there is likely to be a “regular” number of significantly loud events between midnight and 06:00 (the unidentified number of passenger trains quoted in the Policy and the one or two freight trains that currently use the line), and therefore the offer of non-statutory noise insulation should be brought forward to Phase 1.
- 5.8.14 The existing indoor and outdoor ambient noise levels, including the L_{Amax} value, at both first and second floor level in the line-side flats at Quadrangle House, should be independently checked and reported to the Inquiry. The existing indoor and outdoor ambient noise levels, including the $L_{A1\ 30min}$ parameter, should be independently checked and reported to the Inquiry.
- 5.8.15 Refined noise modelling should be undertaken to establish the predicted noise impacts at Mr and Mrs McClements’ property after Phase 1 of the scheme and reported to the Inquiry.
- 5.8.16 Without prejudice to paragraph 5.8.12, and at the very least, condition 19 should require Chiltern to mitigate noise to the noise exposure thresholds used by Chiltern to assess the impact of the scheme (during the day, 55 dB $L_{Aeq,16}$ and at night 45 dB $L_{Aeq,8}$) or to existing levels if they are higher, following both phases of the scheme, unless predicted levels will be less than existing levels.

Vibration

- 5.8.17 Condition 19 should define a continuing responsibility to implement further noise and vibration measures, in the event that the mitigation proposed is not achieved.

Human Rights

- 5.8.18 Condition 19, together with the Noise and Vibration Mitigation Policy, provides inadequate safeguards of the McClements’ fundamental right to adequate sleep, under Article 8 of the European Convention on Human Rights (right to respect for private and family life).

- 5.9 **Dr Caroline Robertson** (Obj 234)

Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 5.9.1 When considering adverse effects under the Habitats Directive, the precautionary principle must be used; that is, if information or evidence is lacking, adverse effects should always be assumed.
- 5.9.2 There is no evidence that operating trains will not harm bats. Using the precautionary principle, if bats are found dead inside the tunnel, it should be assumed that the bats died as a result of the trains. There is

evidence that bats are killed by collisions with trains: out of 18 bats caught and tagged in May 2012, one was killed by a train within days. In the absence of any bat casualty surveys the assumption must be that 1 in 18 (about 5%) of the bat population is being killed by collisions with trains at present, every two weeks when the bats are active. This does not take into account any disturbance from tunnel maintenance, noise, pollution and vibration from the existing trains. The true level of bat casualties from the current train services is likely to be higher.

- 5.9.3 The bat surveys conducted in 2009, 2010 and 2011 in Wolvercot Tunnel show a decrease in bat activity each year. The “enhanced” rail service on the line was introduced in May 2009, increasing the number of trains from 113 services per week to 156 (38%). The smallest species of bat, the pipistrelle, which would be the most prone to barotrauma due to its size, has shown a 76% reduction in activity in 2010 and a further 58% reduction in 2011. It is likely that bats are being harmed by the current train services. And, with the scheme, the new train services will kill half the current numbers of bats that use Wolvercot Tunnel, assuming the lighting system works as proposed. The only sensible and logical conclusion must be that there will be a detrimental impact on the favourable conservation status of the bat species that use the tunnel.
- 5.9.4 Wolvercote Tunnel is the only known railway tunnel used by bats and trains. In examination, Dr Robertson confirmed that she had no evidence of bats being harmed in railway tunnels elsewhere.
- 5.9.5 14 species of bat have been detected using the tunnel. The tunnel is used by bats as a day roost, for hibernation, for foraging, to swarm and breed, and to pass beneath Wolvercote roundabout; it is a crucial and vulnerable pinch point in bats’ commuting routes. The scheme would have a catastrophic effect on the local bat population. And bats have low reproductive rates.
- 5.9.6 The proposed deterrent lighting scheme disturbs frequently 60% of bats from their usual activities and no-one knows what the long-term impact of this will be. The lights are ignored by 40% of bats, which it therefore cannot protect. The Order scheme would make conditions in the tunnel more hazardous for bats in that the bats would:
- a) Have less time to get out of the way of oncoming trains, because the new trains would be faster;
 - b) Have a more-confined space inside the tunnel into which to evade the trains, because the track would be relaid nearer to one side of the tunnel;
 - c) Encounter more trains than at present;
 - d) Be exposed to more train-related air pressure and turbulence, noise, vibration, exhaust gases and heat than at present.
- 5.9.7 By means of the scheme, Chiltern would knowingly disturb, harm and kill bats. An offence under the Habitats Regulations would be committed.
- 5.9.8 Wolvercot Tunnel is irrefutably a resting place and/or breeding site that falls under protection by Article 12(1)(d) of the Habitats Directive. That Article does not use the word “deliberate”; breeding sites and resting places are protected regardless of the motive. Development that

- threatens to destroy this site or render it unusable to bats requires a protected species licence.
- 5.9.9 Natural England gave evidence that it expects bat casualties to occur from operating trains, and considers bats killed this way to be "incidental" killing as mentioned in Article 12(4) of the Habitats Directive.
- 5.9.10 Keystone Environmental do not consider incidental killing as the result of a lawful operation to be a defence in law (CD/2.27, page 3, 1.14): "It is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity." And attention is drawn by Natural England to the *Guidance Document On The Strict Protection Of Animal Species Of Community Interest Under The Habitats Directive 92/43/EC* (document Obj123/36, II.3.6: "the Guidance"); conservation measures should be undertaken as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.
- 5.9.11 It is obvious that Article 12(4) is meant to protect developers and individuals from situations where bat casualties are not reasonably foreseeable but nonetheless occur. Once the developer is made aware of the detrimental impacts, the developer is then under an obligation to try to remedy the situation.
- 5.9.12 At Wolvercote Tunnel, the numbers of bats are declining and one is known to have been killed by a train. Chiltern now knows that the current level of train services is having a detrimental impact on the bats, and so is under an obligation to try to remedy the current situation. To allow enhancement of an existing rail corridor through a known roosting, swarming and commuting site for bats to fall under "incidental" killing, where bats are already being killed, goes against the whole purpose of the Habitats Directive.
- 5.9.13 The term "deliberate" is explained quite clearly in the Guidance (document Obj123/36) at II.3.4a (51) and is meant to cover situations like the current one where Chiltern, whilst not intending a detrimental impact on bats, nonetheless operates its trains knowing that such detrimental impact cannot be avoided and that bats will be harmed.
- 5.9.14 Article 16 of the Habitats Directive allows derogation from the strict protection in Article 12 only if several conditions are met. There should be no satisfactory alternative; but the trains could terminate at Water Eaton, short of the tunnel, or pass through the tunnel more slowly than proposed. The favourable conservation status of the species concerned should be maintained. There should be imperative reasons of overriding public interest, but there are none.

Conclusion: Removal Of The Impediment

- 5.9.15 Changing the single track branch line, line speed 30 mph, to a mainline railway to London, line speed 100 mph, will kill or harm the bats that currently use the tunnel. A licence for operating trains should be mandatory. As 2012 is the International Year Of The Bat, there should be a satisfactory mitigation strategy; but none has been proposed and so

permission to implement the scheme should be refused.

Condition 19

- 5.9.16 The Noise Policy Statement for England, mentioned at the Inquiry in 2010/11 (document Obj234/10), is now specifically included in the National Planning Policy Framework and should therefore be given greater weight than previously.
- 5.9.17 Oxford City Council's planning department is not in a position to properly oversee the development. Condition 19 should provide for an organisation with "teeth", "muscle" and money to enforce mitigation and correct mistakes if and when Chiltern fails to live up to its promises and predictions.
- 5.10 **Mr and Mrs Offord and Mr and Mrs Bradshaw** (Obj 238)
- Condition 19**
- 5.10.1 Item 3 of Condition 19 as proposed by the Department for Transport should be modified as follows:
- a) There should be a defined time by which mitigation measures must be in place, or a condition that no trains (passenger or other) will run before the noise barrier wall is erected.
 - b) All teaching staff at Wendlebury Gate riding school are female and so the speech intelligibility level in the condition should be based on adult female speakers.
 - c) The riding school routinely instructs non-native listeners. Therefore BS EN ISO 9921:2003 Annex A paragraph A.6 applies (document CRCL/INQ/37) and condition 19 should be amended accordingly.
 - d) Condition 19 requires an assessment based on a wind speed of less than 5 metres per second. Of 16 forecast wind speeds at Bicester Station for the period 21 May to 28 May 2012, 11 speeds were 5 metres per second or more. The condition should be revised in consultation with an independent acoustics expert, and it should take account of windier months than May.
 - e) BS EN ISO 9921:2003 paragraph 5.3 says "In situations of a relaxed type of communication ... which takes place over a longer period of time [than critical situations] a good level of intelligibility is recommended allowing for a normal vocal effort." This is the situation in riding instruction. Lessons typically last for up to two hours. The BS shows in its Table 1 that this level of continuity requires a minimum intelligibility rating of "Good". "Prolonged normal communication" is a good description of a typical lesson. The condition should be amended accordingly.
- 5.10.2 The changes described in the previous paragraph are necessary to maintain the exemplary safety record of Wendlebury Gate Stables.

Other Matters

- 5.10.3 Various matters beyond the remit of the re-opened inquiry, including construction noise and vibration, and the Orange route, were raised on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw.

5.11 **Mrs Rosemary Harris** (Obj 213)

Oxford Meadows SAC

- 5.11.1 Chiltern's traffic modelling shows the scheme to increase car traffic on the A40/A44 roads and to reduce traffic on the A34. Since traffic is expected to reduce there, it would be irrational to propose the assessment of air pollution in the SAC on the basis of traffic flows on the A34. This illustrates how potentially unreliable and inappropriate the required future environmental assessments may be.

Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 5.11.2 In respect of bats, the Secretary of State appears to be under the impression that should a bat licence be approved in principle irrespective of what the bat licence covers, that this would remove any impediment to authorising the scheme. That is not the correct test. It is not within the Secretary of State's powers to authorise a scheme to go ahead which would place the applicant and other train operators at risk of engaging in criminal activity.
- 5.11.3 Following the finding of a dead bat, killed by a train in Wolvercot Tunnel, Chiltern can no longer claim that there is no evidence that trains in the tunnel will not injure or kill bats. The licence as proposed does not cover the deliberate killing of bats by operating trains through the tunnel. Nor does the licence cover disturbance to bats by placing lights close to their roosts (which delays bats foraging for food and risks their starvation, and which actually would prevent bats leaving the tunnel when a train is passing). There is no assessment of the disturbance to bats by the frequency of operation of the deterrent lighting system and their ability to adapt to this torturous regime over a period of time.
- 5.11.4 In August 2007 amendments were made to the Habitats Regulations. The majority of the defences initially put into the Regulations were removed. This included the "incidental result defence" which applied to acts which could constitute an offence but were the incidental result of an otherwise lawful activity and could not reasonably have been avoided.

Noise and Vibration

- 5.11.5 When final decisions are being made about the mitigation of noise and vibration, Mrs Harris will have no opportunity to make representations or to be consulted. This leads to uncertainty as to her future quality of life and her right to quiet enjoyment and ability to have enough sleep at night, and breaches the Human Rights Act.

Other Matters

- 5.11.6 Mrs Harris' representations included various matters beyond the remit of the re-opened Inquiry: construction-related noise and vibration, current

noise from trains, the regulations regarding speed limits for trains, and the business case for the scheme.

5.12 **The Wolvercote Commoners Committee** (Obj 321)

Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 5.12.1 The proposed mitigation lighting system is completely inadequate because it has not been tried before, the testing took place over only 4 days, only one train passed through the tunnel during the testing, the lights will attract flying insects during the summer and that will draw bats into the tunnel to feed, and the lights will stop bats from leaving their roosts. The 40% of bats found to not leave the tunnel when the lights come on would be at risk of serious harm. Such a high failure rate risks extinction of the bat colonies within days or weeks. Approval for granting a licence for the disturbance and deliberate killing of bats while operating trains through the tunnel should therefore be a pre-requirement of approving the scheme.

Condition 19

- 5.12.2 The local authority is insufficiently resourced to undertake the actions required of it by this condition.
- 5.12.3 The term "reasonably practicable" is not defined and so the local authority would be unable to enforce any claim by Chiltern as to what is "reasonably practicable" without the risk of expensive and lengthy court action, which the local authority might not be prepared to undertake.
- 5.12.4 Circumstances might change in future: the line might become busier than currently planned by Chiltern, background noise levels might fall, trains on the line might travel faster than currently proposed. The mitigation measures should therefore be properly and adequately designed and put in place from the outset. But the condition as currently worded does not do this and so it is not precise, relevant or enforceable.

Condition 31

- 5.12.5 The draft condition precludes development on parts of the scheme abutting the Oxford Meadows SAC unless an air pollution assessment has taken place. That is wrong, because other sections of work not abutting the SAC could cause harm to the lowland hay meadow, and because Chiltern might decide not to carry out any "development" to the section which abuts the SAC and thus not require air pollution to be assessed or mitigated, yet the line could operationally take an increased train service which would cause harm.
- 5.12.6 Chiltern has not shown what the mitigation measures could be, or how they would be implemented when first needed or in the long term. The local planning authority is not expert in the management of the SAC and might ignore the advice of Natural England. It is not evident that permission to enter land to carry out remedial works has been sought. The air quality should be properly tested and recorded now and further assessed against the effects of recent projects and proposed plans to ascertain the cumulative effects before the scheme is approved.

Condition 32

- 5.12.7 The local authority might not have access to sufficient information and, although not being experts in the field of air quality relating to SSSIs, would be expected to make decisions without any reference to or agreement with Natural England. It needs to be explained in which Local Government Act a local authority has been delegated responsibility for the protection of SSSIs, and what powers a local authority has to force the owners or managers of land to carry out air quality mitigation work caused by the developer of adjacent land. Alternatively, the future arrangements to ensure effective implementation of the condition should be explained.

Other Matters

- 5.12.8 The Committee's representation included one further matter, beyond the scope of the re-opened Inquiry: the adequacy of the Environmental Statement.

5.13 **Mr Sean Feeney** (Obj 123)

- 5.13.1 Mr Feeney's proof of evidence states that he holds a Bachelor of Science honours degree in Physics with Astronomy, has no professional qualifications and no professional experience as an ecologist.

Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 5.13.2 The licence sought by Chiltern in respect of bats at Wolvercot Tunnel would be insufficient and so an impediment to the scheme would remain.
- 5.13.3 The licence would be insufficient in the following ways:
- a) The purported light mitigation scheme must either be a licensed activity under the proposed licence (which it is currently not) or it requires a separate licence; and,
 - b) The operational phase of the scheme requires a licence from the strict protection of Article 12 of the Habitats Directive because it is foreseeable that bats will be killed in the operational phase, which would therefore constitute deliberate killing.
- 5.13.4 Lightphobic and lightphilic bats are known to use the tunnel. The purported deterrent lighting system will increase the risk of mortality to bats from train collisions because some lightphobic bats swarm in the tunnel and lightphilic bats are attracted to lit areas when foraging for insects; therefore, the lighting system is itself a licensable activity. And the lighting system would disturb the most lightphobic bats and fragment their habitats by making the Tunnel unusable as a swarming site, commuting tunnel, roost and hibernaculum and it is therefore a licensable activity.
- 5.13.5 Research by SETRA (document Obj123/42, *Bats and Road Transport Infrastructure*) has found that transport infrastructure is responsible for the death of a large number of bats, by collision with traffic; and the laws of physics do not distinguish between trains and road vehicles.

- 5.13.6 Method Statement 2 of the licence application provides evidence of the failure to “baseline” the bat population affected by the scheme because baseline surveys and monitoring are proposed. ODPM Circular 06/2005 (CD/5.20) says that to establish the presence or otherwise of protected species, and the extent that they may be affected by the proposed development is essential before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The unlawfulness of leaving surveys to conditions, in the context of EIA development and failure to put survey data into an environmental statement was confirmed by the High Court in *Hardy* (R v Cornwall County Council ex parte Hardy [2001] Env. L R 25). The evidence of Natural England is that the favourable conservation status of local bat populations will be maintained; but it is impossible for Natural England to make such a judgement without the results of the further surveys yet to be undertaken.

Condition 19

- 5.13.7 There is now no evidence of what the main effects in Oxford of the scheme due to vibration would be, and without such data it is impossible to be certain that any mitigation which is proposed in the future would be effective since what is to be mitigated is unknown.

Conditions 31 and 32

- 5.13.8 The draft condition 31 does not allow for the practice of train operators to park trains, with their diesel motors running, on the railway south of the Walton Well Road car park or the effect that the associated emissions have on the SAC.
- 5.13.9 Document Obj123/72 is a report prepared by the Transport Research Laboratory for Oxford City Council: *A City-Wide Road Traffic Emission Model For Oxford – Scoping Report*. It was published in 2012. The Council is concerned that air pollution models are underestimating concentrations, and that deficiencies in the modelling of traffic and emissions are partly responsible. Section 3.11 of Obj123/74 lists 17 factors identified by the report which point to flaws in the modelling of road traffic emissions undertaken by Chiltern. Chiltern has not applied the best scientific knowledge in the field; rather, it has used old modelling software, and they have failed to use its full functionality, which is necessary for boundary layer modelling, and for predictions of nitrogen deposition. Oxford Meadows wind site data have not been used and the data that is used is over 5 years old.
- 5.13.10 The meadows and pastures are not a closed system for nitrogen. Unless stock are fed on additional feed (which is controllable via the management plans) the depasturing stock will not be a source of nitrogen. Stock take up nitrogen from the land and retain some of it as protein. Depasturing will ultimately be beneficial in maintaining the meadows as neutral unimproved grassland by removing excess nitrogen inputs as nitrogenous protein.
- 5.13.11 An appropriate assessment is necessary because reasonable doubt exists as to the absence of significant adverse effects on Oxford Meadows SAC.

Other Matters

- 5.13.12 Mr Feeney's representations included further matters, beyond the scope of the re-opened Inquiry. Those matters included:
- The adequacy of the Environmental Statement and the effect of that on what Mr Feeney describes as his Aarhus right as a member of the public to effective participation in environmental decision making.
 - That proposed conditions 31 and 32 breach the principle (in *Wells*) that environmental assessment must, in principle, be carried out as soon as it is possible to identify and assess all the effects which the project may have on the environment.
 - That insufficient regard has been had to the in-combination effects of the scheme with other proposals on the Oxford Meadows SAC.
 - That the assessments of the scheme's effects on the Oxford Meadows SAC and on the Hook Meadow and Trap Grounds SSSI are insufficiently robust.
 - Referral of the allegation that Chiltern have found bat corpses to Thames Valley Police.
 - That site extinction/loss of extent of lowland hay meadows MG4 could be partial destruction of the SAC; the duty to avoid deterioration of a SAC; the Natura 2000 data form and UK documents under Article 17; Chiltern's failure to provide conservation objectives for Oxford Meadows SAC and SSSIs and the adequacy of the evidence given regarding conservation objectives there.
 - References to international scientific studies of the effects of nitrogen on biodiversity.
 - The precautionary principle and the European principle of proportionality under Article 6 of the Habitats and Species Directive.
 - The bad and unfavourable range of creeping marshwort *apium repens* in the UK.
 - The Secretary of State has no power to make the TWA Order, because duties under European law have been breached.
- 5.14 **Additional Matters Raised In Objections Made By Written Representations**
- 5.14.1 **Wolvercote Primary School** (Obj 48) expresses concern at what it describes as the threat of unreasonable levels of noise, and suggests mitigation measures.
- 5.14.2 **Nicola Blackwood MP** (Obj 312) considers that Condition 19 should be clarified by the inclusion of accurate definitions of the terms "reasonably practicable" and "significantly impede". The parameters should be established by which it should be determined that a measure is not "reasonably practicable" and the decision should be subject to an independent objective assessment of what is achievable. There should

be guidelines to accurately define an “equally effective substitute measure” and, where no such substitute can be found, steps should be established to ensure that the undertaking to ensure effective noise monitoring is not affected by the resulting omission.

- 5.14.3 Mitigation measures are also suggested by **Mrs Mary Hardy** (Obj 273) and **Joanna Dyson** (Obj 324).

6 THE RESPONSE OF CHILTERN RAILWAYS

The material points were:

6.1 Whether The Proposed Mitigation For Bats Is Sufficient To Remove The Likely Impediment

- 6.1.1 The matter before the re-opened Inquiry was whether the mitigation measures proposed by Chiltern since the close of the first part of the Inquiry and agreed by Natural England to protect bats at Wolvercot Tunnel near Oxford are sufficient to remove the likely impediment to implementation of the scheme. The evidence confirms that this impediment, which was the want of a European Protected Species Licence, has been removed.
- 6.1.2 Several objectors advanced the argument that the licence to be granted would be insufficient, since it would not allow the deliberate killing of bats. The following can sensibly be noted.
- 6.1.3 Part 3 of the Habitats Regulations 2010 (CD/5.30) provides for protection of species. By regulation 41(1)(a) a person who deliberately kills any bat is guilty of an offence. This is a criminal offence. An offender is liable to be sent to prison.
- 6.1.4 By regulation 41(1)(b) a person who deliberately disturbs bats is guilty of a criminal offence. It must be noted that the language of the two sub regulations is deliberately different. 41(1)(a) is concerned with deliberately killing individual specimens. On the other hand, 41(1)(b) is concerned with deliberately disturbing bats in the plural. This distinction reflects the European directive although in one respect the English regulations go further than the directive. The latter concerns itself with killing bats in the wild whereas the former is not so limited.
- 6.1.5 It can here be noted that the starting point for consideration must be the Regulations but one can refer to the Directive to help interpret them. The difference to which attention has been drawn here plainly suggests that a restrictive or strict interpretation would be put on the words in the Regulations. This is consistent with English law which always construes penal provisions strictly. Accordingly, it is clear that 41(1)(a) would not be widely construed.
- 6.1.6 It should next be noted that the Regulations provide for surveillance of conservation status of habitats and bats. This is done by regulation 48. It should also be noted that regulation 51 provides for the monitoring of incidental killing of bats. Records of instances have to be maintained of which the appropriate conservation body, i.e. Natural England, are aware by virtue of the required surveillance. The same is true across the European Union where the respective conservation bodies have a similar

role to that of Natural England.

- 6.1.7 It is appropriate here to notice the evidence of Dr Robertson which was to the effect that there are bats across the whole of the European Union and very many miles of railways with a multitude of tunnels. Obviously, some tunnels are busier than others and some railway services are sparse. Dr Robertson, who has done an immense amount of research, made plain that she had not identified any record of bats being killed by trains. Thus, the demanded surveillance and the requisite monitoring has, across Europe, produced nothing. In other words we can be sure that the running of trains, whether through tunnels or elsewhere, simply does not have the adverse effect suggested by Dr Robertson and others.
- 6.1.8 It is also clear, quite apart from incidental death of bats being expected, that if a bat chanches upon a train, whether in a tunnel or not, and, thereby, dies no offence is committed.
- 6.1.9 In *R (Morge) v Hampshire County Council*, (2011) UK SC 2 (document CRCL/INQ/80), the Supreme Court had to consider, as did the Court of Appeal before them, the relevant predecessor regulations. In the Court of Appeal, the judgment was given by Ward LJ. In the Supreme Court, Lord Brown said that Ward LJ's judgment was one of infinite care and thoughtfulness.
- 6.1.10 Ward LJ said that a motorist could not be prosecuted for breach of regulation [41(1)(a)] for deliberately killing a bat. It was also, so Ward LJ said, inconceivable that his driving in an area inhabited by bats could possibly constitute deliberate disturbance. It should be noted that the context was a circumstance of bats flying low at risk of being struck by passing buses.
- 6.1.11 The Supreme Court upheld the decision of the Court of Appeal whose judgment had been given by Ward LJ. There was a difference between the two courts but it was not in respect of the preceding matter. It follows that the proposition, extrapolating from but a single dead bat possibly struck by a train, that the running of train services by Chiltern Railways through a railway tunnel, where bats happen to have been and for whom protective measures including lights are taken, constitutes a crime, is wrong.
- 6.1.12 Mr Feeney has sought to say that Natural England are acting irrationally in saying they will grant a licence. It could be asserted that an impediment still existed because Natural England could be challenged if they granted a licence. There are certain difficulties with this argument.
- 6.1.13 It may be accepted that a grant or a failure to grant a licence by Natural England is capable of being considered on an application for judicial review. Such a grant or failure to grant could then be set aside, if Natural England had made an error of law. The Court could not itself grant or refuse a licence. If there were an error of law justifying action by the Court then the matter would be remitted to Natural England for Natural England to make a decision in accordance with the law.
- 6.1.14 One of the grounds for judicial review is irrationality. In other words if the decision maker takes leave of his senses. Thus, in order for there still to be an impediment it has to be shown that although Natural England

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- say they will grant a licence they would, if they did so, be attacked by way of judicial review, that such attack would succeed and that when the matter went back to Natural England they would then refuse a licence. Each of these propositions is highly questionable.
- 6.1.15 One should not assume a legal challenge; still less should one assume a successful legal challenge. Further, there is nothing to suggest any basis for such a challenge. The evidence is of wide and careful consideration by Natural England. Further, one cannot assume that if the matter were remitted to Natural England they would not grant a licence. The evidence is that they would.
- 6.1.16 In respect of the bat casualty from 2012, the bat had suffered rib damage and it appeared to have been struck by a train. This is not as definitive a conclusion as some objectors draw, that it "had been hit by a train". The casualty found in May 2012 was the only one found during the 2012 surveys (12 days of casualty surveys in the tunnel and adjacent cuttings up to 11 June), which does not support the conclusion of Dr Robertson that the current train services kill at least one bat every two weeks when bats are active.
- 6.1.17 Neither Chiltern nor Natural England accepts Dr Robertson's quantification of the risk to bats associated with the scheme. The lighting system is specifically intended to modify bat behaviour to remove the risk of collisions with trains, and was based on a trial with sensible "train" frequencies. Pressure levels in the tunnel will remain well below those documented as potentially causing barotrauma effects.
- 6.1.18 In the absence of trains, the trials found 60% of bats moved out of the tunnel or took shelter in existing crevices when the lights came on. This increased to 68% when trains were running. New night roost shelters will be provided above the lights to provide concealed sites that bats remaining in the tunnel can find quickly and easily, to avoid significant effects from trains passing through. It is therefore wrong to assume that, because the lights moved only 60% of the bats out of the tunnel, the remaining 40% would necessarily be affected.
- 6.1.19 Disused tunnels are typically less well-maintained than operational tunnels and so holes and crevices which can be used by roosting bats are more frequent. Conditions in a tunnel are likely to be more stable because it is disused. Disused tunnels are more accessible to surveyors and so records of bats there can more readily be kept. In contrast, operating tunnels are properly maintained and so the opportunities for bats are likely to be less. Wolvercot Tunnel is already an operational tunnel.
- 6.1.20 The very small number of bats that roost in Wolvercot Tunnel all do so in deep drain holes and crevices and will not be swept out of them by the effects of passing trains. No surface-roosting bats use Wolvercot Tunnel. The additional shelters that will be provided for bats will provide protection for them against the effects of turbulence from passing trains.
- 6.1.21 On average the deterrent lights would be switched on for only one minute for every passenger train, and two minutes for every freight train. The system would operate only between dusk and dawn, and only if the air temperature is not less than 2 degrees. Such short periods of
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illumination are unlikely to attract significant numbers of insects or bats to the area, especially given the extensive continuous illumination in the surrounding areas.

- 6.1.22 The risk of air pollution impacts on bats is low as the tunnel is only 130 metres long and so the train will spend only around seven seconds in it. It would be a rare occurrence for two trains to be in the tunnel at the same time, as passenger trains are not scheduled to pass there, and the tunnel is also orientated to the prevailing winds, which allows good ventilation and encourages dispersal of any emissions.
- 6.1.23 The Secretary of State has accepted the overall case for the scheme, and that there is "no suitable alternative" to the works and operations at Wolvercot Tunnel.
- 6.1.24 Chiltern's position can be stated simply. All of the "commitments" that are relevant to the bat licence are set out in the licence application documents which, as a matter of policy by Natural England, become part of the licence. Any licence exists, and is enforceable, in its own right through Natural England. Any planning condition of the form previously proposed by the Inspector is not necessary. Chiltern's discussions with Natural England about the merits of a planning condition have been solely to reinforce the commitment already made by Network Rail to the long term maintenance and operation of the lighting system.

6.2 **Condition 19**

Role of the Local Planning Authority

- 6.2.1 Under the provisions of the Noise and Vibration Mitigation Policy (CD/1.29/2.1) and Condition 19, the role of the local planning authority is limited to the approval of the details of the noise and vibration assessment, mitigation and monitoring as submitted by Chiltern. Responsibility for the noise and vibration monitoring lies with Chiltern, not the local planning authorities. Chiltern Railways has already committed to fund an independent expert to report to the local planning authorities on the robustness of noise and vibration schemes of assessment. The local planning authority will be able to approve the appointment of that independent expert.
- 6.2.2 Each local planning authority has a duty to discharge and enforce the planning conditions. Section 187A of the Town and Country Planning Act 1990 provides for enforcement of a planning condition by a breach of condition notice, which can be used alongside an enforcement notice. It is entirely appropriate that these conditions fall to be enforced by the local planning authority. Neither Cherwell District Council nor Oxford City Council has raised any concern about the form of the condition or its enforcement. Chiltern is satisfied that they will carry out their duties, assisted by the independent expert, in the discharge and enforcement of this condition.

National Planning Policy Framework

- 6.2.3 Paragraph 123 of the National Planning Policy Framework ("the Framework") says that planning decisions should aim to avoid noise giving rise to significant adverse impacts on health and quality of life and

aim to “mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions”. The threshold levels adopted in the Noise and Vibration Mitigation Policy are consistent with tried and tested planning guidance in PPG24 that has now been withdrawn with the effect of facilitating development to come forward with a lower burden of noise issues. Although the Framework replaces planning guidance including PPG24, no new technical guidance on acceptable noise and vibration levels has been produced or is expected. PPG24 therefore remains the relevant guidance. It is based on international guidance as implemented in the UK. The standards that have been adopted are also consistent with other rail schemes including recently-approved schemes that were examined at Inquiry.

Noise Standards

- 6.2.4 Although the World Health Organisation’s “Night Noise Guidelines for Europe” does contain a night time noise guideline of 40 dB(A), the WHO guidance, in general, does not take into account the practical consequences of adopting such levels as planning standards; nor does the guidance describe how they should be applied to the development of transport schemes. This is a general weakness of WHO documents, which do not consider the practical consequences were the stated guideline values to be imposed as a rigid standard. A review of the WHO guideline documents, published in 1998 by the National Physical Laboratory for the DETR (extract at Appendix 1, document CRCL/R/RI/Obj106) found that:

“The percentages [of the population] exposed above the WHO guideline values could not be significantly reduced without drastic action to virtually eliminate road traffic noise and other forms of transportation noise (including public transport) from the vicinity of houses. The social and economic consequences of such action would be likely to be far greater than any environmental advantages of reducing the proportion of the population annoyed by noise. In addition, there is no evidence that anything other than a small minority of the population exposed at such noise levels find them to be particularly onerous on the context of their daily lives.”

- 6.2.5 The CALM network is an EU funded research and innovation organisation, which amongst other activities researches noise emission reduction (ie. reducing noise generated at source through product design standards). Whilst this research may be translated into noise benefits in the long term through changes to railway technology, there appears to be no basis for its consideration on an individual railway scheme. Mrs and Mrs McClements refer to the CALM network’s paper ‘Research for a Quieter Europe in 2020’ dated 1997. This has since been updated under the same title but dated 2004. This document refers to the principle cornerstones of current and future noise policy in Europe being the Environmental Noise Directive (END) (OBJ/106/4/H) and emissions-related directives. It identifies research which it feels is needed to inform the future development of emission directives, but does not provide specific recommendations that could be applied to individual railway projects.

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- 6.2.6 Mr and Mrs McClements also refer to the CALM network's publication "Good Practice Guide on Noise Exposure and Potential Health Effects" in their proof of Evidence (OBJ 106/4/A) at paragraph 2.12. However, this is a publication produced by the European Environment Agency (EEA). It is noted that the EEA guidance does refer to noise guidance by the CALM Network which proposes values suggested by the Objectors. However, these are referred to as an "optimal targets" which are defensible in the context of EU ambitions to reduce noise exposure of the overall population. This type of guidance is appropriate for considerations at governmental/European level regarding the appropriate standards that should be considered in regard to long term Action Planning as required by the Environmental Noise Directive (END) to prioritise strategies to reduce the exposure to noise of the general population. However, there is no suggestion in these documents that there is a basis for their use to assess the effects of individual railway schemes.
- 6.2.7 Objectors also refer to the END and suggest that it "*requires Member States to establish common assessment methods for environmental noise and a definition for limit values in terms of harmonised indicators for the determination of noise levels*" in paragraph 2.24 of OBJ 106/4/B. However, this is a requirement for Member States to adopt a harmonised approach to strategic noise mapping of major transport links and agglomerations. The Order scheme does not fall under the requirements of the END.
- 6.2.8 The 45 dB(A) threshold adopted by Chiltern Railways in the NVMP (CD/1.29/2.1) is derived from the WHO standards that are referenced in UK planning policy guidance PPG 24 (CD/3.4, including Annex 2 *Noise Exposure Categories: Explanation Of Noise Levels*), and these are used to set the stringent standards in the NVMP (CD/1.29/2.1). The approach that Chiltern takes to setting noise thresholds and in their application is congruent with PPG24. It is not, as some Objectors suggest, out of date or inadequate, but provides a sensible basis for noise mitigation which takes appropriate account of existing noise conditions, which arise from road traffic and other sources, and the practicality of applying limits that would not place unjustifiable limits on development or improvement of essential infrastructure. The National Physical Laboratory, in a report made in 1998 (CRCL/R/RI/OBJ106 Appendix A), notes that the value of 45 L_{Aeq} night-time outdoors is equivalent to the 1995 World Health Organisation guideline value of 30 L_{Aeq} night-time indoors allowing 15 dB attenuation from outdoors to indoors for a partially open window.
- 6.2.9 Objectors challenge the use of L_{Aeq} as a basis of noise assessment when used alone do so on the assumption that railway noise is not continuous. The standards in the NVMP (CD/1.29/2.1) are based on the standard noise assessment metrics that are used to consider noise in the UK and are entirely appropriate for the type of assessment that is being undertaken as detailed in Section 1.33 of CRCL/P/9/R/A. L_{Aeq} is sensitive to changes in peak noise and is recommended for time varying noise sources such as train noise. Notwithstanding this, paragraph 2.7 of the NVMP (CD/1.29/2.1) also includes a Noise Impact Threshold in terms of the maximum noise level index L_{Amax} .
- 6.2.10 Objectors also comment on noise criteria adopted for the Crossrail
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project. However, the criteria mentioned (in paragraph 2.27 of OBJ 106/4/A), which are the maximum noise limits of 40 dB $L_{Amax,s}$ in residential buildings and 30 dB $L_{Amax,s}$ in studios, apply to groundborne noise and not airborne noise. Groundborne noise is an important issue for sections of underground railways as are required in the Crossrail project, but is a secondary issue for surface railways where the airborne noise path forms the dominant factor as noted in the Environmental Statement (Section 6.2.2 page 6-8 of CD/1.16). It is not appropriate to compare airborne noise from surface railways with these standards as they have distinctly different characteristics and groundborne noise standards are significantly lower than would be required for airborne noise to reflect the likely reaction levels to this specific type of noise. They are also only applicable indoors whereas airborne planning standards are set outside the building.

- 6.2.11 The airborne noise policy for Crossrail is considered in Chiltern's response to issues raised by the Wolvercote Commoners (OBJ321/3) in paragraphs 3.109 to 3.111 of CRCL/P/9/R/A. The standards applied in the NVMP (CD/1.29/2.1) are no less stringent than the Crossrail criteria. Both seek to mitigate impacts through at-source means and barriers, at noise changes of 3 dB(A). In areas where baseline noise levels are high (such as north Oxford, which is of concern to the objectors) it is the noise change which determines the noise impact and the need for mitigation under both the scheme proposal and Crossrail. Therefore the Crossrail scheme would not lead to more mitigation than would have been provided through the scheme under the same circumstances in most cases. The baseline noise along the scheme route varies between urban and rural and it would be wrong to apply a mitigation scheme, which only envisages high ambient noise levels, to a situation such as the scheme.

"Reasonably Practicable"

- 6.2.12 The term 'reasonably practicable' is often used in Transport and Works Act Orders, Development Consent Orders and planning conditions as a means of defining the practicality of the provision of certain measures and so its use in relation to the NVMP [CD/1.29/2.1]. and planning conditions is commonplace. In paragraph 2.2 of the NVMP Chiltern Railways made a commitment to use 'Best Practicable Means' in the design of the railway and the noise mitigation to avoid significant noise and vibration impacts at existing receptors. In determining what is 'reasonably practicable', Chiltern Railways will have *'regard, among other things to local conditions and circumstances, to the current state of technical knowledge, financial considerations and compatibility with safety and safe working condition'*. This is as set out in section 72 of the Control of Pollution Act 1974. In addition the application of the term will be subject to the added safeguards provided by Condition 19(12).
- 6.2.13 The initial design of mitigation measures that underlies the evidence before the Inquiry has resulted in no instance where mitigation measures needed to meet the Noise and Vibration Mitigation Policy have been found not reasonably practicable.

Wolvercote Primary School

- 6.2.14 At Wolvercote Primary School, the predicted noise level due to trains in

Phase 2 would be 51 dB $L_{Aeq,16hour}$ without mitigation, the overall predicted external noise level would be 52 dB $L_{Aeq,16hour}$ without mitigation and the increase from existing noise levels would be 7 dB. Predictions have not been calculated for Phase 1, but would be lower. The predicted noise levels are below the Noise Impact Thresholds in the Noise and Vibration Mitigation Policy. The NVMP applies a standard of 55 dB $L_{Aeq,16hour}$ at external facades, which provides for reasonable amenity inside and outside existing schools. Should the further assessment required under draft Conditions 19(9) or (10) show that the threshold would be exceeded, then Chiltern would apply mitigation in accordance with the Condition and the NVMP.

Individual Circumstances

- 6.2.15 It would not generally, be appropriate or necessary to consider the personal circumstances of every resident in implementing the Noise and Vibration Mitigation Policy. The standard being used here, as for all transport schemes, is based on external facade noise levels and the known noise attenuation that can be achieved by barriers and/or noise insulation. These provide for the reasonable enjoyment and amenity inside residential properties. Any alternative approach that necessitated detailed consideration of individual circumstances, which can, of course change over time or when new residents move in, would clearly be very difficult to implement and is not in accordance with normal good practice or the guidance.

Wendlebury Gate

- 6.2.16 Since mitigation at Wendlebury Gate and elsewhere is related to noise from the train, its installation before the service starts is sufficient. The position regarding audibility advanced by the Offords was founded on a misconception: that we should concern ourselves with a situation of continuous speech over a continuous period of time rather than, as is plainly the case, with those short periods where trains are passing. This means that there was a failure to appreciate that the condition adopts the correct approach, in addressing, as it does, safety. One is only possibly concerned with that necessarily chance moment of a train passing when some message of significance needs to be conveyed. This is properly catered for by the condition as presently drafted. The same point also emphasises that it would be unnecessary to make any adjustment for the non native rider.
- 6.2.17 The requirement in draft Condition 19 that assessment of communication should take place when the wind speed is less than 5 metres per second arises from BS4142:1997 *Method For Rating Industrial Noise Affecting Mixed Residential And Industrial Areas* (CD/5.14). This is a standard requirement of such tests, not related to the site.

Freight Trains

- 6.2.18 Although an objector claims to the contrary, the Noise and Vibration Mitigation Policy deals not only with passenger trains but also with freight trains; its paragraphs 1.1, 1.6, 1.9, 2.7, 2.8 and 2.9 are examples of this. Where the Contractor (BAM Nuttall) is required to provide noise mitigation it will have to comply with the Noise and Vibration Mitigation Policy and the Planning Conditions. It is common practice for contractors

to consult specialist noise consultants and contractors where necessary in such circumstances.

Vibration

- 6.2.19 The Noise and Vibration Mitigation Policy seeks to limit vibration levels to the thresholds in BS6472. Paragraph 2.10 says that, where existing vibration levels already exceed either of the thresholds in the Policy (see X/20, 4.8.26), mitigation will be considered where the change in vibration dose value is 50% or more as a result of the Phase 1, 2A and 2B works. It is reasonable to require a significant change in ambient vibration (due to the scheme) before mitigation is provided, and this approach is similar to that applied to other railway schemes.

6.3 Conditions 31 and 32

- 6.3.1 The whole scheme has been the subject of a Habitats Regulations Screening Assessment, reported in CD/1.18. The Inspector, in paragraph 9.10.18 of X/20, confirmed that the scheme "is not (in the terms of the Conservation of Habitats and Species Regulations 2010) likely to have any significant effect on the integrity of the Oxford Meadows SAC, having regard to the conservation objectives of the site". In his paragraph 9.10.21 the Inspector found that there is no "plan or project" in combination with which the scheme proposals should be assessed in respect of their combined effect on the SAC". Consequently no appropriate assessment by the Secretary of State is required, and the provisions of Article 6(4) of the Habitats Directive are not relevant.
- 6.3.2 The use in the Environmental Statement of wind data from Brize Norton is criticised by objectors. There is no evidence (and objectors produce none) that the annual pattern of wind speed and directions has changed in recent years or is changing. The long term data from Brize Norton, which is the nearest Meteorological Office principal weather station, are entirely applicable to Oxford Meadows and were used in the assessment.
- 6.3.3 It would be incorrect to contend, as some objectors do, that a requirement for further assessment (of environmental effects) set out in a condition is evidence of an inadequate Environmental Statement. It may, on occasion, be entirely appropriate to impose such a condition on a precautionary basis. The role of the Environmental Statement is to identify the likely significant (adverse) effects, which are those likely to remain after mitigation. It is entirely appropriate that, as issue or evidence emerges after the publication of an Environmental Statement, this is considered by the applicants and brought to the attention of the decision maker. There is no requirement under the Regulations or to meet the Aarhus Convention that these be subject to wider public consultation.

Air Dispersion

- 6.3.4 The ADMS Roads v3.0.0 dispersion model was used in the assessment of the scheme's effect on air quality. The model uses the latest available algorithms. It was developed specifically for the UK and provides the best scientific knowledge in the field. Document CRCL/RI/19 provides further information.

Tying Conditions 31 and 32 to the Works

- 6.3.5 Tying Conditions 31 and 32 to the works proposed to take place adjacent to the Oxford Meadows SAC, as is proposed in those draft Conditions, is logical and proportionate. Any oxides of nitrogen emitted by the trains only have the potential to increase concentrations of those oxides in the atmosphere for a relatively short distance (of the order of 1 to 2 kilometres) from the railway. There is no evidence that, even at the concentrations predicted close to the railway, there would be any adverse effect on the plant communities.
- 6.3.6 The former Condition 33 (X/20, Appendix 1) precluded any development of the Order scheme in advance of approval of a scheme of necessary mitigation of the proposal's effects on the SAC lowland meadow habitat. Chiltern favours an alternative approach in which only the parts of the scheme near the SAC would be subject to such a condition, and that is reflected in the draft Conditions before the re-opened Inquiry. Chiltern notes the theoretical possibility that, with the alternative arrangement it prefers, land might be compulsorily acquired and built upon in one part of the scheme only to find that those works were in vain because a prohibition on building another part of the scheme could not be lifted (as a result of failure to satisfy a Grampian condition on that other part of the scheme). But in reality there is no question of such a situation arising because it is not reasonably possible that Chiltern would so fail. A similar approach had been used successfully on other comparable schemes. Nevertheless, Chiltern would reluctantly accept a "full" Grampian condition if the Secretary of State was minded to impose one.

6.4 **Human Rights**

- 6.4.1 The Objectors state that Condition 19 and the NVMP [CD/1.29/2.1] provide inadequate safeguards to ensure their right to adequate sleep, under the European Convention on Human Rights. It is argued that, even with mitigation in place, there is no guarantee that there will be no adverse effect on their sleep.
- 6.4.2 The night-time standards adopted in the NVMP [CD/1.29/2.1] are based on standards for disturbance at night that have been adopted previously into UK planning guidance (e.g. PPG24) and are consistent with statutory requirements regarding noise in the UK. Chiltern Railways Rebuttal Proof of Evidence to the Evidence of Dr C Robertson [CRCL/R/OBJ234] from the Inquiry in 2010/11 dealt with human rights and paragraph 4.3 concludes that "the Order Scheme complies with Paragraph 2 of Article 8 of the European Convention on Human Rights (which is Schedule 1 to the Human Rights Act), and a robust assessment of alternatives has been undertaken. Chiltern Railways consider that any adverse effects of the Order Scheme on the Objector is, in all the circumstances, outweighed by the wide ranging public benefits that the scheme will bring."

6.5 **Other Matters Raised By Objectors**

- 6.5.1 Chiltern's responses to matters raised by objectors which are beyond the

scope of the re-opened inquiry are set out in its Rebuttal documents, the Proofs of Evidence of its witnesses, and other written material submitted to the Inquiry.

- 6.5.2 Document CRCL/RI/26 sets out the draft planning conditions in Annex A to the Secretary of State's letter dated 24 January 2012, with amendments proposed by Chiltern Railways. The document is dated 1 June 2012.

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7 CONCLUSIONS

Bearing in mind the submissions and representations I have reported, I have reached the following conclusions, reference being given in brackets [] to other paragraphs where appropriate. Because the Inquiry first closed on 28 January 2011 [1.1], references to events after that date are references to evidence newly considered by the re-opened Inquiry.

7.1 General Matters

Environmental Assessment

7.1.1 The Environmental Statement is set out in the following documents:

- Volumes 1 to 4 (Documents CD/1.15, CD/1.16, CD/1.17 and CD/1.18).
- Non-Technical Summary (Document CD/1.20).
- Addendum to the Environmental Statement (Document CD/1.22).
- Second Addendum to the Environmental Statement (Document CD/1.22/1).

7.1.2 The Environmental Statement and other environmental information, including comments and representations made by statutory consultees and other parties, have all been taken into account in the preparation of this report, as has subsequent evidence given at the Inquiry regarding the environmental effects of the Scheme.

7.2 **Whether the mitigation measures proposed by Chiltern since January 2011 and agreed by Natural England to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme in this regard, identified at paragraph 9.17.11 of the Inspector's report of 15 July 2011.**

7.2.1 Paragraph 9.17.11 of document X/20 refers to a licence or licences that would be issued in respect of bats under The Conservation Of Species And Habitats Regulations 2010 ("a Licence"). It identifies one element of the scheme – construction works in Wolvercot Tunnel – for which there was no dispute that a Licence would be needed. The same paragraph identifies a second element of the scheme for which the evidence then available indicated a Licence might also be needed: the bat mitigation scheme which had been proposed by Chiltern (which includes the deterrent lighting system).

A Licence Associated With Construction Works In Wolvercot Tunnel

7.2.2 In its representations made to the Inquiry in 2010 and 2011, Natural England objected to the scheme on grounds which included the scheme's effects on bats in Wolvercot Tunnel. Natural England's evidence was that a separate licence would not be required for the operational stage of the development but, in order to obtain a licence for the construction phase, Chiltern must show that the action would not be detrimental to the

maintenance of the population of the species concerned at a favourable conservation status in their natural range. Because of the lack of evidence on that point, a licence application made on the basis of the information then before the Inquiry seemed likely to fail [X/20, 6.55.74-75].

7.2.3 After 28 January 2011, surveys and research were carried out, a licence application was made in April 2011, discussions took place between Chiltern and Natural England, and further licence applications were made in October 2011 and, finally, in January 2012 [3.1.3 to 3.1.19; 4.2.3].

7.2.4 Natural England has described the expertise it brought to bear on the matter, and the ways in which its previous concerns have been addressed [4.2.2, 4.2.4]. The deterrent lighting system provides sufficient mitigation to enable Natural England to conclude that the proposal passed the favourable conservation status test [4.2.7].

7.2.5 Natural England's evidence is that the mitigation measures proposed in respect of bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme that was identified in paragraph 9.17.11 of document X/20 [4.2.16].

A Licence Associated With The Deterrent Lighting System

7.2.6 Natural England's position on 28 January 2011 was that the proposed lighting scheme would require a Licence. Natural England did not agree that the then-untested method would provide effective mitigation [X/20, 6.55.76].

7.2.7 In the light of the further information provided by Chiltern, Natural England has found that the deterrent lighting system would not disturb the bats to such a degree that a Licence would be needed for the lights. An impact on a European Protected Species is only considered licensable if it reaches a certain threshold, and that threshold would not, in Natural England's view, be reached in this case because the lights would not affect "significantly the local distribution or abundance of the species"; nor would the favourable conservation status of the bats be affected [4.2.5 to 4.2.8].

7.2.8 Mr Feeney argues to the contrary but he is not an ecologist and brings no expert opinion to support his view; nor does his evidence address the matter of degree [5.13.1, 5.13.4]. Natural England is a body of considerable authority. It has brought specialist expertise to bear, and has applied independent review [4.2.2]. I conclude that in this matter Mr Feeney's view should attract less weight than does that of Natural England, and that no licence is needed for the deterrent lighting system.

Related Matters

7.2.9 Objectors consider that the evidence that supports the Licence application is insufficient to be reliable, and that the position taken by Natural England at the re-opened Inquiry is therefore unsafe [5.6.1, 5.7.3]. One such claimed ground is that there is a lack of baseline bat casualty data, but the licence application is clear that such surveys will be undertaken [3.1.13], and I do not find fault with that. The other is the observation of a public health professional [X/20, 6.21.1] that the evidence on which Natural England relies lacks strength, and that the

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- test should have been run continuously for three or six months because “that would be a reasonable period”. It is clearly the judgement of Natural England that the evidence that was before it when adopting its current position was sufficient, and it is not my view that the Secretary of State should dismiss Natural England’s position for the suggested, apparently arbitrary, reason.
- 7.2.10 It is also argued that Natural England’s position is unsound because some “baseline” bat surveys and monitoring are proposed in Method Statement 2, whereas ODPM Circular 06/2005 says that surveys should be undertaken before planning permission is granted [5.13.6]. But the numbers of bats of various species that would be affected by the scheme are known and included in the licence application form, while Method Statement 2 is concerned with further baseline and post-development surveys [3.1.19, 3.1.13]. Detailed surveys have already been carried out, sufficient to enable Natural England to form its conclusions [4.2.11, 4.2.12].
- 7.2.11 I have reported [6.1.13 - 6.1.15] Chiltern’s legal submission regarding judicial review capable of arising out of Natural England’s grant, or failure to grant, a Licence. This is a matter of law, upon which any necessary advice is no doubt available to the Secretary of State. For my part, I am aware of no error in law that would be made by Natural England were it to grant the licence sought by Chiltern.
- 7.2.12 It was common ground between several parties that use of the tunnel by trains as proposed for the scheme could be harmful to bats [5.9.15, 5.11.3, 5.13.3; 6.1.8, 4.2.9]. Whether or not such harm would be lawful in the absence of a Licence was the subject of legal submissions, by Dr Robertson, Mr Feeney, Chiltern, and Natural England [5.9.7-5.9.14, 5.13.3, 6.1.2-6.1.11, 4.2.9-4.2.10]. Again, this is a matter of law. It seems to me a matter of considerable precedent that Natural England has never been asked to assess an application for the deliberate killing of a European Protected Species by vehicles; and I note that the Courts have found that a motorist driving in an area inhabited by bats could not be held to be deliberately disturbing bats, nor could such a motorist be prosecuted for breach of [Habitats 2010] Regulation 41(1)(a) for deliberately killing a bat [4.2.9, 6.1.10]. And I attribute considerable weight to the consistently held view of Natural England that the impact of the existing or prospective trains would not amount to deliberate killing of bats [4.2.9, X/20 6.55.74].
- 7.2.13 Objectors argue that the tunnel is a resting place and/or breeding site for bats, protected by the Habitats Directive Article 12(1)(d) regardless of the motive of the agent of its deterioration or destruction, and a licence is therefore needed by the scheme in that respect [5.9.8]. Natural England replies that the site is used only as a roost for bats, and only to a limited degree; and that there are opportunities for remedial measures should the need arise, so that it is not likely that any licence would be needed pursuant to Article 12(1)(d) [4.2.13]. In view of Natural England’s response I find no reason to consider the proposed licence insufficient.
- 7.2.14 The deterrent lighting system is intended to operate indefinitely, and a mechanism is needed to secure that. Chiltern and Natural England
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propose a planning condition to achieve this, set out as condition 34 in document CRCL/RI/26. Its stated purpose is to secure the long-term maintenance of the deterrent system, by Chiltern and its successors and any other person deriving an interest from Chiltern under the planning permission. This reflects the approach recommended by paragraph 98 of ODPM Circular 06/2005 [3.1.15, 4.2.15].

Conclusion

- 7.2.15 The mitigation measures proposed by Chiltern since January 2011 and agreed by Natural England to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme in this regard, identified at paragraph 9.17.11 of the Inspector's report of 15 July 2011.
- 7.2.16 For the reason I have given in 7.2.14, the planning permission for the scheme should be subject to a further condition, as follows:

Planning Condition: Wolvercot Tunnel Lighting System

Railway passenger services shall not resume through Wolvercot Tunnel following the Phase 2A lowering works in Wolvercot Tunnel until the deterrent lighting system described in the Bat Licence application, EPSM 2011 – 3068 Method Statement 2 has been installed and brought into operation. The lighting system shall continue to be operated and maintained thereafter, throughout the period of operation of train services through the tunnel, unless and until Natural England shall notify the local planning authority and Network Rail, in writing, that it is no longer necessary to operate the lighting system.

- 7.3 **Whether Condition 19 (operational noise and vibration monitoring and mitigation), in the form proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the operation of the scheme would have an acceptable effect on local residents, businesses and the environment, by virtue of noise and vibration.**
- 7.3.1 Subject to the suggested modifications set out in paragraph 3.2.9 of this report, the applicant considers the draft Condition, in conjunction with the Noise and Vibration Mitigation Policy (document CD/1.29/2.1), would lead to an acceptable effect on residents, businesses and the environment by virtue of noise and vibration [3.2.10].
- 7.3.2 Objectors raised various issues relating to noise and vibration.
- Securing The Anticipated Mitigation**
- 7.3.3 The Secretary of State seeks advice on whether, taking into account the changes referred to in the Department's letter of 24 January 2012, the amended condition 19 is likely to be effective in securing the mitigation anticipated in my report dated 15 July 2011 (document X/20).
- 7.3.4 The mitigation anticipated in my first report would consist, with two exceptions, of the application of the Noise and Vibration Mitigation Policy within the framework established by Condition 19. The intention, expressed in paragraph 1.7 of the NVMP, is that the residual noise effects at any location are no worse than those reported in the Environmental

Statement [X/20, 9.8.18]. The exceptions related to Wendlebury Gate Stables, and to 45 Lakeside, where particular arrangements would be made.

Application Of The Noise And Vibration Mitigation Policy Within The Framework Established By Condition 19

- 7.3.5 Within Condition 19, paragraphs 19.1, 19.2 and 19.5 to 19.14 require compliance with the Noise and Vibration Mitigation Policy (except where the Policy is in conflict with the Condition), and the submission to the local planning authority of schemes of assessment of the noise and vibration effects of the scheme and proposed mitigation measures (each to be accompanied by an independent report on the robustness of the scheme of assessment). Other provisions in those paragraphs deal with monitoring, the sequencing of the implementation of approved measures, and other matters.
- 7.3.6 Engage Oxford's acoustician considered each provision of the draft Condition [5.5.5]. The matters he raised related to compliance testing and other matters for which the draft Condition provides, and a particular element of the vibration analysis (which I consider elsewhere in this report). Other objectors challenged two matters arising from the proposed condition: the capability of the local planning authorities to properly consider and enforce the applications for approval that would come before them, and the cases which might arise where mitigation might be said to be not reasonably practicable.

Roles Of The Local Planning Authorities

- 7.3.7 Although neither local planning authority has commented on these arrangements, some objectors contend that the local planning authorities are incapable of taking these actions [5.1.4, 5.5.6, 5.12.2].
- 7.3.8 Condition 19 and the Noise and Vibration Mitigation Policy assign to Chiltern the bulk of the work in developing the scheme, its mitigation measures and assessment of their effectiveness, arranging independent reviews of those assessments, monitoring the results and if necessary rectifying shortcomings. The local planning authorities' role is limited to the approval of key stages. Neither local planning authority has commented on these arrangements. I conclude that the proposed condition would strike an appropriate and reasonable balance between the use of resources by the developer and by the local planning authorities, and that there is no authoritative reason to conclude that it would not be properly enforced, or that applications for approvals would not be properly considered.

"Reasonably Practicable"

- 7.3.9 Objectors query the meaning of the term "reasonably practicable" and suggest that it should be defined and that cases in which it is suggested to apply should be the subject of independent review [5.12.3, 5.14.2]. Chiltern draws attention to section 72 of the Control of Pollution Act 1974 [6.2.12], which provides a definition of "best practicable means" that relies on an understanding of the expression "reasonably practicable". But it seems to me that that Act provides no definition of the expression "reasonably practicable". The same expression is used several times in

the Transport and Works Act 1992 (sections 31, 118A and 119A) and in the 1990 Town and Country Planning Act (sections 184, 260 and 61E), but neither of those Acts provides a definition of its meaning. Therefore the expression "reasonably practicable" is one that in the current context may be taken to have its everyday meaning and so no special definition is necessary. Independent review of circumstances said to be not reasonably practicable would be by the local planning authority through paragraph 12 of Condition 19.

Conclusion: Securing The Anticipated Mitigation

- 7.3.10 I conclude that the amended condition 19 would be effective in securing the mitigation anticipated in my first report.

Whether Operation Of The Scheme Would Have An Acceptable Effect On Local Residents, Businesses And The Environment By Virtue Of Noise And Vibration

Residents

- 7.3.11 The legislative requirement in respect of the effects of noise from schemes such as this on dwellings and other buildings used for residential purposes ("eligible buildings") is that of The Noise Insulation (Railways And Other Guided Transport Systems) Regulations 1996 (CD/5.13, "the Regulations"). The statutory requirements of those Regulations would be met and in that respect the noise effect on local residents of operating the scheme would be acceptable. At noise levels less than the specified day-time and night-time noise levels in the Regulations, the statutory requirement would be met even if no mitigation was provided.
- 7.3.12 Additionally, measures would be deployed to control external noise at noise sensitive properties. Where practicable, noise increases would be mitigated so that they do not result in significant noise impacts (of 3 dB or greater) above either the existing noise level or the noise impact thresholds in the Noise and Vibration Mitigation Policy, which were derived from the withdrawn Planning Policy Guidance 24 *Planning And Noise* [3.2.8, X/20 9.8.11]. Changes in environmental noise levels of less than 2 to 3 dB are not noticeable to most people [3.2.4]. Mitigation would be provided (where practicable) at all locations subject to higher increases in noise, and in its assessment work so far Chiltern has found no instance where mitigation measures needed to meet the Noise and Vibration Mitigation Policy would not be reasonably practicable [6.2.13]. The evidence is rich with assessments of scheme-related noise at particular locations and so I conclude that there are likely to be only few situations, if any, in which necessary mitigation is not reasonably practicable.
- 7.3.13 Evidence was given regarding the acceptability of the noise thresholds in the Noise and Vibration Mitigation Policy.
- 7.3.14 The National Planning Policy Framework ("the Framework") says at paragraph 123 that planning decisions should aim to avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development. Paragraph 109 says that unacceptable levels of noise pollution should be prevented. Attention is drawn to paragraph

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- 2.14 of the Noise Policy Statement for England Explanatory Note, but neither that nor anything else in document Obj255/7 indicates specific noise levels that might be considered acceptable [5.4.2].
- 7.3.15 If the objectives of the Framework with respect to noise are to be met, then two circumstances should prevail:
- a) There should not be significant adverse impacts on health and quality of life as a result of new development; and,
 - b) Unacceptable levels of noise pollution should be prevented.
- 7.3.16 Use of PPG24 led to the incorporation in the Noise and Vibration Mitigation Policy of the two external noise impact thresholds (free-field) [3.2.6]:
- For daytime noise, L_{Aeq} 0700-2300 hours: 55 dB.
 - For night-time noise, L_{Aeq} 2300-0700 hours: 45 dB.
- 7.3.17 At levels below these noise thresholds few people are annoyed by noise [X/20, 4.8.13]. Annex 2 of PPG24 explains the relationship between these figures and guidance provided by the World Health Organisation in 1980: they are equivalent. [6.2.8].
- 7.3.18 Some objectors considered that other standards should apply. Mr Claye draws attention to a World Health Organisation recommendation that night-time noise levels should not exceed 40 dB [5.4.3]. Mr and Mrs McClements also argue for levels different from those proposed by Chiltern, although (without prejudice to the rest of their submission) they also countenance the noise levels proposed by Chiltern, subject to conditions [5.8.5 to 5.8.12, 5.8.16]. They also contend that a night-time average noise level L_{night} of less than 55 dB should be respected to protect the population from serious health effects [5.8.5]. Engage Oxford's acoustician considers the threshold noise levels too high, but proposed no alternatives (and observed that background noise levels in north Oxford are high enough to mean that Chiltern's noise assessment methodology would not adversely affect residents there) [5.5.3]. No other objector proposed different general threshold noise levels from those set out in the draft Condition or the noise and vibration mitigation policy.
- 7.3.19 An objector, using *Calculation of Railway Noise*, gave evidence that class 47 locomotives each pulling 10 passenger coaches at 94 mph past Lakeside (with a 2-metre noise barrier) would result in L_{Aeq} daytime noise levels of 65 dB(A) or more [5.4.4], whereas Chiltern predicts lower noise [X/20, 6.20.17 gives examples]. But the objector's analysis overestimates the line speed, which would be some 75 mph here [X/20, 4.5.36] and the 6-car multiple-unit stock used on the Marylebone line would be used here rather than 10-carriage locomotive-hauled trains which could not be accommodated by the new platform at Oxford station [X/20, 4.5.35]. I do not accept the objector's submitted calculation as reliably representing conditions with the scheme. No other reasoned case was put at the re-opened Inquiry that the prediction methodology was unsound or would not reliably predict noise levels associated with the scheme.
- 7.3.20 Direct comparisons between different noise standards are not always
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straightforward because different noise statistics are used by different authorities. The matter of the descriptive noise statistic used was the subject of paragraph 9.8.8 of my initial report [X/20]. The evidence of Mr and Mrs McClements, in advancing the day-evening-night noise level L_{den} and its constituent statistics, does nothing to alter the Statutory requirement (in *The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996*) that the L_{Aeq} statistic should be used in cases such as this, as the DfT requires through the use of *Calculation of Railway Noise 1995*. I do not change my previous conclusion in respect of the noise statistic.

- 7.3.21 Having considered the representations made, I am persuaded that the Noise Impact Threshold Levels of the Noise and Vibration Mitigation Policy – related as they are to surveys of the conditions in which large parts of the UK population live, and to work by the World Health Organisation – are appropriate for their purpose.
- 7.3.22 Application of the Noise and Vibration Mitigation Policy as required by the draft Condition could in some cases result in noise levels (with the scheme in operation) such that the Noise Impact Threshold would be newly exceeded by less than 3 dB as a result of the scheme, and so no mitigation would be provided. Chiltern's identification of this point led to no challenge [3.2.8]. In such cases, the difference between the Threshold and the actual noise level would be so small as to be indiscernible to most people and so it seems to me that mitigation would be unlikely to be necessary. And the standards proposed here are no less stringent than those for Crossrail [6.2.11]. At lower noise levels, no intervention would be necessary while at higher noise levels (up to the intervention level set by the Noise Insulation Regulations) mitigation would be provided within the Condition. At higher levels still (the table in paragraph 4.8.20 of X/20 gives examples from the Environmental Statement) even the provision of noise barriers would be insufficient to meet the Policy, and statutory noise insulation would be needed and provided; external noise levels would be undesirably high but the statutory requirement would be met. All these circumstances would be acceptable.
- 7.3.23 In paragraph 9.8.13 of my first report I found that noise barriers and the other mitigation measures proposed by Chiltern are capable of reducing the noise effect the Scheme would otherwise have, and that remains my view. In view of its compliance with the statutory requirement and the other considerations I have set out I conclude that the draft Condition would serve to ensure that the Scheme would have an acceptable effect on local residents by virtue of noise.

Business

- 7.3.24 Representations were made to the re-opened Inquiry in respect of the Scheme's effect on business interests by virtue of noise.
- 7.3.25 Paragraph 3 of draft Condition 19 refers to conditions at Wendlebury Gate Stables riding school. There is no dispute that the use of BS EN ISO 9921:2003 *Ergonomics Assessment Of Speech Communications* (document CRCL/INQ/37) would be appropriate [5.10.1, 0]. Three elements of its application here are in dispute. All relate to

communication between an instructor and a trainee rider at the time a train passes the riding school, the background being the need for safety to be maintained through effective voice communication during that short period:

- i) Because the period in question is short, there is no need to amend the draft condition to provide for "prolonged normal communication" while a train passes and so the modification to the draft condition, suggested in subparagraph 5.10.1e) of this report, is not necessary.
- ii) The riding school routinely instructs non-native listeners. Mr Offord contends that allowance should be made for that, just as allowance is agreed to be necessary for the vocal characteristics of female instructors [5.10.1b), 3.2.9]. Chiltern argues that, because the communication period while a train is passing is short, no adjustment is needed for non-native trainees [0], but it seems to me that to do so would make communication doubly difficult: the reduced quality of communication considered by the Standard to be appropriate for "alert situations with short known words" would be added to the greater need for clarity in the case of non-native listeners. The modification to the draft condition 19.3, suggested in subparagraph 5.10.1c) of this report, should be made, in addition to that proposed by Chiltern [3.2.9].
- iii) The requirement in the draft Condition that tests should be undertaken only when the wind speed is less than 5 metres per second arises from characteristics of the test method set out in BS4142:1997 *Method For Rating Industrial Noise Affecting Mixed Residential And Industrial Areas* rather than the site, and so no change to the draft Condition is needed in that respect [5.10.1d), 6.2.17].

7.3.26 Mr Offord of the Stables also asks that there should be a defined time by which noise mitigation measures should be in place. Draft Condition 19.5 makes such a provision.

7.3.27 Draft condition 19.4 makes particular provision for the music teaching studio at 45 Lakeside. The change suggested by Chiltern [3.2.9] should be made, so that Building Bulletin 93 would be properly applied.

7.3.28 Mr and Mrs McClements seek the application of the design standards of Building Bulletin 93, an acoustic design guide for schools, to their living room and that of a neighbour, also in Quadrangle House. Mr McClements is a self-employed audio engineer, project manager and music teacher and the neighbour (who made no representation on the point) works from home as a teacher of French. Chiltern draws attention to the intention that reasonable amenity will be maintained inside all dwellings otherwise affected by the scheme [5.8.10, 6.2.15,]. I am not persuaded that special noise-reducing measures are needed for the teaching of French, or that the part-time use of a living room for teaching music is sufficient justification for such measures. Nor do I accept that special arrangements should be made on the basis of speculation about the effect the scheme might have on a particular resident by virtue of their

state of health [5.8.9]; the standards that are applied are appropriate to the population generally.

- 7.3.29 At Wolvercote Primary School, Chiltern now predicts an overall external noise level of 52 dB $L_{Aeq, 16\text{hour}}$ without mitigation in Phase 2, and less in Phase 1. That prediction would be subject to review under draft condition 19(9). The corresponding interior noise levels would be some 15 dB lower, resulting in a Phase 2 noise level some 2 dB above the design standard for new schools. [6.2.14, X/20 8.3.12k)]. A change in environmental noise level of less than 2 to 3 dB would not be noticeable to most people [3.2.4], and I conclude that the scheme would not result in noise levels in the School that would be noticeably higher than intended for new schools.
- 7.3.30 I therefore conclude that, subject to the change to Condition 19.3 that I have noted, the draft Condition would serve to ensure that the Scheme would have an acceptable effect on business by virtue of noise.
- 7.3.31 There was no contention that the Scheme would have an unacceptable effect on the environment generally by virtue of noise, and I am satisfied that it would not.
- 7.3.32 There is no dispute that draft Condition 19.7 should be modified by the deletion of “(modified as necessary in the light of subsequent forecasts which led to the approval of East West Rail for construction)” [3.2.9, 5.3.3]. The change would add necessary precision to the condition and would provide clarity to the availability of noise mitigation. The change should be made.
- 7.3.33 Chiltern also proposes minor drafting changes to conditions 19.1, 19.5, 19.8, 19.11 and 19.14 [3.2.9]. There is no objection to those and I am satisfied that they would be beneficial and should be made, for the reasons given by Chiltern.

Vibration

- 7.3.34 With the exception of vibration caused by blasting for mineral extraction, (not relevant here) the Framework is silent on the matter of vibration.
- 7.3.35 Objections newly heard at the re-opened inquiry that related to vibration pointed to the lack of site investigation by the applicant [5.4.6] and to the lack of a reliable analysis [5.13.7], but those are matters addressed by Condition 19.10. An objector is concerned that vibration-induced consolidation settlement of the soil could result in the formation of a trough up to 50 metres wide centred on the railway, but I do not share that concern because the railway has been in place and in use since around 1850 [X/20, 3.7.3] and consolidation settlement is time-related [5.4.7]; and it seems to me that any consolidation settlement associated with the use of the railway will by now have occurred. Engage Oxford query paragraph 2.10 of the Noise and Vibration Mitigation Policy, relating to existing vibration at dwellings [5.5.4], but it seems to me that the proposed approach is equitable and the evidence is that it is consistent with other railway schemes [6.2.19]. Overall, there was no new contention that the standards and thresholds for the assessment of vibration proposed in the Noise and Vibration Mitigation Policy are wrong.
- 7.3.36 The same considerations apply to the local planning authority’s role in

the assessment of vibration as do to the assessment of noise, and my conclusion in that regard is the same.

7.3.37 The Noise and Vibration Mitigation Policy is intended to mitigate vibration when it would otherwise exceed limits established by BS6472, which are such that (in the terms of BS6472) the probability of adverse comments would be low [X/20, 4.8.26 and 4.8.32]. Engage Oxford's acoustician considers those limits to be too high [5.5.4] but it seems to me that BS6472's description of their effect is consistent with the requirements of the development plan, which are (in Cherwell) that development should not cause materially detrimental levels of vibration and (in Oxford) unacceptable nuisance should not be caused [X/20, 9.8.26]. Chiltern's rationale for the Policy's approach in cases where vibration is already above BS6472's "low probability of adverse comments" thresholds [6.2.19] was not disputed. I conclude that in respect of vibration the Policy relies on appropriate measure of acceptability as sought by the local plan policies I have identified.

7.3.38 The Condition would serve to ensure that the Scheme in operation would have an acceptable effect on local residents by virtue of vibration. There was no contention that businesses would be affected or (apart from that previously reported, on which I concluded in paragraph 9.10.5 of X/20) that there would be any vibration-related effect on the wider environment. I am satisfied that the proposed Condition would be effective in securing the vibration-related mitigation anticipated in my first report.

Human Rights: Sleep

7.3.39 Two objectors contend that the Scheme would infringe their right to adequate sleep. One identifies Article 8 of the European Convention on Human Rights [5.8.18, 5.11.5]. The statutory provisions of the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 would be met and, additionally, noise changes above the noise impact thresholds, greater than 3 dB, would be mitigated and so it does not seem to me likely that the Scheme would cause sleep loss. But even if I am wrong in that, the scheme is promoted in accordance with the law and offers a number of important transportation, regeneration, environmental and socio-economic benefits [6.4.2, and X/20 9.3] which weigh against the objection to such an extent that it could, in my view, be set aside.

Conclusion: Condition 19

7.3.40 Draft Condition 19 as amended to the form in the following paragraph would establish a process whereby the Noise and Vibration Mitigation Policy would be applied. Assessments of expected noise and vibration effects of the scheme would be made and subjected to third-party scrutiny, the results of which would be submitted to the local planning authority for approval. Statutory noise mitigation would be provided and non-statutory mitigation would also be provided within the terms of the Noise and Vibration Mitigation Policy. The intervention criteria and the arrangements for post-construction monitoring and rectification are such as to ensure acceptable effects on local residents, businesses and the environment by virtue of noise and vibration.

- 7.3.41 Condition 19 in the following form would in my view be likely to be effective in securing the noise and vibration mitigation anticipated in my report dated 15 July 2011:

19: Operational Noise and Vibration Monitoring and Mitigation

1. Operational noise and vibration monitoring and mitigation shall be carried out in accordance with the Noise and Vibration Mitigation Policy January 2011 (Inquiry document CD/1.29/2.1, referred to in this condition as "the Policy") and this condition. In the event of any conflict between the two, this condition shall prevail.
2. Development shall not commence within each Individual Section, until a detailed scheme of assessment of predicted noise impacts during operation of Phase 1 and 2A of the railway works, predicted vibration effects of the railway with Phases 1, 2A and 2B and details of proposed monitoring and mitigation measures, has been submitted to and approved by the local planning authority.
3. The schemes of assessment of the predicted noise impacts of Phase 1 and 2A and of Phase 2B on the Individual Section or Sections that abut Wendlebury Gate Stables shall also identify measures that should be taken to ensure, insofar as reasonably practicable, that the noise caused by individual passing trains on the railway does not significantly impede voice communication over a distance of 30 metres within either the "large riding school" or the "small riding school" at those Stables, or within the paddock opposite Bramlow. For direct voice communications (i.e. without electro-acoustic assistance), the term "not significantly impede" shall be taken to mean that the speech intelligibility shall be at least "fair" at an increased (i.e. "loud") vocal effort as defined in BS EN ISO 9921:2003 Ergonomics Assessment of Speech Communications. The assessment method used shall be the Speech Interference Level as described in Annex E to that Standard. The assessment shall be based on a native female speaker facing the rider under instruction (who shall be a non-native listener) and the standard to be achieved will be for alert situations where short known words are used and the wind speed is less than 5 metres per second. A correction factor of -5dB shall be used to convert the standard for male voices to female voices. If personal communications or sound reinforcement systems are proposed, the assessment methodology shall be subject to the approval of the independent expert appointed in accordance with Condition 19.9. This part of the Condition shall not apply if, at the time of the assessment, the Stables are no longer a licensed riding establishment under the Riding Establishments Act 1964.
4. The schemes of assessment of the predicted noise impacts of Phase 1 and 2A and of Phase 2B on the Individual Section or

Sections that abut 45 Lakeside shall also identify measures that shall be taken to ensure that the noise caused by individual passing trains in the Studio at 45, Lakeside does not exceed 35 dBL_{Aeq,30min} and 55 dBL_{A1,30min}, the standards to be met by music teaching rooms as defined in Building Bulletin 93, Acoustic Design of Schools (Table 1.1).

5. Where vibration mitigation measures required for Phase 2B can be installed cost-effectively during the Phase 1 and 2A works, this shall be done. All mitigation measures, including those prescribed in the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996, required for Phase 1 and 2A shall be installed as soon as possible after commencement of the works and no later than the date on which a passenger rail service is resumed on that Section of railway.
6. Any monitoring of noise and vibration shall be undertaken in accordance with the approved scheme of assessment and the Policy.
7. Before the commencement of the laying of the second track between the MoD Depot at Bicester and Islip a detailed scheme of assessment of the predicted noise impacts arising from the works and from the additional services assessed as likely to operate under Phase 2B in the Environmental Statement and details of proposed mitigation measures, which achieve the standards for noise and vibration attenuation set out in the Policy, shall be submitted to and approved by the local planning authority.
8. Any vibration mitigation measures not already installed during the Phase 1 and 2A works necessary for Phase 2B shall be installed during the Phase 2B works. All mitigation measures, including those prescribed in the Noise Insulation Regulations (Railways and Other Guided Transport Systems) 1996, required for Phase 2B shall be undertaken as soon as possible after commencement of the works and completed no later than the date on which the second track is brought into use.
9. The submitted schemes of assessment shall show how the standards of noise mitigation set out in the Policy will be achieved. Supporting calculations, or printouts of inputs and outputs from recognised computer software, shall be provided. Each scheme shall be accompanied by a report, prepared by an independent expert previously approved in writing by the local planning authority, on the robustness of the noise-related elements of the scheme of assessment. Noise mitigation measures shall be permanently installed as approved.
10. The submitted schemes of assessment shall show how the standards of vibration mitigation set out in the Policy will be

achieved. Supporting calculations or empirical data, or a combination of the two, shall be provided. Each scheme shall be accompanied by a report, prepared by an independent expert previously approved by the local planning authority, on the robustness of the vibration-related elements of the scheme of assessment. Vibration mitigation measures shall be permanently installed as approved.

11. The submitted schemes of assessment shall include a list of properties assessed and the results of the assessment at each. By the times that the mitigation measures are due to be brought into use, notice shall be served on the local planning authority of the mitigation measures that have been installed for each property assessed.
12. The situation may arise in which Chiltern finds "not reasonably practicable" the provision of mitigation measures that otherwise would be required by the Policy. In such circumstances, the mitigation measure or an equally effective substitute previously approved by the local planning authority shall be installed in the timescale set out in item 1.10 of the Policy, unless the local planning authority has confirmed, in writing, its agreement that the mitigation in question is not reasonably practicable and that there is no suitable substitute.
13. Where noise barriers are promoted in an approved scheme of assessment, they shall be installed only once the local planning authority has given written approval of their size, appearance and location. Noise barriers shall be maintained in their approved form and may be removed only with the written approval of the local planning authority.
14. Development shall be in accordance with the approved schemes and this condition.

Reason: To ensure that operational noise and vibration are adequately mitigated at residential and other noise sensitive premises.

7.4 **Whether Condition 31 (measures for the protection of the lowland hay meadow habitat at the Oxford Meadows Special Area of Conservation), in the form now proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the integrity of the Oxford Meadows SAC, having regard to the conservation objectives of the site, by reason of air pollution.**

Need For Condition 31

- 7.4.1 Chiltern argues that condition 31 is unnecessary, on the basis of traffic modelling reported to the re-opened Inquiry. Chiltern contends that the scientific evidence of lack of harm to the SAC is so robust as to give

confidence that there would be no significant impact on the integrity of the SAC, and that the likelihood that the scheme would harm the designated habitat is extremely low [3.3.1 to 3.3.4].

- 7.4.2 In contrast, Natural England considers that the current data, completely based on modelling, leave room for uncertainty and so a precautionary approach should be taken in light of the significance and sensitivity of the SAC [4.3.5].
- 7.4.3 The original traffic modelling in support of air quality assessment relied on Oxfordshire County Council's SATURN-based Central Oxfordshire Transport Model ("COTM"), which forecasts traffic flows for the two peak hours (0800-0900 and 1700-1800), and I am satisfied that it can do that reasonably reliably [X/20, 9.7.4]. However, for reasons set out in my first report, this gives an inadequate representation of traffic flows for air quality modelling purposes [X/20, 9.8.51 and 9.8.52]. The Annual Average Daily Traffic (AADT) statistic is required, representing as it does a proxy for the total number of vehicles that use a particular road during a year (nutrient nitrogen deposition is expressed as a rate per year [3.3.13]). Chiltern has therefore sought to use COTM to simulate AADT flows, in combination with the "hexcell" method of distributing trips associated with the scheme [3.3.10]. But the "hexcell" method is not absolutely accurate, achieving an accuracy within plus or minus 20% of true figures in only 40% of cases [X/20, 4.4.3b)]. And the use of COTM for this purpose has not been calibrated. The evidence is that base flows (without the development) synthesised in this way for the A40 and the A34 compare "reasonably well" with actual traffic count data for those roads [3.3.10]. Although the expected traffic-related reduction in the air pollution baseline is not considered in Chiltern's air quality assessment (which adds to its robustness in the longer term), I am not persuaded that the new traffic assessment offers results of such reliability that the need for a condition such as Condition 31 can be discounted.
- 7.4.4 Nor do the use by Chiltern of air quality data from the APIS database with its 5 km grid [3.3.14], relatively coarse in comparison with the scale of the SAC and the effects that are modelled, or the concern of Oxford City Council that air pollution models are underestimating concentrations due in part to deficiencies in the modelling of traffic and emissions [5.13.9], add confidence that no such planning condition is needed.
- 7.4.5 For all of these reasons I am not satisfied that the precautionary approach advocated by Natural England, and which I previously recommended, should be set aside. There is no contention that the creeping marshwort qualifying interest of the SAC would be prejudiced by air pollution associated with the scheme, and Natural England's evidence is that it would not [4.3.2 and X/20, 9.10.13]. I conclude that a condition to protect the lowland hay meadow habitat at the SAC should be imposed.

Condition 31

- 7.4.6 Document CRCL/RI/16 is a statement of common ground between Chiltern and Natural England and includes a re-draft of Condition 31 [3.3.5]. The re-draft provides necessary improvements to the precision and enforceability of the condition as previously presented in document

X/24 [3.3.6].

- 7.4.7 Objectors voiced some concerns. The Wolvercote Commoners Committee noted that the re-draft would directly constrain development of the scheme on the individual section or sections between Oxford North Junction and Rewley Abbey Stream, whereas harmful pollution might arise in the SAC if that part of the scheme was omitted but the rest built and brought into use [5.12.5]. Chiltern replies that the draft condition's approach is logical and proportionate [6.3.5]. If it were the case that trains on the scheme railway were the scheme's only operational source of nitrogen oxide emissions then that could be so; but there is no dispute that road traffic generated by the scheme, and particularly by the car parking and interchange facilities proposed at Water Eaton Parkway station [3.3.11], would also contribute to the additional nitrogen oxides that Condition 31 is intended to address. Opening of the scheme car parks and station at Water Eaton Parkway should therefore be precluded until the Scheme of Further Assessment of Air Quality has been approved by the local planning authority.
- 7.4.8 Objectors also point to current localised emission sources, such as parked trains with their diesel motors running, which might affect the SAC [5.13.8]. But the re-drafted Condition requires the assessment of baseline exposure to nitrogen oxides, and that should include all sources that influence nitrogen oxide concentrations at the relevant parts of the SAC. To ensure that it does, Condition 31 should explicitly require the incorporation in the Scheme of Further Assessment of appropriate field observations of nitrogen oxide concentrations, and time should be allowed, between approval of the Scheme of Further Assessment and the opening of the scheme to passenger trains, for the baseline assessment to be concluded and reported (and the report accepted) before the scheme can influence conditions at the SAC. Such an allowance could incorporate the Water Eaton Parkway preclusion referred to in paragraph 7.4.7 of this report.
- 7.4.9 In my first report I found that the Cassington Meadows SSSI component of the SAC, with its lowland hay meadow habitat, should be included in the assessment [X/20, 9.10.15]. Chiltern's position is that Cassington Meadows need not be included, because it is over 1.5 km west of the A34 and will not be materially affected by any rail or rail-related road traffic emissions [3.3.3]. Draft condition 31 in the Annex to the Department for Transport's letter dated 24 January 2012 (document X/24) accepts that view, and Natural England accepts the contents of the letter [4.3.4]. Subsequent to the Department's letter, Chiltern issued evidence that traffic on the A34 would be reduced by the scheme (which underpins the omission of Cassington Meadows) and that traffic on the A40 would be increased, resulting in increases of nitrogen oxides near that road [3.3.11, 3.3.20]. It is clear from Figure 1 of Appendix ASC7 (document CRCL/P/10/R/B) that the Cassington Meadows SSSI is very much closer to the A40 than it is to the A34, and I am not persuaded that it should be excluded from the assessment.
- 7.4.10 Objectors question whether suitable mitigation measures are available and how they could be secured if found to be necessary. Potential mitigation measures and the means by which they could be implemented

have been identified, and I am satisfied that the arrangements proposed are appropriate [5.12.6, 4.3.6, 3.3.8].

Conclusion: Condition 31

- 7.4.11 The draft condition in document X/24 lacks precision and enforceability in various respects. Those shortcomings would be overcome in large part by the re-drafted condition at paragraph 5.8 in the statement of common ground between Chiltern and Natural England (document CRCL/RI/16) [3.3.5, 4.3.1]. Other considerations I have set out identify the need for further modification of the re-drafted Condition.
- 7.4.12 The following condition would secure the mitigation envisaged at paragraph 9.10.16 of my report dated 15 July 2011 (X/20); namely, that operation of the new railway, including the associated road traffic effects, would not be likely to harm the qualifying interests or species for which the SAC was designated by virtue of air pollution.

31. Measures for the Protection of the Lowland Hay Meadow Habitat at the Oxford Meadows Special Area of Conservation

Development shall not commence on the Individual Section or Sections between Oxford North Junction and Rewley Abbey Stream ("the relevant sections") until a Scheme of Further Assessment of Air Quality in relation to the Cassington Meadows SSSI, the Pixey and Yarnton Meads SSSI and the Wolvercote Meadows SSSI that are co-terminous with part of the Oxford Meadows SAC ("the relevant parts of the SAC") has been submitted to and approved in writing by the local planning authority for the relevant parts of the SAC (in consultation with Natural England).

The Scheme of Further Assessment shall include the following:

- i) a methodology and programme for assessing the baseline exposure to oxides of nitrogen and inferring nitrogen deposition of the relevant parts of the SAC, including appropriate field observations of nitrogen oxide concentrations;
- ii) a methodology and programme for monitoring the rates of exposure to oxides of nitrogen (and inferring nitrogen deposition) of the relevant part of the SAC that may be emitted from such additional road traffic, which is using the A34 and A40 close to the relevant parts of the SAC, and such additional trains as are attributable to the opening of the relevant sections of the development to passenger rail traffic;
- iii) predictions, based on the air quality monitoring, for a period of 10 years after opening of the relevant sections of the development to passenger rail traffic, of the likely additional rates of exposure to oxides of nitrogen (and inferred nitrogen deposition) of the relevant parts of the SAC, that are likely to arise as a consequence of the opening of the relevant sections of the development to passenger rail traffic and the development's associated road traffic;
- iv) a methodology for attributing the relevant proportions of the recorded exposures to oxides of nitrogen of the relevant sections of the development once opened for passenger rail traffic based on road traffic counts, railway operations data and

- surveys of modes of transport and routes used by users of the development;
- v) a methodology and programme for a baseline vegetation survey and evaluation of the designated Annex 1 lowland hay meadow habitat situated on the relevant parts of the SAC and for subsequent vegetation surveys, if such are demonstrated to be necessary following steps (i) to (iv);
 - vi) criteria and thresholds for determining the inferred nitrogen deposition from oxides of nitrogen which can be attributed to the opening of the development to passenger rail traffic that are designed to protect the designated Annex 1 lowland hay meadow habitat in the relevant parts of the SAC;
 - vii) the proposed means of mitigation (which is likely to include changes to the management regimes for the relevant parts of the SAC) in the event that the criteria or thresholds referred to in (vi) are not met or are exceeded; and,
 - viii) the arrangements for the reporting and mitigation to be undertaken in accordance with the Scheme of Further Assessment.

The approved Scheme of Further Assessment shall be implemented as approved.

The development shall not be opened to passenger rail traffic, nor shall the car park or station at Water Eaton Parkway be opened for public use, until the approved assessment of baseline conditions referred to in i) above has been completed as approved and reported to the local planning authority for the relevant parts of the SAC, and any other reports made in accordance with viii) above, and the local planning authority has issued written acceptance that the report complies with the approved Scheme.

Reason: to ensure that the development does not have a likely significant effect on the designated lowland hay meadow habitat of the SAC by virtue of deposition of nitrogen from emitted oxides of nitrogen.

7.5 **Whether Condition 32 (measures for the protection of the Hook Meadow and Trap Grounds SSSI), in the form proposed in the Annex to the Department for Transport's letter of 24 January 2012, would serve to ensure that the scheme would not be likely to have an adverse effect on the notified special interest features of the SSSI.**

Need for Condition 32

- 7.5.1 As at the earlier sessions of the Inquiry in 2010-11, and for the same reasons, Chiltern do not consider Condition 32 to be necessary [3.4.1 to 3.4.3, X/20 4.9.25 to 4.9.28]. Natural England welcomes the principle of a condition [4.4.1]. For the reason given in my first report, I consider a condition such as Condition 32 to be necessary for the protection of the SSSI [X/20, 9.8.54e) and Appendix 1].

Condition 32

- 7.5.2 Document CRCL/RI/16, a statement of common ground between Chiltern and Natural England, includes at paragraph 6.5 a re-draft of Condition 32 [3.4.4]. The re-draft provides necessary improvements to the precision and enforceability of the condition as previously presented in document X/24.
- 7.5.3 The Wolvercote Commoners Committee questions the competence of local planning authorities to make decisions relating to SSSIs without reference to Natural England, and other matters [5.12.7]. These are matters of law, and the Secretary of State will no doubt be advised. For my part, it seems that section 187A of the Town and Country Planning Act 1990 establishes that local planning authorities may secure compliance with planning conditions, and that the Wildlife and Countryside Act 1981 empowers Natural England to secure the implementation of management schemes at SSSIs [3.2.2, 3.3.8].
- 7.5.4 For corresponding reasons to those which I have given in my paragraph 7.4.8, the jointly proposed re-draft should be modified to include a specific requirement that the Scheme of Further Assessment should include appropriate field observations of nitrogen oxide concentrations, and time should be allowed, between approval of the Scheme of Further Assessment and the opening of the scheme to passenger trains, for the baseline assessment to be concluded and reported (and the report accepted) before use of the Scheme can influence conditions at the SSSI.
- 7.5.5 The following condition would secure the mitigation envisaged at paragraph 9.8.54e) of my report dated 15 July 2011; namely, to ensure that operation of the new railway would not be likely to have an adverse effect on the notified special interest features of the Hook Meadow and Trap Grounds SSSI.

32. Measures for the Protection of the Hook Meadow and Trap Grounds SSSI

Development shall not commence on the Individual Section or Sections between Oxford North Junction and Rewley Abbey Stream ("the relevant sections") until a Scheme of Further Assessment of air quality in relation to the Hook Meadow and Trap Grounds SSSI ("the SSSI") has been submitted to and approved by the local planning authority (in consultation with Natural England).

The Scheme of Further Assessment ("the Scheme") shall include the following:

- i) a methodology and programme for assessing the baseline rates of exposure to oxides of nitrogen and inferring nitrogen deposition on those parts of the SSSI that are identified to be assessed at the date of assessment, including appropriate field observations of nitrogen oxide concentrations;
- ii) a methodology and programme for a baseline vegetation survey;
- iii) a methodology and programme for monitoring the rates of exposure to oxides of nitrogen (and inferring nitrogen deposition) that may arise from emissions from such additional

- train operations as are attributable to the use of the relevant sections of the development by passenger rail traffic ("the additional train operations");
- iv) predictions, based on the air quality monitoring, railway operations and other data, for a period of 10 years after opening of the relevant sections of the development to passenger rail traffic, of the likely additional rates of exposure to oxides of nitrogen (and inferred nitrogen deposition) of the SSSI, that can be attributed to the opening and use of the relevant sections of the development for passenger rail traffic;
 - v) criteria and thresholds, designed to protect the SSSI, for determining the rates of exposure to oxides of nitrogen (and inferred nitrogen deposition) which can be attributed to the use of the development by passenger rail traffic;
 - vi) the proposed means of mitigation in the event that the criteria or thresholds referred to in v) are not met or are exceeded; and
 - vii) the arrangements for the reporting of the monitoring and mitigation to be undertaken in accordance with the Scheme.

The approved Scheme shall be implemented as approved.

The development shall not be opened to passenger rail traffic until the approved assessment of baseline conditions referred to in i) above has been completed as approved and reported to the local planning authority, and any other reports made in accordance with viii) above, and the local planning authority has issued written acceptance that the report complies with the approved Scheme.

Reason: to ensure that the development does not cause harm or prevent restoration of the designated features of the SSSI by virtue of nitrogen deposition from emitted oxides of nitrogen on the SSSI.

7.6 **Summary of Conclusions**

- 7.6.1 The mitigation measures proposed by Chiltern since January 2011 and agreed by Natural England to protect bats at Wolvercot Tunnel are sufficient to remove the likely impediment to implementation of the scheme in this regard, identified at paragraph 9.17.11 of the Inspector's report of 15 July 2011 [7.2.15].
- 7.6.2 In order to secure the long-term maintenance of the deterrent lighting system, a part of the mitigation measures to protect bats at Wolvercot Tunnel, the planning condition set out at paragraph 7.2.16 of this report is necessary.
- 7.6.3 If modified to the form shown in paragraph 7.3.41 of this report, Condition 19 (operational noise and vibration monitoring and mitigation) would serve to ensure that the operation of the scheme would have an acceptable effect on local residents, businesses and the environment, by virtue of noise and vibration. The changes are necessary for the reasons I have set out in paragraphs 7.3.25ii), 7.3.27, 7.3.32 and 7.3.33 of this report.

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- 7.6.4 If modified to the form shown in paragraph 7.4.12 of this report, Condition 31 (measures for the protection of the lowland hay meadow habitat at the Oxford Meadows Special Area of Conservation) would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the integrity of the Oxford Meadows SAC, by reason of air pollution. The changes are necessary for the reasons I have set out in paragraph 7.4.11.
- 7.6.5 If modified to the form shown in paragraph 7.5.5 of this report, Condition 32 (measures for the protection of the Hook Meadow and Trap Grounds SSSI) would serve to ensure that the scheme in operation would not be likely to have an adverse effect on the notified special interest features of the SSSI. The changes are necessary for the reasons I have set out in paragraphs 7.5.2 and 7.5.4.
- 7.6.6 The amended conditions numbered 19, 31 and 32 as set out in this report are likely to be effective in securing the mitigation (in respect of noise and vibration, effects on the Oxford Meadows SAC and effects on the Hook Meadow and Trap Grounds SSSI) anticipated in my report dated 15 July 2011.

J.P. Watson

INSPECTOR

APPENDIX 1 – APPEARANCES

CHILTERN RAILWAY COMPANY LIMITED

Mr Timothy Straker QC Instructed by Eversheds, One Wood Street, London,
EC2V 7WS

He called:

Mr Ian Gilder Head of Planning, Environmental Resources
Management

Mr Paul Tregear Director, PFA Consulting

Mr Andy Coates Technical Director, Environmental Resources
Management

Mr Michael Fraser Principal Consultant, Environmental Resources
Management

NATURAL ENGLAND

Mr Ned Westaway, of Counsel, instructed by Ms Julie Lunt, Head of Legal Services,
Natural England, Hercules House, Hercules Road,
London SE1 7DU

He called:

Mr Andrew Hearle Principal Adviser (Land Use Operations), Natural
England

OBJECTORS

Dr Michael Drolet

Councillor Michael Gotch Oxford City Councillor, Wolvercote

Mr P M Napier

Mr Peter Claye

For Engage Oxford

Mr Reuben Peckham Director, 24 Acoustics Ltd

Professor Sir Muir Gray

For Quadrangle Management Limited

Mr Keith Dancey Chairman, Quadrangle Management Limited

Mrs L McClements

Dr Caroline Robertson

For Mr J Offord & Mrs E Offord and Mr R Bradshaw & Mrs H Bradshaw

Mr John Offord

Mrs Rosemary Harris

For The Wolvercote Commoners Committee

Mrs Rosemary Harris

Mr Sean Feeney

APPENDIX 2 – DOCUMENTS SUBMITTED TO THE RE-OPENED INQUIRY

CORE DOCUMENTS

CD/1.2.3	Draft Order amended for re-opened Inquiry dated 3 April 2012
CD/1.9.1	Order Plans and Sections amended for re-opened Inquiry dated 3 April 2012
CD/1.10.1	Book of Reference amended for re-opened Inquiry dated 3 April 2012
CD/1.13.1	Planning Direction Drawings amended for re-opened Inquiry dated 3 April 2012
CD/1.29/2.1	Noise and Vibration Mitigation Policy (Clean version of CD/1.29/1 as submitted on 25 January 2011) April 2012

GENERAL INQUIRY DOCUMENTS 2012

X/20	Inspector's Report dated 15 July 2011
X/21	Addendum to the Inspector's Report dated 6 October 2011
X/22	Secretary of State's letter dated 15 November 2011
X/23	Secretary of State for Communities and Local Government's letter dated 15 November 2011
X/24	Secretary of State's letter dated 24 January 2012 and Enclosures A to H
X/25	Secretary of State's letter regarding the re-opening of the Inquiry dated 6 March 2012
X/26	Email dated 14 March 2012 from TWA Unit to the Programme Officer, together with a letter dated 14 March 2012 sent to all recipients of 6 March letter regarding the Pre Resumption Meeting
X/27	Secretary of State's letter regarding the venue for the Inquiry dated 19 March 2012
X/28	Correspondence between the Planning Inspectorate and the Department for Transport TWA Unit
X/29	Notes of the Pre Resumption Meeting, held on 5 April 2012
X/30	Evidence expected to be submitted by Natural England
X/30/A	Proof of evidence submitted by Natural England: Inquiry Programme Implications
X/31.1	Note by the Inspector dated 9 May 2012 on Mr Feeney's questions of clarification of Mr Coates, Obj123/64/1
X/31.2	Note by the Inspector dated 14 May 2012 on Mr Offord's questions of clarification of Mr Fraser, Obj238/13
X/31.3	Note by the Inspector dated 15 May 2012 on Dr Robertson's questions of clarification of Chiltern Railways, Obj234/15

CHILTERN RAILWAYS DOCUMENTS 2012

CRCL/RI/1	Bat Licence Application Form
CRCL/RI/2	Bat Licence Reasoned Statement
CRCL/RI/3	Reasoned Statement Annexes
CRCL/RI/4	BB93 Acoustic Design of Schools - A Design Guide (DfES)
CRCL/RI/5	Oxford Core Strategy 2026, adopted 14 March 2011
CRCL/RI/6	Oxford Core Strategy Habitat Regulations Assessment of Oxford Core Strategy, September 2008
CRCL/RI/7	Oxford Core Strategy Habitat Regulations Assessment of Oxford Core Strategy, updated version July 2009
CRCL/RI/8	Further Proposed Changes to the Submission Core Strategy and Supporting Information (including Addendum to Section 3.4 of the

	Habitats Regulations Assessment), April 2010
CRCL/RI/9	Oxford Core Strategy Habitats Regulations Assessment, April 2011
CRCL/RI/10	Statement of Case of Chiltern Railway Company Limited
CRCL/RI/11	Draft Order amended for the re-opened Inquiry (amendments shown tracked) dated 3 April 2012
CRCL/RI/12	Paper of Amendments to Draft Order as shown on CRCL/RI/11
CRCL/RI/13	Explanatory Note to the amendments to the Order Plans and Sections, Planning Direction Drawings and Book of Reference
CRCL/RI/14	National Planning Policy Framework, March 2012
CRCL/RI/15	Statement of Common Ground between The Chiltern Railway Company and Natural England in relation to matter (I) Bat Licence , dated 30 April 2012
CRCL/RI/16	Statement of Common Ground between The Chiltern Railway Company and Natural England in relation to matters (III) and (IV) The Adequacy of Conditions 31 and 32 dated 4 May 2012
CRCL/RI/17	Condition of SSI Units: Wolvercote Meadows SSSI and Pixey and Yarnton Meads SSSI
CRCL/RI/18	Compliance Pack
CRCL/RI/19	Air Quality Assessment: Use Of The ADMS Roads Dispersion Model
CRCL/RI/20	Opening statement by CRCL
CRCL/RI/21	Progress Report on 2012 Bat Surveys at Wolvercot Tunnel
CRCL/RI/22	Design and Operation of Proposed Bat Deterrent Lighting System in Wolvercot Tunnel
CRCL/RI/23	Noise and Vibration Assessment and Mitigation Summary of Requirements and Responsibilities
CRCL/RI/24	Note to the Inspector on the ability of Local Planning Authorities to enforce planning conditions
CRCL/RI/25	Note to the Inspector on the use of the terms 'Passenger rail services' or 'traffic' in the draft planning conditions
CRCL/RI/26	Proposed amendments to draft planning conditions in Annex A to the Secretary of State's letter [X/24] with proposed amendments by Chiltern Railways as at 1 June 2012
CRCL/RI/27	Chiltern Railways responses to objectors not appearing at the re-opened Inquiry
CRCL/RI/28	Response to Inspector's question on traffic flows at Water Eaton Parkway Station
CRCL/RI/29	Note to the Inspector on the redaction of documents on the Inquiry website
CRCL/RI/30	Closing Submissions of Chiltern Railways Company Limited
CRCL/RI/31	The powers of Natural England to enforce provisions relating to the management of SSSIs
CRCL/RI/32	R v Rochdale Metropolitan Borough Council, ex parte Milne

CHILTERN RAILWAYS PROOFS OF EVIDENCE

CRCL/P/8/R/A	Proof of evidence of Paul Tregear
CRCL/P/8/R/B	Appendices to proof of evidence of Paul Tregear
CRCL/P/8/R/C	Summary proof of evidence of Paul Tregear
CRCL/P/9/R/A	Proof of evidence of Michael Fraser
CRCL/P/9/R/B	Appendices to proof of evidence of Michael Fraser
CRCL/P/9/R/C	Summary proof of evidence of Michael Fraser
CRCL/P/10/R/A	Proof of evidence of Andy Coates

CRCL/P/10/R/B	Appendices to proof of evidence of Andy Coates
CRCL/P/10/R/C	Summary proof of evidence of Andy Coates
CRCL/P/12/R/A	Proof of evidence of Ian Gilder
CRCL/P/12/R/B	Appendices to proof of evidence of Ian Gilder
CRCL/P/12/R/C	Summary proof of evidence of Ian Gilder

CHILTERN RAILWAYS REBUTTAL PROOFS

CRCL/R/RI/OBJ9	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Drs Drolet and Thomas
CRCL/R/RI/OBJ14	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Mr Dancey
CRCL/R/RI/OBJ61	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Councillor Gotch
CRCL/R/RI/OBJ88	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Mr Napier
CRCL/R/RI/OBJ106	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Mr and Mrs McClements
CRCL/R/RI/OBJ106A	Cross references between paragraphs in OBJ106/4A and CRCL/R/RI/OBJ106
CRCL/R/RI/OBJ123	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Mr Feeney
CRCL/R/RI/OBJ149	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Sir Muir Gray
CRCL/R/RI/OBJ213	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Rosemary Harris
CRCL/R/RI/OBJ213/1	Annex A - Constraints on Line Speeds on Chiltern Railways Line in Oxford - enclosed with letter dated 3 August 2010 to Rosemary Harris (care of Karen Jones) from Mike Fraser on behalf of CRCL in CRCL/R/OBJ213
CRCL/R/RI/OBJ234	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Dr Robertson
CRCL/R/RI/OBJ234/1	Chiltern Railways Further Rebuttal Proof of Evidence in relation to the objection and evidence of Dr Robertson
CRCL/R/RI/OBJ238	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
CRCL/R/RI/OBJ255	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Peter Claye
CRCL/R/RI/OBJ297	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Engage, Oxford
CRCL/R/RI/OBJ312	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of Nicola Blackwood MP
CRCL/R/RI/OBJ321	Chiltern Railways Rebuttal Proof of Evidence in relation to the objection and evidence of The Wolvercote Commoners Committee

CHILTERN RAILWAYS RESPONSES TO QUESTIONS OF CLARIFICATION

CRCL/RI/CR/OBJ/123/64/1	Chiltern Railways (Bicester To Oxford Improvements) TWA Order Response to Questions of Clarification from Mr Feeney
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CRCL/RI/CR/OBJ/234/15	Chiltern Railways (Bicester To Oxford Improvements) TWA Order Response to Questions of Clarification from Dr Robertson
CRCL/RI/CR/OBJ/238/13	Chiltern Railways (Bicester To Oxford Improvements) TWA Order Response to Questions of Clarification from John Offord

CHILTERN RAILWAYS RESPONSE TO APPLICATION FOR COSTS

CRCL/R/RI/OBJ238/1	Chiltern Railways Response to Application for Costs by Mr & Mrs Offord and Mr & Mrs Bradshaw
CRCL/R/RI/OBJ238/2	Chiltern Railways Rebuttal in relation to the Application for Costs by Mr & Mrs Offord and Mr & Mrs Bradshaw

SUPPORTER DOCUMENTS

SUPP14/16	Representation by Railfuture
SUPP/46	Representation by Pauline Wyman
SUPP/47	Written representation by Tunde Scott

OBJECTOR DOCUMENTS

OBJ9/2	Statement of Case of Drs Drolet and Thomas
OBJ9/3	Proof of evidence of Drs Drolet and Thomas
OBJ9/4	Response to Chiltern's rebuttal of Drs Drolet and Thomas
OBJ14/3	Statement of Case of Mr Dancey on behalf of Quadrangle Management
OBJ14/4	Proof of evidence of Mr Dancey on behalf of Quadrangle Management
OBJ14/5	Closing submissions of Mr Dancey on behalf of Quadrangle Management
OBJ33/13	Letter dated 21 March 2012 from the Clerk to Gosford & Water Eaton Parish Council
OBJ48/1	Letter dated 27 March 2012 from the Chair of Governors, Wolvercote Primary School
OBJ61/3	Statement of Case of Councillor Mike Gotch
OBJ61/4	Proof of evidence of Councillor Mike Gotch
OBJ76/1W	Written representation of Alan Fraser
OBJ77/3	Statement of Case of Mr Thorowgood and Ms Chance (Jointly with Engage Oxford OBJ/297)
OBJ88/5	Representation by Mr P Napier
OBJ88/6	Statement of Case of Mr P Napier
OBJ88/7	Proof of evidence of Mr P Napier
OBJ106/2	Representation by Edwin and Leanne McClements
OBJ106/3	Statement of Case of Edwin and Leanne McClements
OBJ106/4a	Proof of evidence of Edwin and Leanne McClements
OBJ106/4b	Summary proof of evidence of Edwin and Leanne McClements
OBJ106/4c	Extract from the World Health Organisation's Guidelines for Community Noise, part 3 – Adverse Health Effects
OBJ106/4d	Extracts from the World Health Organisation's Guidelines for Community Noise, part 4 – Guideline Values
OBJ106/4e	Extracts from the World Health Organisation's, Night Noise Guidelines for Europe
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OBJ106/6	Email dated 13 June 2012 from Mr McClements regarding Article 8 – Right to respect for private and family life
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OBJ123/26	Representation by Sean Feeney
OBJ123/27	Statement of Case of Sean Feeney
OBJ123/28	Formal application to the Inspector, dated 24 April 2012, to submit a proof of evidence and supporting documents by electronic means
OBJ123/29	Formal application, dated 24 April 2012, to Chiltern to submit a proof of evidence and supporting documents by electronic means
OBJ123/30	Proof of Evidence of Sean Feeney
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OBJ123/98	Closing Submissions by Mr Feeney
OBJ123/98a	Pull down thy vanity, Ezra Pound
OBJ143/4	Representation by Ms M Rosenberg
OBJ149/4	Representation by Sir Muir & Lady Jackie Gray
OBJ149/5	Proof of evidence of Sir Muir Gray
OBJ213/10	Representation by Rosemary Harris
OBJ213/11	Statement of Case of Rosemary Harris
OBJ213/12	Proof of evidence of Rosemary Harris
OBJ213/12a	Appendices to proof of evidence of Rosemary Harris
OBJ213/13	Letter dated 17 February 2010 from Natural England responding to consultation on the Proposed Chiltern Railways (Bicester to Oxford Improvements) Order
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OBJ234/16a	Appendices to rebuttal proof of evidence of Dr Robertson
OBJ234/17	Note on risk to bats by Dr Robertson
OBJ234/18	Closing submissions of Dr Robertson
OBJ235/3	Email dated 11 March 2012 from Ms Sushila Dhall

OBJ238/9	Representation by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ238/10	Statement of Case of John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ238/11	Proof of evidence of John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ238/12	Cost application by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ238/13	Question of Clarification by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw on the evidence of Mr Fraser
OBJ238/14	Rebuttal proof of evidence by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw on the evidence of Mr Fraser
OBJ238/15	Continuation for application of costs on the grounds of unreasonable behaviour by Chiltern Railways by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ238/16	Response by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw to CRCL/R/RI/OBJ238/1
OBJ238/17	Email dated 11 June 2012 from Mr Offord, correcting the reference in OBJ238/15
OBJ238/18	Response to Chiltern's CRCL/R/RI/OBJ1 and 2 re Costs
OBJ238/18a	Calculation of costs caused by Chiltern Railways' unreasonable behaviour
OBJ238/19	Closing submissions by John Offord on behalf of Mr and Mrs Offord and Mr and Mrs Bradshaw
OBJ246/7	Representation by Natural England
OBJ246/8	Letter dated 20 March 2012 from Natural England to the Transport and Works Act Orders Unit
OBJ246/9	Statement of Case of Natural England
OBJ246/10	Proof of evidence and appendices of Andrew Hearle, Natural England
OBJ246/11	Natural England's Responses to Dr Robertson's Questions of Clarification
OBJ246/12	Bat species data at Wolvercot Tunnel
OBJ246/13	Licensing history: Bats at Wolvercot Tunnel
OBJ246/13A	Corrected version of Licensing history: Bats at Wolvercot Tunnel
OBJ246/13B	Tracked change corrected version of Licensing history: Bats at Wolvercot Tunnel
OBJ246/14	Refreshing Natural England's European Site Conservation Objectives
OBJ246/15	Wolvercote Meadows SSSI
OBJ246/16	Response to Dr Robertson's rebuttal OBJ234/16
OBJ246/17	Draft planning condition proposed by Natural England and CRCL in relation to the deterrent lighting system at Wolvercot Tunnel
OBJ246/18	Statement of Rebecca Tibbetts the officer responsible for the SSSIs the subject of the inquiry
OBJ246/19	Bat Licence for Wolvercot Tunnel
OBJ246/20	Lighting research study in Wolvercot Tunnel Revised Method Statement
OBJ246/21	Closing submissions of Natural England
OBJ255/4	Statement of Case of Peter Claye
OBJ255/5	Proof of evidence of Peter Claye
OBJ255/6	Revised proof of evidence of Peter Claye
OBJ255/7	Noise Policy Statement for England (NPSE), Defra, March 2012

OBJ273/1W	Written representation of Mary Hardy
OBJ286/3	Representation by Wendlebury Parish Council
OBJ286/4	Supporting statement on behalf of Wendlebury Parish Council re Wendlebury Gate Stables
OBJ297/6	Letter dated 3 April 2012 from Reuben Packham, Acoustics 24 Ltd on behalf of Engage Oxford
OBJ297/7	Statement of Case of Engage Oxford (Jointly with Mr Thorowgood and Ms Chance OBJ/077)
OBJ297/8	Proof of evidence of Reuben Packham, 24 Acoustics, on behalf of Engage Oxford
OBJ297/9	Rebuttal proof of evidence of Reuben Packham, 24 Acoustics, on behalf of Engage Oxford
OBJ297/10	Closing submissions of Reuben Packham, 24 Acoustics, on behalf of Engage Oxford
OBJ312/3	Representation by Nicola Blackwood MP
OBJ312/4	Proof of evidence of Nicola Blackwood MP
OBJ321/3	Representation by Wolvercote Commoners
OBJ321/4	Proof of evidence of Wolvercote Commoners
OBJ321/5	Standing Advice Species Sheet: Bats, Natural England, April 2012
OBJ/324	Representation by Joanna Dyson

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REP15	Representation by J Howell MP
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