Response to ExA's Second Written Questions:
Principal Issue 10 Noise and Vibration

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The Infrastructure Planning (Examination Procedure) Rules 2010
A14 Cambridge to Huntingdon improvement scheme

Development Consent Order Application
Response to ExA’s Second Written Questions:
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10 Noise and Vibration

Question 2.10.1
Post-construction noise monitoring has been requested by the local authorities particularly in relation to the impacts on Brampton Primary School and at Stewart Close, Brampton, RAF Brampton, Pear Tree Close, Fenstanton, Rhadegund Cottages, Cambridge, Hackers Fruit Farm, Lolworth and Catchall Farm Cottages, Cambridge. How would this be secured in the DCO? (CCC para 7.1.3/4, REP3-006)

Response

1. Post construction monitoring is already proposed in the Scheme Operational Noise and Vibration Policy contained within the Environmental Statement (ES) (Applicant reference 6.3, PINS reference APP-705). Post completion checks will be carried out in relation to the duty placed upon Highways England to assess noise levels following the opening of the scheme with regard to the Noise Insulation Regulations 1975 (as amended). This would include making provision for checking to ensure that all properties potentially qualifying for noise insulation are properly identified (refer to Highways England’s Comments on the Written Representations Report 1: Local Authorities at 4.9.10, Applicant reference HE-A14- EX- 49, PINS reference REP4-011).

2. A new requirement has been added to the draft Development Consent Order (DCO) in relation to noise mitigation which will ensure that the mitigation measures are as set out in Chapter 14 of the ES (Applicant reference 6.1, PINS reference APP-345) (which includes the above Policy) and/or noise impacts are no greater than those reported in the ES (see page 3 of Highways England’s Document introducing amendments to the draft DCO (Rev 1) (Applicant reference HE-A14-EX- 61, PINS reference REP4-023)). This was included in the Revised Draft DCO submitted to the Examining Authority (ExA) at Deadline 4 (Paragraph 12, Part 1 of Schedule 2 (Applicant reference HE-A14-EX- 59, PINS reference REP4-021)). This requirement (verified by the employer’s representative) would secure noise mitigation through the detailed design of the scheme (if the DCO is made). Further detail on this is set out at paragraphs 9 to 11 below.

3. Beyond this, Highways England does not consider that post-construction noise monitoring is necessary because it cannot practically be used to check whether the impacts are greater or less than those reported in the ES. This is for the following reasons.
4. Post construction noise monitoring cannot practicably be used to check whether the magnitude and extent of any adverse impacts are greater or less than those reported in the ES. This is because the adverse impacts are, in the main, evaluated using the long term calculated noise change. The assessment of long term noise change impacts requires the identification of noise levels in the long term (over the first 15 years of operation) and evaluation of the magnitude of any long term change against impact thresholds of ±1dB, ±3dB, ±5dB and ±10dB. This can be done using calculated road traffic noise levels as discussed later. However, making such an evaluation using measured noise levels is impracticable for a number of reasons:

- Variation in ambient noise levels. Measured ambient noise levels at a given location will easily vary by several dB on a day-to-day basis. This means that the impact criteria could appear to be exceeded simply due to diurnal variation (e.g. wind direction, and fluctuation levels of road traffic on highways, etc.).

- Establishing long term noise levels. The assessment presented in the ES is primarily in terms of long term noise change based on forecast noise levels in 2035. It is impracticable to consider monitoring over such a long period of time and for any monitoring regime to only be able to report 15 years after the scheme comes into operation.

- Variability in monitoring equipment. Even assuming that all the monitoring equipment complied with the highest level specification set by International Standards, published research has shown that the sound level recorded by two meters measuring the same sound source, could easily vary by ±2dB\(^1\). This means that the impact

criteria could appear to be exceeded simply due to variability in monitoring equipment.

5. DMRB\(^2\) recommends that road traffic noise is calculated using the Calculation of Road Traffic Noise\(^3\) (CRTN) and this prediction methodology was used for the ES. It is also the method that the National Policy Statement for National Networks\(^4\) (NPSNN – paragraph 5.191) states should be used and is fully validated for that purpose. Paragraph A4.45 of DMRB explains:

“A4.45 The preferred method for calculating noise levels from road traffic is by prediction rather than by measurement (CRTN, paragraph 3). There are several reasons why the prediction method is preferred. In particular noise levels, although generally dominated by traffic noise, can be affected by non-traffic sources. Unless the extraneous noise from other sources is edited the results may lead to an over-estimation of traffic noise levels. However there are occasions when it is necessary to resort to measurements (CRTN, paragraph 38).”

6. Paragraph 38 of CRTN states:

“When to measure

(i) traffic conditions fall outside the range of validity of the Charts;

or (ii) traffic or site layout conditions are sufficiently complex or unusual to make the use of standard traffic data unreasonable;

or (iii) measurement provides a more economic method of determining the particular level of traffic noise.

However, the highway authority shall use the prediction method unless in their opinion it is inappropriate to the circumstance of the case.”

\(^2\) Highways Agency and Welsh Office (2011), Design Manual for Roads and Bridges Volume 11, Section 3, Part 7, HD213/11 Revision 1, Noise and Vibration

\(^3\) Calculation of Road Traffic Noise, Department of Transport and Welsh Office, 1988

7. In effect, paragraph 38 of CRTN suggests that the prediction method should be used in all situations unless the calculated noise level is in some way unreliable or outside of the range of validity for CRTN. For the vast majority of cases falling within the scope of the assessment of the scheme, the conditions set out in paragraph 38 are not met and there is nothing to suggest that the calculated noise change is unreliable.

8. As explained earlier in paragraph 1, the new requirement to the Draft DCO would secure noise mitigation through the detailed design of the scheme (if the DCO is made). In accordance with the requirement, the noise mitigation scheme must be approved by the Secretary of State and Highways England would be in breach of the DCO if the noise mitigation scheme was not implemented as approved.

9. Highways England would undertake post construction monitoring under the noise mitigation scheme as part of its Post Opening Project Evaluation (POPE) programme. This would include, for example, monitoring that noise barriers required by the DCO requirement are installed (in terms of location, length and height of barrier for example) and that the barriers are maintained. If visual inspection were to indicate a potential deficiency in the barrier performance, in-situ sound transmission tests, if appropriate, would be carried out to ensure that noise fence barriers meet the requirements of BS EN 1793 (1998 - 2015) Road traffic noise reducing devices. Such tests would use the “Test method for determining the acoustic performance” defined in the suite of BS EN 1793 standards.

10. In advance of post opening evaluation, the employer’s representative would also be responsible for ensuring that the various mitigation measures are built in accordance with the approved details.
Question 2.10.2
A new Requirement to address noise mitigation has been included in the revised draft DCO submitted for Deadline 4 (Requirement no.12). Do local authorities and others wish to comment?

Response
11. This question is not directed to Highways England and a response is therefore not provided.
Question 2.10.3

The County Council has indicated that the noise impacts with regard to the borrow pits have been assessed using criteria appropriate for road construction and not those appropriate for mineral extraction. The County Council has requested that noise impacts be appropriately mitigated in relation to the borrow pits. The applicant’s view is that the CoCP establishes control measures that would provide the most effective level of protection to ensure that the noise standards for mineral sites would be met in the majority of, if not all, cases. Would the local authorities wish to comment?

Response

12. This question is not directed to Highways England and a response is therefore not provided.
Question 2.10.4

With regard to the applicant’s answer to Q1.10.11, can the applicant and the University of Cambridge outline what progress has been made towards reaching agreement on the matters raised in the original question.

Response

13. The assessment location AL 761 referred to in Highways England’s response to question 1.10.11 (*Response to First Written Questions, Report 10: Noise and Vibration* (Applicant reference HE/A14/EX/37, PINS reference REP2-011)) is incorrect. The assessment location AL 761 is a separate University of Cambridge facility to the Sub-Department of Animal Behaviour at Madingley referred to in the Examining Authority’s (ExA’s) question 2.10.4. Following discussions between Highways England and the Sub-Department of Animal Behaviour the correct location further southwest at Madingley has now been considered (see Figure 10.1).

Figure 10.1 Extract from sheet 15 of figure 14.7 of the Environmental Statement Figures (Applicant reference 6.2, PINS reference APP-416), showing location of University of Cambridge facility Sub-Department of Animal Behaviour
14. Highways England held a discussion with the Sub-Department of Animal Behaviour at Madingley on 22 July 2015 regarding potential noise sensitivities at the facility in relation to the proposed A14 scheme improvements. The Sub-Department of Animal Behaviour explained the nature of the research work carried out in relation to birdsong at this location. This includes birds in the aviaries located within the premises and also studies of wild birds that are carried out in the near vicinity. As referred to in its formal pre-application statutory consultation response (dated 6 November 2014), the University Of Cambridge Sub-Department of Animal Behaviour has concerns regarding the potential impact of noise from the proposed scheme on the research work.

15. In the discussion with the parties Highways England summarised the results of the noise assessment carried out in this area based on Chapter 14 of the *Environmental Statement* (Applicant reference 6.1, PINS reference APP-345). Following this discussion, an agreement was made for Highways England to provide further details of noise levels associated with the proposed scheme, specifically at the location of the facility. Further assessment information was subsequently provided by email to the Sub-Department of Animal Behaviour confirming that operational traffic noise from the proposed scheme would result in a negligible increase in traffic noise of less than 0.5dB, and construction noise would be well below ambient noise levels at the facility.

16. During a follow-up discussion between the two parties, Highways England clarified that the operational traffic noise model takes full account of the vertical position of carriageways and the average height of noise propagation associated with elevated road links (such as the intersection in question).

17. Highways England also confirmed that the noise levels from construction activities are determined in isolation from other noise sources, and then compared with the existing ambient noise levels in any given assessment area. In this case, ambient noise levels are dominated by distant traffic noise. In Madingley, the predicted construction noise levels are substantially below ambient noise levels and the contribution to overall noise would therefore be negligible.

18. In conclusion, following discussions between Highways England and the Sub-Department of Animal Behaviour, and the provision of more detailed assessment information from Highways England, it was agreed in principle that the concerns of the Sub-Department of Animal Behaviour had been adequately addressed and potential noise impacts would be negligible at the facility. A Statement of Common Ground (SoCG) is being drafted to document this understanding which is currently being reviewed by the Sub-Department of Animal Behaviour. An updated SoCG has been submitted at deadline 7 and a final version will be submitted at deadline 8.
Question 2.10.5

SCDC is seeking additional noise impact assessment and mitigation at sensitive locations including Orchard Park Primary School, Neighbourhood Play/Recreation Area, Cambridge Regional College and Cambridge City Crematorium/Huntingdon Road Cemetery. What progress has been made in addressing these concerns?

Response

19. Information on these receptors was previously provided on pages 65-67 of Highways England’s Comments on Responses to ExA’s First Written Questions, question 1.10.1 (Applicant reference HE-A14-EX-56, PINS reference REP4-018). Highways England’s comments set out how the receptors at Orchard Park were assessed in the Environmental Statement (ES) (Applicant reference 6.1, PINS reference APP-340), and confirmed that there are no forecast adverse impacts or likely significant effects on these receptors due to road traffic noise associated with the scheme. In addition to Highways England’s comments on responses to question 1.10.1, Highways England’s comments on Cambridge City Council’s Written Representation (see chapter 2 of Highways England’s Comments on Written Representations Report 1 – Local Authorities (Applicant reference HE-A14-EX-49, PINS reference REP4-011)), also noted that with regard to Cambridge Crematorium / Huntingdon Road Cemetery (including the external Gardens of Remembrance) the local authority’s concerns related to traffic noise arising from the new access road to the south of the Crematorium. Highways England confirmed that the effect of noise from the new access road would be negligible and so it is not considered necessary to mitigate noise from this road.

20. Highways England and its advisors met again with South Cambridgeshire District Council (SCDC) on 22 July 2015 to discuss the Statement of Common Ground (SoCG) and further information was provided on the specific receptors that have been identified by the council and are referenced in this ExA question. The further information centred on mitigation of road traffic noise (noting that the Orchard Park Primary School, the adjacent Neighbourhood Play/Recreation Area, and Cambridge Regional College are not screened by the existing noise barrier at Orchard Park that will be retained by the scheme).
21. Since submitting the application Highways England has continued to consider how best to mitigate the adverse impacts of the scheme and to enhance the benefits of the scheme at residential areas that are already exposed to high levels of road traffic noise. In particular, it has considered the engineering and financial implications of using higher performance road surfaces to reduce traffic noise levels, all in the context of meeting the requirements of the National Policy Statement for National Networks\(^5\) (NPSNN), namely that Best Available Techniques\(^6\) are considered to reduce noise impacts and for them to be implemented where they are sustainable\(^7\). In determining whether additional mitigation is sustainable, the on-going review of the mitigation proposals has considered:

- Benefit (monetised benefit of noise reduction evaluated using WebTAG\(^8\)) compared to cost of the mitigation;
- Engineering practicability;
- Other environmental effects potentially caused by the mitigation (for example landscape or visual effects); and
- Stakeholder engagement and consultation responses.

22. At the meeting of 22 July 2015, SCDC were informed of Highways England’s continued consideration of the proposed mitigation measures and that this included consideration of very Low Noise Surfaces (vLNS) and further barrier options. vLNS, which is an emerging technology, has a higher performance (around 2.5 dB quieter) than the Low Noise Surfacing assumed in the ES for the Cambridge Northern Bypass in line with DMRB\(^9\). vLNS is achievable with thin wearing coarse surfacing.

23. The preliminary results arising from this review were shared with SCDC and the updated SoCG will reflect the fact that these discussions are ongoing and that there will be further discussions on the noise assessments and the proposed mitigation. It will also recognise that these ongoing discussions are linked to the further analysis that is being undertaken in accordance with IAN/185 with respect to the Cambridge Northern Bypass and Highways England’s commitment made in response to ExA’s Question 1.10.4 (Response to First Written Questions, Report 10: Noise and Vibration (Applicant reference HE/A14/EX/37, PINS reference REP2-011) (see also Highways England’s response to Q2.10.8 for a more detailed response on this point).

24. In light of the on-going development of the package of mitigation measures, Highways England confirms that it will incorporate the following additional mitigation within the scheme that would reduce noise impacts at Orchard Primary School, Neighbourhood Play/Recreation Area, Cambridge Regional College and all receptors at Orchard Park, Histon and Girton:

- 2km of vLNS on A14 at Girton
3km of vLNS on A14 at Orchard Park

25. The Figure below indicates where lengths of vLNS are proposed:

![Figure 10.2: Proposed LNS (RSI[\(= -3.5\) or \(-5\)dB]) and vLNS (RSI = -7.5 dB)](image)

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6 NPSNN 5.189
7 NPSNN 5.195
8 Noise monetisations based on the 2014 and the ‘new’ 2015 Webtag has been considered in this analysis as published at the web address below. Values based on the November 2014 version of Webtag are also presented.
10 RSI stands for ‘Road Surface Influence’ and is a parameter used for quantifying road surfacing noise performance. See Appendix A of DMRB HD 213/11 for more information
26. vLNS would be provided in these two areas as part of the package of noise mitigation measures proposed. vLNS is proposed in these areas because it meets the sustainability tests set out in the ES. In particular, vLNS is considered to be sustainable in these areas because they are densely occupied areas that are already exposed to high levels of road traffic noise and, as such, the monetised benefits (evaluated using the WebTAG methodology) significantly outweigh the additional costs of providing vLNS at these two locations.

27. Highways England continues to engage with SCDC and any further outcomes from the engagement will be recorded in updates to the SoCG to be submitted at Deadline 8.
Question 2.10.6

SCDC have requested clarification as to why a predicted baseline calculation method was used and pointed out some discrepancy with baseline noise levels as monitored and as predicted in the vicinity of Orchard Park. Could the applicant comment?

Response

28. This question asks about two related matters: a) why a calculated baseline noise level was used as the basis of the noise assessment, and b) what is the reason for the discrepancy between the measured and calculated noise levels at Orchard Park.

29. Information on point a) is provided in Highways England’s Comments on Responses to the ExA’s First Written Questions (Applicant reference HE/A14/EX/56, page 68, PINS reference REP4-018). The response explains that:

“The Calculation of Road Traffic Noise Method (CRTN) (Department of Transport and Welsh Office) (1988) has been used to provide a predicted baseline along the Cambridge Northern Bypass road traffic noise levels from the scheme in line with the Design Manual for Roads and Bridges[1]. CRTN is the recognised method for predicting impacts from highway schemes, is the method that the National Networks National Policy Statement for National Networks (NPSNN – paragraph 5.191) states should be used and is fully validated for that purpose.”

30. A further explanation as to why calculated baseline noise levels are used rather than measured baseline noise levels is given in Highways England’s response to Q2.10.1. Essentially, calculated traffic noise levels, with and without the scheme, are used because this is the most reliable method of assessing a noise change where ambient noise levels are dominated by road traffic noise. This is the reason why the Design Manual for Roads and Bridge (DMRB) requires calculated noise levels to be used to assess a noise change.

31. Further information as to why calculated levels were used to assess the noise change, rather than measured baseline levels was also given on page 68 of Highways England’s Comments on Responses to ExA’s First Written Questions, namely that the baseline noise measurements have been used to characterise the areas and to understand the composition of the ambient noise more than to validate/verify the noise model. This is useful, for example, to inform assessments in areas not dominated by road traffic noise such as the Huntingdon Southern Bypass, rather than the Cambridge Northern Bypass where baseline levels at wayside housing are dominated by road traffic noise. Further discussion on noise monitoring is provided in Highways England’s response to Question 2.10.1.
32. The following addresses point b) and the potential discrepancies identified by SCDC. The baseline noise survey was reported in Appendix 14.02 of the Environmental Statement Appendices (Applicant reference 6.3, PINS reference APP-706). Two tables are presented: Table 4.1 reports the baseline information for measured noise levels dominated by road traffic noise and shows differences between measured and predicted levels for 6 measurement locations: 1, 4, 7, 8, 9 and 10. Location 10 is the measurement location that is most relevant to Orchard Park. At this monitoring location the differences between predicted and measured levels range were 2.8 dB during the day and -1.5 at night. Highways England considers that this represents reasonable agreement and is well within the level of variability that might be expected when comparing measured and calculated noise levels.

33. The discrepancies referred to relate to differences between the measured baseline and the calculated noise levels at assessment locations (ALs) 798 and 799 because of variations in height. The predicted baseline (without-scheme in the year 2020) at the measurement location L10 is 55.8dB (daytime) and 48.0dB (night-time) (table 4.1 in appendix 14.02 of the Environmental Statement Appendices). However, the predicted baseline levels reported in Appendix 14.06 (Applicant reference 6.3, PINS reference APP-710) are 60.5dB (daytime) and 53dB (night-time), and 59.8dB (daytime) and 52dB (night-time) for the nearby ALs 798 and 799 respectively. On the face of it, this could be seen as a discrepancy between the measured and calculated baseline noise levels in the order of 4-5dB. However, these differences arise because of the differences in the height at which the predictions are carried out. The noise levels reported in Appendix 14.06 relate to the fourth floor and third floor height for AL 798 and AL 799 respectively, where less screening is afforded by the noise barrier adjacent to the A14, in order to present a worst-case assessment in the ES (i.e. a worst case assessment is reported). The measurement location, on the other hand, was at 1.5 metres above the ground and so would be afforded greater screening by the barrier. A 1.5 metre measurement height is standard practice for undertaking baseline noise measurements.

Question 2.10.7
Ref Q1.10.3. While the applicant has indicated that it is proposed that the contractors will seek to submit S61 prior consent notices, what is the process for ensuring this takes place?

Response

34. Section 13 of the Code of Construction Practice (CoCP) (Applicant reference HE/A14/EX/64, PINS reference REP-026) requires the main contractors to seek and obtain prior consents from the relevant local authority under section 61 of the Control of Pollution Act 1974 for the works.

35. Schedule 2, Part 1, Requirement 4 of the Revised Draft Development Consent Order (DCO) (Applicant reference HE-A14-EX-59, PINS reference REP4-021) requires that the development is carried out in accordance with the provisions of the CoCP. If it is not complied with the contractor (and indeed Highways England) would be in breach of the terms of the DCO. Under section161 of the Planning Act 2008 this is an offence, and the local planning authority has a number of actions open to it. If a person is guilty of an offence the local authority can issue a notice of unauthorised works requiring the rectification of the breach. The local authority can apply for an injunction with respect to any actual or apprehended prohibited activity constituting an offence.
Question 2.10.8

Please provide an update in relation to the detailed review of the implications of IAN 185/15 with regard to the noise assessment as referred to in Q1.10.4.

Response

36. Highways England’s response to Q1.10.4 (See Highways England’s Response to ExA’s First Written Questions: Report 10 Noise and Vibration (Applicant reference HE-A14-EX-37, PINS reference REP2-011)) identified that there may be implications for the noise assessment alongside the section of the Cambridge Northern Bypass between the Histon and Milton interchanges, as a result of implementing the methodology laid out in IAN 185/15.

37. In order to progress this work, Highways England is analysing ‘as-measured’ traffic speed data for the Cambridge Northern Bypass between the Histon and Milton interchanges and undertaking a detailed review for the receptors located alongside the Cambridge Northern Bypass.

38. As the IAN 185/15 guidance is relatively new, the applicant is liaising with the authors of IAN 185/15 to ensure that the method of assessment carried out is in accordance with the guidance.

39. Highways England anticipates this work will be complete by Deadline 8 of the examination timetable (2 September 2015). Highways England will continue to engage with South Cambridgeshire District Council on this matter and will update it as appropriate.

40. Highways England will keep South Cambridgeshire District Council and Cambridge City Council abreast of this work and will document discussions within the Statements of Common Ground accordingly, as submitted at deadline 7 and updated versions of which will be submitted to the examination at deadline 8.
Question 2.10.9
SCDC are seeking changes to the assessment of night time effect and receptors affected. What progress has been made with discussions between the parties?

Response

41. A full night-time assessment is presented in chapter 14 of the Environmental Statement (ES) (Applicant reference 6.1, PINS reference APP-345) in accordance with the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 7, HD213/11. The assessment reported goes beyond that required by the DMRB methodology because a night-time assessment has been undertaken for all the receptor locations to ensure that the scheme can be shown to meet the aims of government noise policy as set out at paragraph 5.195 of the National Policy Statement for National Networks.

42. During a meeting that was held between Highways England and South Cambridgeshire District Council (SCDC) on 22 July 2015, SCDC clarified that it does not consider the assessment of night time effects to be inadequate per se but that the reporting of the night time effects is not strictly in accordance with the DMRB reporting requirements and, in particular, paragraph A1.19 which requires:

“xiii) Sensitive receptors should be highlighted which meet the following night time noise criteria in the long-term:

- where the introduction of a project results in a sensitive receptor being exposed to night time noise levels in excess of 55 dB $L_{\text{night, outside}}$ where it is currently below this level; and

- where a receptor is exposed to pre-existing $L_{\text{night, outside}}$ in excess of 55 dB and this is predicted to increase.”

43. Highways England has provided further information to SCDC to explain how the DMRB reporting requirements are met for the night-time period. A summary of the number of receptors within SCDC exposed to night time noise levels in excess of 55dB, with and without the scheme, was also provided. SCDC has considered all the information provided on the night time assessment and subsequently confirmed that it is sufficient. A Statement of Common Ground (SoCG) documenting these discussions has been issued to the Examining Authority at deadline 7 of the examination timetable.

44. Highways England is grateful for the clarification from SCDC that it does not consider the assessment of night time effects to be inadequate per se and that concerns about reporting have now been resolved.
Question 2.10.10

Hilton Action on Traffic (HAT) and Hilton Parish Council have engaged a noise consultant to consider the effects of the scheme. Has dialogue taken place between the parties and if so, what was the outcome? If not, why not?

Response

45. A meeting was held with Hilton Parish Council on the 22 July 2015, where Highways England explained the basis and results of the noise assessments. Hilton Parish Council explained that they had commissioned an independent noise report but were not currently in a position to share the report with Highways England. An independent noise report was then submitted by Hilton Parish Council to the Examining Authority as a late submission at deadline 5. A further meeting was held with Hilton Parish Council on 11 August 2015, when the content of the independent noise report was discussed.

46. A meeting was held with Hilton Action on Traffic (HAT) on 10 August to discuss noise as well as other matters. Highways England explained the basis of its noise assessment. The independent noise report submitted by the Hilton Parish Council to the Examining Authority was also discussed.

47. Highways England does not accept the findings of the assessment provided on behalf of Hilton Parish Council and the recommendations contained in the report because:

- Highways England’s noise assessment has been carried out in accordance with the relevant policies, guidance and standards. In particular, the noise assessment has been carried out in accordance with the Design Manual for Roads and Bridges (DMRB)14. The Calculation of Road Traffic Noise15 (CRTN), which is the recognised method for calculating road traffic noise in the UK has been used. It is also the method that the National Policy Statement for National Networks requires.

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15 Calculation of Road Traffic Noise, Department of Transport and Welsh Office, 1988
Networks16 (NPSNN – paragraph 5.191) states should be used and is fully validated for that purpose.

- Hilton Parish Council’s noise expert has not carried out a proper assessment. In particular, CRTN has not been used and the guidance set out in the DMRB has not been followed. For example, only the new bypass has been modelled and no other roads within the study area have been included in the model. The noise change, with and without the scheme, is not presented. Consequently, the report cannot be relied upon to justify any further noise mitigation. The report does not purport to present a full and proper assessment. The stated starting point for the assessment is to assume that additional mitigation is necessary and then it goes on to consider the level of noise attenuation expected at receptor locations at Hilton with different barrier options.

- The assessment of different barrier options has not been carried out using the correct methodology, i.e. CRTN. The prediction method used is not stated and the underpinning assumptions are not clearly stated, e.g. road surfacing assumptions. It is not possible therefore to understand the basis of the claimed barrier performance.

- The report has not considered whether the proposed mitigation is sustainable or not. In particular, impacts on the landscape are not considered and neither is the relative cost/benefit of the recommended barrier option considered.

48. In addition to the above, Highways England has raised a number of technical queries on the independent report. Highways England will provide a note on the technical matters raised in the independent noise report. The note will be provided to Hilton Parish Council and to HAT. This will allow their noise specialist to consider the technical matters raised and will form the basis for further engagement.

49. Statements of Common Ground with HAT and Hilton Parish Council have been prepared and issued at Deadline 7. The final versions will be submitted to the ExA at deadline 8 of the examination timetable.

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Question 2.10.11

A new proposed Requirement (12) does not provide for consultation with local authorities on the basis that noise issues are considered by the applicant to be a technical trunk road design issue on which the applicant has the necessary expertise. Does the applicant and local authorities wish to comment?

Response

50. Highways England considers its position to be appropriate in light of common practice with improvements of the strategic road network, where local authorities do not deal with issues such as noise. Highways England is happy to discuss any residual concerns with the local authorities and will respond to any comments on this written question (and any responses to written question 2.6.5) at Deadline 8.
Question 2.10.12

‘A 2m high absorptive barrier is proposed alongside the B1043 (A1 southbound off-slip) (Ref M16 in Table 14.21 of Chapter 14 of ES APP-345 and Figure 14.7 of ES APP-416). Can the applicant explain why the proposed barrier on this side of the A1 is proposed to be 2m high when on the opposite carriageway the proposal is to replace the existing 2m reflective barriers with 4m absorptive and additional 2m absorptive barrier alongside existing 2m earth bund?’

Response

51. A new 2m high barrier is proposed alongside the B1043 to protect the receptors located to the east, including the Lordsway Park Residents. The 2m high barrier is different to that proposed to the west of the A1, to protect the residents located on that side of the carriageway, to reflect the difference in circumstances (height of carriageway in relation to the height of the receptors and the separation distances between the carriageway and the receptors).

52. The 2m barrier alongside the B1043 is proposed as part of a package of mitigation measures to mitigate the effect of road traffic noise on residents at Lordsway Park. It is considered that such mitigation is appropriate as it minimises, as far as sustainable, any adverse effects on health and quality of life and avoids significant effects for those residents.

53. The assessment reported in the Environmental Statement (ES) (Applicant reference 6.1, PINS reference APP-345) identified that a 2m high noise barrier fence would be sufficient to avoid adverse impacts at those receptors located to the east of the scheme including the residents at Lordsway Park. The inclusion of the proposed 2m high east noise barrier fence would work in conjunction with the existing barrier between the B1043 and the A1 to reduce traffic noise from the dominant A1 noise source. Without the additional 2m barrier the forecast long-term noise increase at Assessment Location AL104 (representative of properties at Lordsway Park as illustrated on sheet 2 of figure 14.05 of the Environmental Statement Figures (Applicant reference 6.2, PINS reference APP-414)) is around 1.8 dB (this is the increase between year 2020 without the scheme and year 2035 with the scheme). With the additional 2m noise barrier fence the forecast long-term noise change at AL104 is -1.9 dB (as presented in appendix 14.06 (Applicant reference 6.3, PINS reference APP-710)).
54. To the west of the A1, receptors at Alconbury would be subject to a likely adverse significant noise effect without the proposed mitigation including the 4m high barrier. The forecast long-term noise increase at AL107 (Frumetty Lane), AL112 (Maple End) and AL15930 (High St west of A1) as illustrated on sheet 2 of figure 14.05 is around 2.8 dB. As the existing noise levels are already high at locations to the west of the A1 (located at an Important Area\textsuperscript{17}) such increases were considered to be moderate impacts. In order to avoid the moderate impacts at the west of the A1 it is proposed to increase the height of the barrier to 4m. The proposed 4m noise barrier fence (or earth bund combined with noise barrier fence) affords noise mitigation to a greater distance from the barrier thus providing increased benefit to a wider area of the community. With the proposed 4m noise barrier the forecast long-term change at AL107, AL112 and AL15930 is in the range of -1.0 to +1.7 dB (as presented in appendix 14.06), which ranges from minor adverse to minor beneficial impact.

55. Since submitting the application Highways England has continued to consider how best to mitigate the adverse impacts of the scheme and to enhance the benefits of the scheme at residential areas that are already exposed to high levels of road traffic noise. In particular, it has considered the engineering and financial implications of using higher performance road surfaces to reduce traffic noise levels, all in the context of meeting the requirements of the National Policy Statement for National Networks\textsuperscript{18} (NPSNN), namely that Best Available Techniques\textsuperscript{19} are considered to reduce noise impacts and for them to be implemented where they are sustainable\textsuperscript{20}.

56. At a meeting on 22 July 2015, Huntingdon District Council was informed of Highways England's continued consideration of the proposed mitigation measures and that this included consideration of very Low Noise Surfaces (vLNS) and an extension to the barrier proposed to the west of Alconbury. The higher performance lower-noise surfacing solutions have a performance around 2.5 dB better than standard low noise surfacing, which is achievable with thin surface coarse systems.

57. The results of preliminary work were shared with the Council and a Statement of Common Ground (SoCG) between Highways England and Huntingdon District Council will reflect the fact that these discussions are ongoing and that there will be further discussions on the noise assessments and the proposed mitigation. The updated SoCG will be submitted at Deadline 8.

\textsuperscript{17} Important Areas with respect to noise from major roads are defined in the 2014 Noise Action Plan for Roads as the locations where the 1% of the population that are affected by the highest noise levels from major roads based on the results of Defra’s national strategic noise mapping.

\textsuperscript{18} https://www.gov.uk/government/publications/national-policy-statement-for-national-networks

\textsuperscript{19} NPSNN 5.189

\textsuperscript{20} NPSNN 5.195
58. In light of the on-going development of the package of mitigation measures, Highways England confirms that vLNS would be provided on this section of the A1 as part of package of noise mitigation measures proposed to minimise the effects of noise on the residents of Alconbury (to the east and west of the scheme). vLNS is proposed in this area because it meets the sustainability tests set out in the ES. In particular, vLNS is considered to be sustainable in this area because Alconbury is a densely occupied area that is already exposed to high levels of road traffic noise and, as such, the monetised benefits (evaluated using the WebTAG methodology\textsuperscript{21}) significantly outweigh the additional costs of providing vLNS in this area.

59. The Figure below indicates where the vLNS and the extended barrier is proposed:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure10.3.png}
\caption{Proposed vLNS and Extended Barrier}
\end{figure}

\textsuperscript{21} https://www.gov.uk/transport-analysis-guidance-webtag
60. The plan shows that the proposed extent of the vLNS will be of direct benefit to the residents of Lordsway Park and Alconbury located to the east and west of the scheme.
Question 2.10.13

Can the applicant provide an update regarding discussions with Buckden Marina Residents Association about noise data and the applicant’s noise model. The Residents Association may wish to comment.

Response

61. A meeting was held between Highways England and Buckden Marina Residents Association on 20 July 2015. Buckden Marina Residents Association provided information to Highways England clarifying that the lodges at the Marina complex are used for residential purposes to varying degrees at all times of the year.

62. A further meeting was held on 10 August 2015 between Highways England and Buckden Marina Residents Association. Specialist noise advisors from each party were present at the meeting. It was advised that as the nature of the marina complex was now fully understood, the Marina lodges would be treated as residential receptors and further study and analysis undertaken accordingly. A demonstration of the Highways England noise model was given, including the noise model parameters, such as topography, heights, surfaces and information on the calculated traffic noise levels with the proposed scheme was provided and discussed. The use and application of Calculation of Road Traffic Noise (CRTN), Design Manual for Roads and Bridges (DMRB), BS8233:2014 and the World Health Organisation were agreed as appropriate. In addition, Highways England agreed to undertake a sensitivity test and provide calculated traffic noise levels with the scheme and assuming: a) a 2m high barrier option, and b) a very low noise surface with an assumed performance of 2 dB better than the current assumption.

63. The results of the baseline noise measurements were discussed. In particular, the differences between the two sets of measurements taken on behalf of Highways England and Buckden Marina Residents Association, at monitoring location L3. It was agreed to exchange the raw baseline noise data so that the reasons for the variability in the data can be analysed in more detail. This will allow further discussion to take place with the aim of establishing whether the measured ambient noise levels can be agreed or not. The detailed noise measurement data will be exchanged by 19 August 2015 with the aim of establishing matters of agreement or disagreement on the measured ambient noise levels no later than 26 August 2015; this will, in turn, enable further discussion on the other noise related matters to be undertaken.

64. The outcome of these discussions is reflected in the Statement of Common Ground submitted at Deadline 7 with a further update (following the exchange of data outlined above) at Deadline 8.