

A66 Northern Trans-Pennine Project

TR010062

Habitats Regulations Assessment: Position Statement

ANNEX 5

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CONTENTS

1. Executive Summary	1
2. Introduction	1
2.2. HRA Stage 1: Screening	1
2.3. HRA Stage 2: Appropriate Assessment	2
2.4. HRA Supplementary Note – 26 May 2023	3
2.5. HRA Second Supplementary Note (Annex I to Applicant’s response to the Secretary of State’s Request for Information dated 11 August 2023) – 25 August 2023 (post Examination)	13
2.6. Speed Restrictions and other possible mitigation	14
2.7. Conclusion	16

1. Executive Summary

- 1.1.1. This Position Statement is intended to summarise the findings of the technical and ecological assessments and associated consultation with Natural England with regards to the Habitat Regulations Assessment (HRA) of the North Pennine Moors Special Area of Conservation (SAC). Specifically, the Position Statement reaffirms the Applicant's conclusion that there is no potential for an adverse effect on the integrity (AEol) of the North Pennine Moors SAC as a result of air quality changes resulting from the A66 Project in combination with background growth and committed developments.
- 1.1.2. The Position Statement provides a summary of the aspects of the HRA where Natural England has raised concerns during consultation (in chronological order) and signposts the Secretary of State (SoS) to all relevant HRA documentation to aid in the decision making process.
- 1.1.3. Based on the best available scientific evidence as presented in the HRA reports and supporting documents the Applicant maintains the conclusion that an AEol of the North Pennine Moors SAC can be ruled out.
- 1.1.4. In response to the SoS' Request for Information (Rfi) dated 28 September 2023 paragraphs 2-3, this Position Statement also summarises the Applicant's position with regard to speed restrictions. As set out in Applicant's response to that Rfi dated 5 October 2023, and without prejudice to the Applicant's primary position of there being no AEol from the Project on the SAC, speed restrictions would not adequately and sufficiently address the air quality impacts. In addition, speed restrictions would be contrary to the Project's objectives and accordingly are not a feasible measure.

2. Introduction

- 2.1.1. The following sections summarise:
 - The stages of the HRA process with respect to the Project with particular focus on the North Pennine Moors SAC
 - Natural England's position with respect to the HRA received during consultation, and
 - The Applicant's response to Natural England's position, evidencing why an AEol has been ruled out beyond reasonable scientific doubt.

2.2. HRA Stage 1: Screening

- 2.2.1. The purpose of stage 1 of the HRA, known as 'screening', is to establish whether the proposed development, alone or in combination with other plans or projects, will result in any *Likely Significant Effects* (LSE) on a European site.
- 2.2.2. Where LSE on a European site cannot be ruled out at the screening stage, the HRA progresses to Stage 2 'appropriate assessment' where the Applicant must consider whether those LSE will adversely affect the integrity of the European site(s) in view of its conservation objectives.

- 2.2.3. The screening process for the A66 Project¹ identified three European sites where LSE could not be ruled out. These were:
- River Eden SAC
 - North Pennine Moors SAC
 - North Pennine Moors Special Protection Area (SPA)
- 2.2.4. For the River Eden SAC, LSE resulting from construction and operation of the Project could not be ruled out as a result of:
- Land take / resource requirements / reduction of habitat
 - Disturbance of mobile species and species fragmentation
 - Species injury and mortality
 - Introduction and/or spread of invasive non-native species
 - Changes in surface and groundwater quality, quantity, and hydrogeology
 - Changes in hydrology and fluvial geomorphological processes
 - Changes in air quality
- 2.2.5. For the North Pennine Moors SAC, LSE resulting from the Project could not be ruled out as a result of:
- Changes in air quality during operation (associated with the Affected Road Network (ARN)). This was because the traffic modelling for the Project predicted an (in combination) increase in the Annual Average Daily Traffic (AADT) of 5941 vehicles, which is greater than the threshold defined by Design Manual for Roads and Bridges (DMRB) LA 115 (Highways England, 2020)² and Natural England Guidance (Natural England, 2018)³. These documents advise that increases in (in combination) traffic volumes of more than 1000 AADT have potential for impacts and require that increases above this threshold are subject to further assessment.
- 2.2.6. For the North Pennine Moors SPA, LSE resulting from the Project could not be ruled out as a result of:
- A reduction in suitable breeding and foraging habitat (as a result of changes in air quality described above during operation associated with ARN).

2.3. HRA Stage 2: Appropriate Assessment

- 2.3.1. As described above, Stage 2 of the HRA (Appropriate Assessment) considers whether LSE (that could not be ruled out at screening stage) will adversely affect the integrity of the European site(s) in view of its conservation objectives.
- 2.3.2. Subsequent to the Appropriate Assessment presented within the Statement to Inform Appropriate Assessment (SIAA)⁴, and in view of the relevant site conservation objectives, the potential for any adverse effect

¹ 3.5 Habitat Regulations Assessment Stage 1 Likely Significant Effects Report, document APP-234

² Highways England (2020) Design Manual for Roads and Bridges LA 115 Habitats Regulations assessment, Revision 1.

³ Natural England (2018) Approach to advising competent authorities on Road Traffic Emissions and HRAs V1.4 Final – June 2018 (NEA001).

⁴ 3.6 Habitat Regulations Assessment Stage 2 Statement to Inform Appropriate Assessment, document APP-235

on the integrity of the River Eden SAC, North Pennine Moors SAC and North Pennine Moors SPA was ruled out. The SIAA concluded that no reasonable scientific doubt remains and in the light of the best available evidence, the Project will not adversely affect the integrity of any European site, alone or in combination with other plans or projects.

- 2.3.3. This position was accepted by Natural England with respect to the River Eden SAC, particularly when considering the suite of Project Design Principles (Application Document 5.11, REP8-061) that aimed to safeguard the SAC, robust mitigation that was defined in the Environmental Management Plan (Application Document 2.7, REP8-005) and a commitment to ongoing consultation with Natural England during the detailed design and construction phases of the Project (see Application Document 4.5 Statement of Common Ground Natural England (Rev 5) / REP9-008 submitted at deadline 9).
- 2.3.4. Likewise, Natural England has accepted there would be no AEoI on the North Pennine Moors SPA through a reduction in suitable breeding and foraging habitat (as a result of changes in air quality associated with ARN) (see Application Document 4.5 Statement of Common Ground Natural England (Rev 5) / REP9-008 submitted at deadline 9).
- 2.3.5. Therefore, there is only one potential adverse impact that Natural England have not yet agreed can be ruled out as having no AEoI. This is the potential for air quality impacts to have AEoI on the North Pennine Moors SAC arising from the A66 Project in combination with background growth and committed developments. The Applicant and Natural England's positions on this potential impact is set out below. In brief, in May 2023 Natural England provided updated air quality advice reiterating advice it had given in relevant representations and written representations during the DCO Examination. In response, the Applicant prepared a HRA supplementary Note 1 ((Document REP9-036)⁵. Section 2.4 below outlines the areas of concern raised by Natural England and addresses each in turn.

2.4. HRA Supplementary Note – 26 May 2023

- 2.4.1. In response to Natural England's comments received (9 May 2023) on the SIAA (contained within Annex 1 of Document REP7-181 – Natural England's comments on the Report on Implications for European Sites) the Applicant prepared a HRA Supplementary Note (Document REP9-036)⁵ which was submitted during Examination, at deadline 9 (26 May 2023).
- 2.4.2. The aim of the supplementary note was to address Natural England's comments on the SIAA in relation to potential air quality impacts on the North Pennine Moors SAC, specifically in relation to blanket bog habitats adjacent to the existing A66 through potential air quality impacts arising in combination from increased vehicles during operation, and to present all information relating to air quality and the SAC in a single document for ease of reference. The key points and questions raised by

⁵ 7.52 Habitats Regulations Assessment Supplementary Note – North Pennine Moors SAC/SPA, document REP9-036

Natural England are listed below, followed by the Applicant's response addressing this concern.

- 2.4.3. **NE Point 1:** The SIAA only refers to nitrogen deposition (N dep) as the relevant threat mechanism. Both nitrogen oxides (NOx) and ammonia (NH₃) are emitted from road traffic (they are different pollutants with different mechanisms of impact).
- 2.4.4. **Applicant's Response to Point 1:** Further air quality analysis was undertaken covering both NOx and NH₃. The results are presented below.
- 2.4.5. For NH₃ the difference between the without Project (Do Minimum (DM)) and with Project (Do Something (DS)) NH₃ concentrations were compared against the relevant critical levels for NH₃. The maximum increase in concentrations as a result of the Project in the opening year (2029) is predicted to be 0.1µg/m³ at a location 5m from the edge of the road (on the SAC boundary). At this location there is predicted to be a 9.8% increase in NH₃ concentration. This reduces to 3.4% at 65m from the edge of the road (60m into the SAC). Beyond 65m (60m into the SAC) the impact of air pollution is considered to be imperceptible.
- 2.4.6. At 5m from the road edge, as a percentage of the lower critical level (1µg/m³) there is predicted to be a 13.7% increase in NH₃ concentrations. This reduces to 3.5% at 65m from the edge of the road (60m into the SAC).
- 2.4.7. With respect to NOx, there are no exceedances of the Critical Level (30µg/m³) as a result of the Project within 200m of the A66.
- 2.4.8. This data demonstrates the Zone of Influence (Zoi) presented in the SIAA within which a perceptible change in air quality was appropriate. The supplementary note then describes the potential for ecological effects within this Zoi, as a result of the predicted increases in N dep, NOx and NH₃.
- 2.4.9. **NE Point 2:** Clarificatory information required on the method of in-combination assessment in relation to exceedances of the critical load within 60m of North Pennine Moors SAC alone and in-combination with other existing and committed sources of the same pollutants.
- 2.4.10. **Applicant's Response to Point 2:** The air quality assessment has considered potential in-combination effects. The traffic data provided was from the strategic traffic model which includes background growth and all committed developments in the area which impact traffic flows and followed Department for Transport (DfT) guidance on Forecasting and Uncertainty⁶. A full list of the committed developments included in the traffic data are identified in the DCO Combined Modelling and Appraisal (ComMA) Report (Application Document Reference: 3.8, APP-237). Any developments that are not explicitly described in the ComMA report, and non-traffic sources, including sources relating to agriculture and industry, have been reviewed to ensure that there are no other

⁶ Department for Transport (2022) Transport Analysis Guidance Unit M4 Forecasting and Uncertainty – Department for Transport, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1139995/tag-m4-forecasting-and-uncertainty.pdf [accessed: 08/10/23]

sources that could act in combination that are not accounted for in the background concentrations.

- 2.4.11. In a letter to the ExA dated 14 July 2023⁷ Natural England agreed with the Applicant's approach, stating "*Natural England understand that the in-combination assessment has been addressed in the HRA note and agree that as long as the in-combination assessment includes all committed developments impacting traffic flows and emissions from other sources beyond the current background data provided by APIS then the in-combination assessment methodology is acceptable*".
- 2.4.12. The Applicant confirms that the in-combination assessment includes all committed developments impacting traffic flows and emissions from other sources beyond the current background data provided by APIS.
- 2.4.13. **NE Point 3:** Blanket bog in a mosaic with other flora/habitat types still represents the designated and sensitive features that Natural England must protect and enhance and therefore should be included within the calculation of area of blanket bog to be affected.
- 2.4.14. **Applicant's Response to Point 3:** As outlined in SIAA and Section 3 of the HRA Supplementary Note (Document REP9-036)⁵ blanket bog was often recorded in a mosaic with acid and marshy grassland. As part of the HRA Supplementary Note the Applicant re-calculated the total area of blanket bog to include blanket bog recorded with other habitat types; the total area of blanket bog (including blanket bog recorded as a mosaic with acid/marshy grassland) within the Project Zol totals 8.28ha^{*}; 3.18 ha of blanket bog and 5.11 ha of mosaic of blanket bog and acid grassland (Table 1). All of this blanket bog habitat (8.28ha^{*}) is located to the north of the A66; blanket bog was absent from within the Zol south of the road. For reference 8.28 ha^{*}, equates to 0.021% of the total blanket bog within the SAC and 0.008% of the entire SAC (Table 1)⁸.

⁷ Secretary of State Consultation – attachment. Secretary of State's consultation letter (11 August 2023) attachment – Natural England's response to the Applicants Habitats Regulations Assessment Supplementary Note. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010062/TR010062-002224-Natural%20England%20Response%20to%20HRA%20Supplementary%20Note%20-%2014%20July%202023.pdf>

^{*} Subject to rounding

⁸ Figure base on the Conservation Objectives Supplementary Advice for the North Pennine Moors SAC (Natural England, 2022) that states that approximately 38% of the site supports blanket bog, noting that this habitat type is also recorded in mosaics with H4010 Northern Atlantic Wet Heaths and to a lesser extent H4030 European dry heaths. Therefore, Natural England consider that this figure may be under or over recorded. The SAC covers an area of approximately 103,109.42ha. Therefore, blanket bog covers an area of approximately 39,181.58ha.

Table 1: Areas of blanket bog and blanket bog mosaic habitat within the SAC where an exceedance of 1% critical load is breached.

Habitat classification	Area of habitat where an exceedance of 1% critical load is breached (ha)	% of blanket bog habitat in the SAC	% of total habitat area in the SAC
Blanket bog (H7130 blanket bog)	3.18	0.008 %	0.003 %
Mosaic of blanket bog and acid grassland (H7130 blanket bog)	5.11	0.013 %	0.005 %
TOTAL	8.28*	0.021 %	0.008 %

- 2.4.15. **NE Point 4:** NECR210⁹ states that in the case of bog habitat, the observed relationship between species richness and nitrogen deposition is not curvi-linear. Species richness is not considered an appropriate metric to use in assessing change at bog sites because there are very few species present in this habitat type. This is not an appropriate evidence source to apply as part of this assessment.
- 2.4.16. **Applicant's Response to Point 4:** In line with advice from Natural England, the theoretical loss of one species metric, as presented in Table 21 NECR210 (Natural England, 2016)⁹ was not used to support the assessment in the SIAA, as it is not considered a suitable metric for assessing bog habitats. It should also be noted that no designated sites were screened out of further assessment based on the theoretical loss of one species metric, either at Stage 1 (Screening) or during Stage 2 (Appropriate Assessment) of the HRA process. This metric was presented in the SIAA to comply with the DMRB LA 105¹⁰ standard, but was not used as evidence in the consideration of adverse effect of site integrity. The evidence used by the Applicant to rule out AEoI is described below with respect to NE Point 5 and Point 6.
- 2.4.17. **NE Point 5:** Clarificatory information required in relation to the conclusion that the Project does not undermine Natural England's ability to achieve the conservation objectives of North Pennine Moors SAC in the future.
- 2.4.18. **Applicant's Response to Point 5:** The Conservation Objectives Supplementary Advice (Natural England, 2022)¹¹ sets a target of maintaining or restoring the appropriate concentrations and deposition

* Subject to rounding

⁹ Natural England (2016) Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., Power, S., Sheppard, L. & Stevens, C. 2016. Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210 (NECR210).

¹⁰ Highways England (2019) Design Manual for Roads and Bridges LA 105 Air quality, Revision 0.

¹¹ Natural England (2022) European Site Conservation Objectives: Supplementary advice on conserving and restoring site features for North Pennine Moors Special Area of Conservation Site Code: UK0030033.

of air pollutants to at, or below, the site relevant Critical Load or Level values indicated on APIS (APIS, 2023)¹².

- 2.4.19. The relevant Critical Load for blanket bog within the SAC equates to 5-10kgN/ha/yr. The current levels of nitrogen deposition on the SAC are exceeded with an average 19.4kgN/ha/yr. The outcome of this exceedance is that the levels of current nitrogen deposition conflict with the conservation objectives which are to restore as necessary the concentrations and deposition of air pollutants to below the site-relevant Critical Load. The conservation objective for the SAC is therefore to restore (rather than maintain) the concentration deposition of air pollutants.
- 2.4.20. Whilst it is acknowledged by the Applicant that the predicted increases in N dep and NH₃ may delay the restoration of concentration and deposition of air pollutants to below the critical levels and loads (respectively) within the Zol (i.e., 60m into the SAC), this is a localised impact (see Section 2.4.30) to an area of blanket bog representing 0.021% of the blanket bog in the SAC.
- 2.4.21. To confirm, the Project does not in any way impact 99.98%* of the blanket bog habitat of the SAC and will not impede any restoration activities that may be implemented in future to that area of the SAC. The predicted impact is highly precautionary, for instance:
- The Applicant has assumed on a precautionary basis that the relevant habitat present (blanket bog with acid and marshy grassland) qualifies as the priority habitat blanket bog; therefore, the areas of blanket bog within the Zol is likely an overestimate; and
 - The Applicant notes that the Emissions Factor Toolkit (EFT v11) from Defra shows a steady reduction in emissions over time, reflecting an uptake of cleaner petrol and diesel powered vehicles and an increased transition to electric vehicles. However, on a precautionary basis the Applicant has not taken the subsequent improvement in background N deposition rates into account in their assessment of predicted impacts on the SAC.
- 2.4.22. The Applicant considers that the impact arising from the A66 Project would not undermine the SAC's conservation objectives for 99.98%* of the SAC, and the assessment has been carried out on a highly precautionary basis. The predicted localised impact, on 0.021% of the SAC, can properly and reasonably be considered de minimis and inconsequential, and cannot be understood as adversely impacting the site's integrity, in view of its conservation objectives.
- 2.4.23. This is particularly the case in light of the characteristics and specific environmental conditions of the SAC with respect to air quality. The Applicant has provided information in the HRA Supplementary Note (as set out below for convenience) explaining the specific environmental conditions of the SAC in terms of air quality.
- 2.4.24. When considering the Project impact on the relevant conservation objective (i.e., to restore the concentration and deposition of air

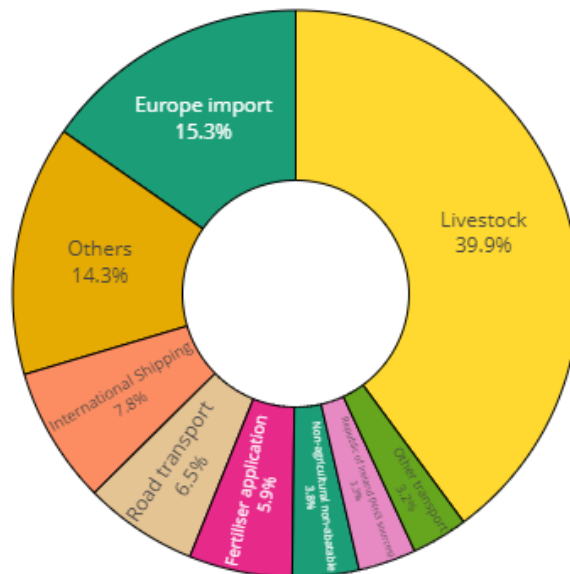
¹² APIS (2023), available at: <http://www.apis.ac.uk> [accessed: 18/10/23]

* Subject to rounding

pollutants to below the critical load) other sources and local contributions to nitrogen deposition (kg N/ha/yr) should be considered. A review of APIS has been undertaken to understand the proportion of sources of nitrogen deposition at a UK and local scale (Figure 1 and Figure 2). The local contributions to nitrogen deposition (kg N/ha/yr) in the North Pennine Moors SAC (shown in Figure 1) shows that the largest contributor is livestock (61.6% 11.25 kgN/ha/yr). Nitrogen deposition in relation to road transport represents only small amount (3.6 % 1.84 kgN/ha/yr) of the total nitrogen deposition (APIS, 2023)¹².

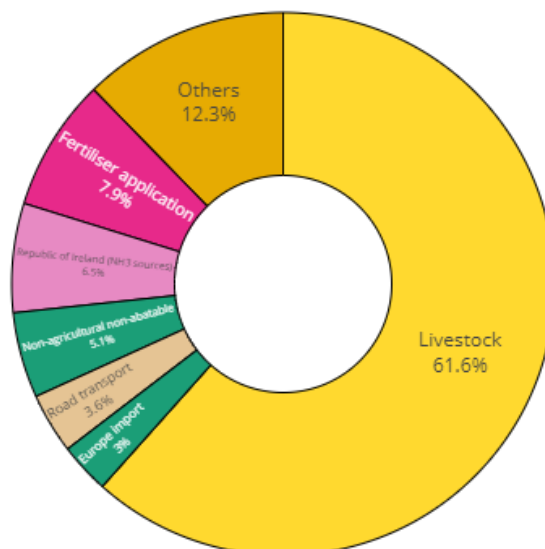
- 2.4.25. The contribution to nitrogen deposition from road transport in the area is small (6.5%) compared to other sources and therefore is not considered to materially affect total nitrogen deposition at the SAC. In addition, a conservative approach has been taken by not assuming any reductions in background nitrogen deposition rates in future years (see paragraph 2.4.21).
- 2.4.26. This data supports the position that were contributions to nitrogen deposition from road transport to be removed entirely (i.e., emissions of road transport as a whole, not just the A66 Project’s emissions), the site would still not achieve its conservation objective in terms of concentration and deposition of air pollutants¹³. This suggests other non-transport sources of nitrogen are the predominant barrier to achieving the conservation objectives and that future restoration of the site would likely need to focus on other (non-road transport) sources of nitrogen.

Figure 1: Sources ranked by total nitrogen deposition (Kg N/ha/yr) from combined UK sources



¹³ According to data provided by APIS, removal of the entire nitrogen deposition contribution from the road transport sector on a local scale would have a marginal change on the background nitrogen deposition, reducing from 17.8kg N/ha/yr down to 17.2kg N/ha/yr, still more than three times the Lower Critical Load (LCL) (Figure 2).

Figure 2: Local contributions to nitrogen deposition (Kg N/ha/yr) from sources (UK)



2.4.27. In addition to the above, it is considered likely that the road transport source contribution to total background nitrogen deposition will be much smaller than the current proportion of 6.5% (Figure 1) in the near future (see Section 4.1.33 of HRA Supplementary Notes, Document REP9-036⁵).

2.4.28. **NE Point 6:** Supporting justification requested regarding no mitigation being required and the conclusion of no adverse effect on site integrity.

2.4.29. **Applicant's Response to Point 6:**

2.4.30. It is accepted by the Applicant that a very small (0.021%) area of blanket bog and species within the Zol may be subject to adverse effects, to a varying degree and decreasing with distance from the road to an imperceptible level at 65m, as presented in Table A2 of the Supplementary Note, Document REP9-036. However, these effects are not considered to result in AEol on the SAC in view of the site's conservation objectives. The potential ecological impacts on the blanket bog habitat as a result of N Dep, NH₃ and NO_x are described in Section 4 of the HRA Supplementary Note (Document REP9-036)⁵. They can be summarised as:

- Modification of the chemical status of the blanket bog, accelerating or damaging plant growth, altering its vegetation structure and composition, and potentially causing the loss of sensitive blanket bog species and potential degradation of the blanket bog habitat.
- Potential for an increase in nitrogen loving plant groups such as the graminoids (grasses and sedges), altered growth and species composition in bryophytes, and increased nitrogen in peat and peat water. This may alter species composition and result in the potential loss of certain key blanket bog species (such as mosses, bryophytes and heather) due to an increased competition from grasses and sedges, such as cotton grass.

- Damage or potential loss of certain species, associated with the shift to a grass dominated assemblage, which has the potential to adversely impact blanket bog in the Zol.
- 2.4.31. The Applicant's conclusion of no AEoI on the SAC in view of the Site's conservation objectives is based on the best available evidence. In light of that evidence the Applicant has assessed the potential impact of the project as an enabler for the habitat changes above i.e., would the impact lead to loss of species that contribute to the formation of blanket bog habitat, and/or potential degradation of blanket bog species and habitat, but not loss of blanket bog habitat.
- 2.4.32. As noted in paragraph 2.1.12 of the Applicant's Second Supplementary Note¹⁴, the A66 Project's biodiversity specialists have used air quality modelling, ecological survey data and evidence from desk based sources (Bowes Moor SSSI citation / Management Plan and the North Pennine Moors SAC citation and conservation objectives (supplementary information) and North Pennines Group Site Improvement Plan) to conclude that the impacts of the Project would not affect the coherence of the SAC's ecological structure and function across its whole area.
- 2.4.33. Habitats within the Zone of Influence are recorded as acid grassland or mosaics of acid grassland with marshy grassland and areas of blanket bog. Survey data collected indicates that none of the underlying peat within the Zone of Influence is classed as 'Near Natural' using the Peatland Code Field Protocol, with the majority categorised as 'modified', 'drained' or 'actively eroding'. Active bog requires a high moisture content to enable continued support of vegetation which is normally peat forming. The habitat survey data and condition assessment of the peat evidence a system with limited opportunity to sustain water, with extensive areas of bare ground.
- 2.4.34. While increases in nitrogen can encourage growth of nitrogen loving species (such as Cotton-grasses), the potential for this change to occur in isolation (i.e., without other pressures affecting the condition of the peat), is limited. While there is evidence confirming the ability of cotton-grasses to compete with sphagnum mosses (a key component of the active blanket bog), equally there is evidence from moorland restoration programmes which confirms the ability of these species to co-exist without adversely affecting the growth of sphagnum mosses, provided sites are managed appropriately (Moors for the Future). Appropriate management of the bog is key to its recovery, along with appropriate management of hydrological conditions to prevent peat from becoming drained or eroded. Consequently, while the Project could alter vegetation composition this would not be the driver for change in the status of a bog where the peat underlying vegetation is in a degraded condition. An increase in the number of graminoids is reversible, as

¹⁴ National Highways, Annex 1 Position Statement regarding the Habitats Regulation Assessment and North Pennine Moors SAC, published 30 August 2023 and available here: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/TR010062/TR010062-002246-National%20Highways_Annex%201.pdf

evidenced in peatland restoration projects where recovery of sphagnum mosses has been achieved by implementation of an appropriate regime.

- 2.4.35. Given the potential for changes in vegetation composition to be reversed, the external pressures affecting the function of the bog and the extent of the impact in the context of the distribution of blanket bog across the site, it is considered that the project would not alter vegetation composition to cause irreversible, permanent damage to the blanket bog mosaic for which the site is designated. It is therefore considered that the integrity of the SAC is maintained, i.e., there is considered to be No Adverse Effect on the Integrity of the North Pennine Moors SAC arising from the Project.
- 2.4.36. Additionally, in terms of the potential for loss of species noted above, this is to be interpreted in light of the Applicant's highly precautionary approach as illustrated above, and in the absence of evidence to positively indicate loss will be experienced. The impact from the A66 Project will be experienced to a varying degree, decreasing with distance from the road, and be imperceptible beyond 65m.
- 2.4.37. The Applicant accepts that increased N dep and NH₃ in the Zol may negatively impact the blanket bog (to a varying degree decreasing with distance from the road, as presented in Table A2 of the Supplementary Note) but the effects will be limited to a 65m zone north of the existing A66. No blanket bog (including blanket bog recorded as a mosaic with acid/marshy grassland) was recorded to the south of the road. Therefore, the zone in which the potential effects described above may occur equates to 0.021% of the total blanket bog within the SAC and 0.008% of the entire SAC.
- 2.4.38. The Conservation Objectives Supplementary advice (Natural England, 2022¹²) sets a target to maintain or restore as appropriate the abundance of the following species to enable each of them to be a viable component of the blanket bog habitat: common heather, cross leaved heath, bell heather *Erica cinerea*, billberry *Vaccinium myrtillus*, crowberry *Empetrum nigrum*, cowberry *Vaccinium vitis-idaea*, sundew *Drosera* spp., common cottongrass *Eriophorum angustifolium*, hare's-tail cotton-grass *Eriophorum vaginatum* and an assemblage of sphagnum mosses. It is acknowledged by the Applicant that changes in species abundance may occur (with decreasing severity with increased distance from the road) within a very localised Zol that equates 0.021% of the total blanket bog within the SAC and 0.008% of the entire SAC. Therefore, as there will be no perceptible impact on 99.98%* of the blanket bog habitat and the impacts are localised and de minimis, the conservation objectives for the SAC would not be compromised and there would be no AEol of the SAC.
- 2.4.39. The Habitats Regulations Assessment Handbook (Tyldesley and Chapman, 2013)¹⁵ and Natural England guidance (NEA001)³ considers the 'integrity' of a site to be *'the coherence of its ecological structure and function across its whole area, that enables it to sustain the habitat,*

* Subject to rounding

¹⁵ Tyldesley, D., and Chapman, C., (2013) The Habitats Regulations Assessment Handbook, November 2018 edition UK: DTA Publications.

complex of habitats and/or the levels of populations of the species which the site is (or will be) designated'. In this regard, 99.98%* of the blanket bog feature and twelve of the thirteen qualifying habitats remain unaffected by the Project and therefore the integrity of the SAC is considered to be maintained.

2.4.40. Further to the above, when considering the above definition of site integrity test, the location of the impact within the site should be considered. The areas of blanket bog within the Zol are at the peripheral boundary of the SAC and at the extreme southern extent of the blanket bog habitat. This means the ecological coherence (or the quality of forming a unified whole) would be maintained and the impact will not result in further habitat severance or ecological incoherence or result in damage of less modified blanket bog habitat further north into the SAC.

Table 2: Evidence used to rule out AEol of the North Pennine Moors SAC in light of the conservation objectives.

	Rationale for demonstrating no AEol
Scale of impact	<ul style="list-style-type: none"> - The Project results in no direct land-take / construction in or near the North Pennine Moors SAC; the effect arises from an increase in vehicle emissions on the existing A66 during operation. - Blanket bog is the only qualifying feature subject to adverse impacts within a very localised Zol that equates to 0.021% of the total blanket bog within the SAC and 0.008% of the entire SAC area. - In this regard, 99.98%* of the blanket bog feature and twelve of the thirteen qualifying habitats remain unaffected by the Project. The Applicant accepts this represents a minor adverse but highly localised impact within the minimal Zol, however the severity of the impact within the Zol reduces with distance from the road to a point being 65m (60m in the SAC), where it is imperceptible, this impact is not considered to have an AEol of the SAC. The impact of the A66 Project will not adversely affect the integrity of the SAC, particularly when considering the HRA Handbook definition of integrity, and nor will it affect the SAC's ecological coherence.
Location of impact	<ul style="list-style-type: none"> - The areas of blanket bog within the Zol are at the peripheral boundary of the SAC and at the extreme southern extent of the blanket bog habitat. This means the ecological coherence (or the quality of forming a unified whole) would be maintained and the impact of the A66 Project will not result in increased habitat severance or ecological incoherence (or result in damage to the less modified blanket bog which is abundant further north into the SAC). - Based on the above, the coherence and ecological connectivity of habitat is not altered by the air quality impacts as presented.

* Subject to rounding

	Rationale for demonstrating no AEol
Impact on conservation objectives – to restore as necessary the concentrations and deposition of air pollutants to below the site-relevant Critical Load	<ul style="list-style-type: none"> - The contribution to nitrogen deposition from road transport in the area is minimal (6.5%) compared to other sources and therefore the increases predicted are not considered significant or to have AEol in view of the site's conservation objective to restore as necessary the concentrations and deposition of air pollutants to below the site-relevant Critical Load. - The data supports the position that were contributions to nitrogen deposition from road transport to be removed entirely (i.e., emissions of road transport as a whole, not just the A66 Project's emissions), the site would still not achieve its conservation objective in terms of concentration and deposition of air pollutants.
Impact on conservation objectives – maintain or restore as appropriate the abundance of indicator species	<ul style="list-style-type: none"> - Whilst there is potential for the minor and localised predicted increase in concentrations and deposition of air pollutants to result in loss or changes in the abundance of indicator species (as referenced above), the Zol where these effects may occur is very localised and equates at most to 0.021% of the total blanket bog within the SAC and 0.008% of the entire SAC. - Therefore, as there will be no perceptible impact on 99.98%* of the blanket bog habitat and the impacts are localised and de minimis, the conservation objectives for the SAC would not be compromised and there would be no AEol of the SAC.

2.5. HRA Second Supplementary Note (Annex I to Applicant's response to the Secretary of State's Request for Information dated 11 August 2023) – 25 August 2023 (post Examination)

- 2.5.1. On 14 July 2023, NE wrote to the Planning Inspectorate (entitled 'Natural England response to HRA Supplemental Note') (NE's letter). In summary, NE's letter set out that NE remains of the view that absent of mitigation, adverse effects on the integrity of the North Pennines Moor SAC cannot be ruled out as a result of the Project.
- 2.5.2. On 11 August 2023 the Secretary of State for Transport issued a letter requesting the Applicant's comments on NE's letter.
- 2.5.3. The purpose of the HRA Second Supplementary Note was to provide the Secretary of State with an update on the status of ongoing discussions with NE on the SIAA and the Applicant's response to NE's letter.
- 2.5.4. The Second Supplementary Note describes the post Examination engagement with Natural England and drafting of a joint position statement (see Section 2). However, ultimately the conclusion of this post Examination engagement was that the Applicant and NE were not able to agree about the conclusions of the SIAA, i.e., NE were unable to agree with the Applicant's position that the Project would not have an adverse effect on the integrity of the North Pennine Moors SAC.
- 2.5.5. Appendix A and B of the HRA Second Supplementary Note provides evidence to support National Highways conclusion of no AEol of the

* Subject to rounding

North Pennine Moors SAC. It also presents the findings of an additional (post examination) walkover survey of the SAC undertaken by biodiversity specialists. The purpose of the site walkover was to confirm the current condition of the site in terms of effects from the existing road and other land management pressures, and identify potential blanket bog enhancement opportunities that could be implemented (should they be required by the SoS) to improve the condition and resilience of the habitats to the minor increase in pollutants predicted as a result of the Project, whilst addressing the historic damage of the site from a range of sources.

- 2.5.6. Data from the walkover was used in addition to other sources to present a suite of enhancement opportunities (See Section 4) that could be implemented to restore and enhance the habitats within the Zol of the air quality changes (i.e., within 65m of the existing road) should they be required by the SoS.

2.6. Speed Restrictions and other possible mitigation

- 2.6.1. Paragraphs 2-3 of the Secretary of State's Request for Information (RfI) dated 28 September 2023 requested the following:

The Secretary of State also notes reference to potential mitigation measures in the form of speed restriction that are mentioned in paragraph 4.5 of Natural England's response dated 8 September 2023. Noting that information to inform a derogation assessment may not be available until 27 October 2023, the Secretary of State requests details from National Highways and Natural England on what speed restrictions would be necessary to mitigate the impacts of the scheme on the North Pennine Moors SAC to enable a conclusion of no adverse impact on integrity. Should there be any other suitable mitigation measures, the Secretary of State would also welcome details of these.

- 2.6.2. The Applicant notes that Natural England set out the following in response to this RfI:

Natural England understand that National Highways have been asked to provide the SoS with information regarding what speed limit reduction would result in a conclusion of no adverse effect on integrity of the North Pennines Moors SAC. Natural England are in conversation with other road schemes about speed reductions as possible mitigation solutions but at this time cannot indicate what speed reduction (if any) would result in no adverse effect on the integrity of the site. As mentioned in our previous letters, the exceedances from the dualling of the A66 are significant and would need a significant reduction as well as ecological evidence to explain why there would be no adverse impact on integrity to the SAC.

- 2.6.3. The Applicant set out in their response to the RfI dated 5 October 2023 the explanation of why speed restrictions (and other mitigation measures considered) would not, without prejudice to the Applicant's primary position, demonstrate beyond reasonable scientific doubt and to Natural England's satisfaction that there would be no adverse effects on the integrity of the SAC.

- 2.6.4. The Applicant considered two options for speed restrictions, with the results of the Applicant's analysis set out below:
- **Option (a)** - a localised reduction in speed limit between Brough and Bowes (i.e., adjacent to the NPM SAC) from 70mph to 60mph;
 - **Option (b)** - a speed restriction of 60mph throughout the proposed dual carriageway route between Kemplay Bank and A1(M) Junction 53 (with the section between M6 Junction 40 and Kemplay Bank restricted to 50mph as currently proposed). This would create a consistent standard of road along the Project length between Kemplay Bank and Scotch Corner, therefore mitigating the safety concerns associated with a localised speed restriction between Brough and Bowes, and would provide the Project-wide resilience benefits associated with dualling (e.g., the ability to close lanes for routine maintenance, or in response to incidents).
- 2.6.5. In terms of option (a) (location speed limit reduction between Brough and Bowes), this would be contrary to the Project Objectives. As set out in the Project Development Overview Report (APP-244), a core aim of the A66 Project is to improve road reliability and road safety. A consistent standard of dual carriageway, with the same speed limit throughout (with the exception of a short length of 50mph dualling between M6 Junction 40 and east of Kemplay Bank, as explained in the Project Development Overview Report (APP-244, paragraphs 5.2.21-5.2.24), will lead to fewer accidents which, in turn, makes the road more reliable. The introduction of a lower speed limit on any individual stretch of the A66 would contradict this approach, leading to the potential that driver behaviour and uncertainty will increase road safety risk and reliability issues. This risk is exacerbated by the high volume of tourist traffic that are unfamiliar with the route.
- 2.6.6. A localised speed restriction would increase journey times on the dual carriageway section between Brough and Bowes that currently operates with a 70mph speed limit. This would reduce the attractiveness of the route for users, including those using it to access services and jobs locally, or tourism destinations served by the A66. Enforcement of a 60mph speed limit would be critical through the use of speed management measures such as signage, speed cameras and average speed measurement, which contribute to cost and ongoing maintenance. There would also be adverse impacts from a landscape and visual perspective, for additional signage and enforcement measures (e.g., speed cameras) that would need to be installed through this section.
- 2.6.7. In terms of option (b) this would require a downgrade in speed limit to the existing A66 as well as opening the proposed A66 Project with a reduced 60mph limit across all Schemes (refer to Figures 2-8 and 2-10 of the Combined Modelling and Appraisal Report (Document Reference 3.8, APP-237) which show the current provision). A downgrade in speed limit to the existing A66 is out with the scope of the A66 Project, and a reduced 60mph limit to the new proposed A66 schemes is contrary to a core ambition of the Project, as noted above. A downgrade in the existing speed limit would also reduce the attractiveness of the route and would need to be enforced by signage, speed cameras and average

speed measurement, which would give rise to the same added cost and environmental impacts outlined above as for option (a).

- 2.6.8. Accordingly, in response to the SoS' Rfl, the Applicant maintains that speed restrictions would not, without prejudice to the Applicant's primary position of there being no AEol to the SAC arising from the Project, demonstrate beyond reasonable scientific doubt and to Natural England's satisfaction that there would be no adverse effects on the integrity of the SAC. Speed restrictions would also be contrary to the Project objective and would give risk to additional costs and environmental impacts.
- 2.6.9. In further response to the SoS' Rfl dated 28 September 2023, which queried other suitable mitigation measures for air quality impacts, the Applicant also presented information in its 5 October 2023 response on another mitigation option considered, namely, vegetation (buffer planting). The Applicant's review of this option concluded that the quantity of pollutant removed by planting is small and planting in this location would not be appropriate and could give rise to new adverse effects on integrity of the SAC arising from groundwater impacts.
- 2.6.10. Accordingly, the Applicant concludes in response to the SoS' Rfl that, without prejudice to the Applicant's primary position of no AEol on the SAC, there are no suitable mitigation options.

2.7. Conclusion

- 2.7.1. In summary, the SIAA and accompanying HRA Supplementary Notes present evidence (summarised on Table 2) supporting the conclusion that AEol of the North Pennine Moors SAC, as a result of the Project in combination with background growth and committed developments, can be ruled out beyond reasonable scientific doubt. Consequently, no mitigation and no further assessment is required and the HRA can be concluded at Stage 2: Appropriate Assessment.
- 2.7.2. The Applicant's conclusion of no AEol on the SAC in view of the Site's conservation objectives is based on the best available evidence. In light of that evidence the Applicant has identified impacts including potential for loss of species that contribute to the formation of blanket bog habitat, and/or potential degradation of blanket bog species and habitat, but not loss of blanket bog habitat.
- 2.7.3. As noted in paragraph 2.1.12 of the Applicant's Second Supplementary Note, the A66 Project's biodiversity specialists have used air quality modelling and other data to conclude that the impacts of the Project would not affect the coherence of the SAC's ecological structure and function across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which the site is designated. It is therefore considered that the integrity of the SAC is maintained, i.e., there is considered to be No Adverse Effect on the Integrity of the North Pennine Moors SAC arising from the Project.
- 2.7.4. Accordingly, the Applicant considers there is no requirement to move to the Derogation stage of HRA for the purposes of compliance with the Conservation of Habitats and Species Regulations 2017 (as amended).