

A417 Missing Link
TR010056

8.28 Comments on Responses
received by Deadline 5

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**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009**

A417 Missing Link

Development Consent Order 202[x]

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1 Introduction

1.1 Purpose of this document

- 1.1.1 This document has been prepared by National Highways (the Applicant) for submission to the Examining Authority (ExA) under Deadline 6 of the Examination of the A417 Missing Link Development Consent Order (DCO) application.
- 1.1.2 This document provides the Applicant's comments on the submissions made to the ExA by Interested Parties and Affected Persons at Deadline 5.

1.2 Structure of this document

- 1.2.1 In reviewing the submissions made at Deadline 5 National Highways has determined that, in some instances, the matters raised are similar to those already raised in previous submissions and to which National Highways has provided comment at previous deadlines. In particular, the ExA is directed to the following documents which have responded to key themes raised by Interested Parties at previous deadlines:
- Responses to Relevant Representations (Document Reference 8.3, REP1-008)
 - Response to Written Representations made at Deadline 1 (Document Reference 8.11, REP2-012)
 - Comments on Responses to the Examining Authority's Written Questions (ExQ1) (Document Reference 8.13, REP2-014)
 - Summary of Applicant's Oral Submissions of Hearings (Document Reference 8.16 to 8.19, REP3-008 to REP3-011)
 - Comments on Responses received by Deadline 2 (Document Reference 8.21, REP3-013)
 - Comments on Responses received by Deadline 3 (Document Reference 8.25, REP4-035).
 - Comments on Responses received by Deadline 4 (Document Reference 8.26, REP5-008).
- 1.2.2 In light of the above and to avoid unnecessary duplication, in this document National Highways has sought to respond only where it has identified matters that may benefit from new or further points of clarification or correction, where it may assist a stakeholder and/or the ExA. It also seeks to provide further information where necessary or requested by the ExA, for example through a Hearing Action Point, or as a follow up to its own submissions.
- 1.2.3 In some instances, this document provides a response to matters that are of relevance to multiple Interested Parties. This includes providing information to respond to a matter that has been raised by several Interested Parties (a 'theme' of submissions). In other instances, this document provides a direct response or comment on specific submissions made at Deadline 5.
- 1.2.4 As set out above, this is not an exhaustive list and National Highways has responded only where it is considered necessary or helpful to do so. This format has been considered necessary at this Deadline due to the specific nature of some of the Deadline 5 submissions.

- 1.2.5 In summary, this document does not provide a detailed response to each individual submission made at Deadline 5 where National Highways considers that its existing submissions to the Examination address the matter in question.
- 1.2.6 Failure to respond to a particular point should not therefore be inferred as National Highways accepting a matter on which its position is already clearly identified. National Highways would, however, be very willing to respond to any additional questions from the ExA arising from the submissions made at Deadline 5, where they consider it would be helpful for National Highways to further comment.

2 Comments on Deadline 5 submissions

2.1 Introduction

- 2.1.1 This chapter provides National Highways' comments on matters that are of relevance to multiple Interested Parties, including where this relates to a Hearing Action Point, or matters that have been raised by several Interested Parties (a 'theme' of submissions). National Highways considers the following matters that require comment for the benefit of the ExA:
- a. Controls of detailed design
 - b. Ecological mitigation measures
 - c. Consultation
 - d. Traffic trends
 - e. Assessment of alternatives
 - f. Traffic modelling
 - g. Impact on the local highway
 - h. Mineral safeguarding
 - i. Offsetting or compensating of construction carbon emissions
 - j. Suggestion that a 60mph road would lead to less-harsh acceleration and less pollution
 - k. Book of Reference update

2.2 Controls of detailed design

Summary of matters raised in Deadline 5 submissions

- 2.2.1 Some submissions made at Deadline 5 refer to ongoing concerns raised about controls on the detailed design of the scheme. At Deadline 5 these are mainly captured in the Cotswolds Conservation Board (CCB)'s submission (Document Reference REP5-011). That submission has been prepared jointly with the Joint Councils, National Trust and Gloucestershire Wildlife Trust.
- 2.2.2 The stakeholders have welcomed the intention of National Highways to provide new engineering drawings and sections of proposed structures, but also consider the drawings should be accompanied by a Design Code style document, reflective of a landscape-led solution that fulfils the criteria outlined in the collaborative Bridges Brief that was submitted by the key partners to the applicant in October 2020. The stakeholders also set out that drawings and a Design Code should be secured directly under Requirement 11 of the dDCO in order to provide assurances that the highest quality of design is achieved.

National Highways response

- 2.2.3 National Highways' position on controls on the detailed design of the scheme was presented in section 2.2 of its Comments on Responses received by Deadline 4 (Document Reference 8.26, REP5-008).
- 2.2.4 National Highways has continued to discuss the points raised on this matter, and at Deadline 6 now shares new structures engineering drawings and sections, as an appropriate solution that seeks to satisfy the concerns of the different stakeholders (Document Reference 2.6c). These drawings and sections are provided alongside a revised draft Development Consent Order (Document Reference 3.1, Rev 3) with an updated Requirement 11.

- 2.2.5 National Highways has again carefully considered the CCB submission made at Deadline 3 'Post-Hearing submission - Appendix A: Briefing note for the Access Bridges' (Document Reference REP3-036). That document was previously shared with National Highways in October 2020 as part of collaborative planning sessions with environmental stakeholders on the then emerging preliminary design of the scheme including the structures.
- 2.2.6 National Highways has previously explained why it does not consider a design code to be necessary or appropriate for the reasons set out in its response to Hearing Action Point ISH2-AP13 in its Comments on Responses received by Deadline 3 (Document Reference 8.25, REP4-035).
- 2.2.7 National Highways has previously taken into account the Briefing note for the Access Bridges as part of its Design Summary Report (Document Reference 7.7, APP-423). National Highways considers that the key principles of that document are reflected in its drawings and sections submitted at Deadline 6. For example, the key dimensions are provided alongside labels and notes to explain key features such as planting and habitat type.
- 2.2.8 Other application documents already provide the information and controls suggested by the Briefing note for the Access Bridges, for example:
- a. The Environmental Statement and its appendices and figures set out information about landscape such as viewpoints, cultural heritage and biodiversity effects, mitigation and enhancement in relation to the design of the scheme including structures and surrounding habitat or other features. In particular, that explains how the structures integrate within the landscape and respond to ecological survey data and impact assessments, which are some of the key requests of the stakeholders.
 - b. The Environmental Masterplan illustrates proposed land use, planting and habitat types including corridor connectivity.
 - c. The Rights of Way and Access plans and Public Rights of Way Management Plan sets out connections for communities including walkers, cyclists and horse riders.
- 2.2.9 Requirement 11 has also been amended to ensure that the detailed design of the scheme is to be in compliance with the design principles set out in the Design Summary Report. It is National Highways' view that this will ensure that the design, form and appearance of all bridge structures will respond to the natural and built character of the Cotswolds AONB.
- 2.2.10 This ensures that the suite of controls offered by National Highways now complies with 'Option 1' as identified by the Joint Councils in their submissions at Deadline 3 (REP3-019). This position is also explained in response to the Examining Authority's Written Question 2.5.14.
- 2.2.11 Matters for further detail must be left over for detailed design once a contractor is appointed, should the scheme proceed. However, to help ensure that stakeholders can continue to input into those matters, commitments have been made in the Statements of Common Ground (appended to the Statement of Commonality), and within the Environmental Management Plan. For example, EMP commitment GP8 ensures stakeholders are engaged in the detailed design and construction stages of the scheme. National Highways stresses that it remains committed to ongoing collaboration with the stakeholders.

2.3 Ecological mitigation measures

Summary of matters raised in Deadline 5 submissions

- 2.3.1 The Gloucestershire Wildlife Trust (GWT) has expressed the need for the following information as part of their Deadline 5 submission (REP5-012):
- a. A comprehensive map of all compensatory habitat provision, indicating where land has been secured and where it hasn't.
 - b. The methodology for creating compensatory habitat and a realistic assessment of likely success rates.
 - c. A clear Governance structure and process for triggering remediation action should the proposed ecological enhancements fail.
 - d. Detailed design of the Gloucestershire Way crossing, assuring that the bridge would be engineered to successfully sustain calcareous grassland and hedgerow habitats.
 - e. Production of a recreational pressure mitigation strategy for Crickley Hill and Barrow Wake SSSI, with a commitment to producing this in consultation with GWT, the National Trust and Natural England.

National Highways response

- 2.3.2 Environmental Management Plan commitment GP8 provides for ongoing engagement with all key environmental stakeholders prior to and during the detailed design of the scheme (REP4-028). National Highways is pleased to see support that commitment.
- 2.3.3 The stakeholders are listed in section 2.2 of the EMP. National Highways considers this commitment ensures positive ongoing collaboration between the parties on matters of interest to the parties, as detailed in the Statements of Common Ground (appended to the Statement of Commonality).
- 2.3.4 National Highways provides its latest position on the matters raised by GWT in their Statement of Common Ground submitted at Deadline 5 (Appendix F to the Statement of Commonality) (Document Reference 7.3 (Rev 3), REP-005). In summary and in turn:
- a. National Highways considers that sufficient information on compensatory habitat is provided as part of the application, as described within ES Chapter 8 Biodiversity (Document Reference 6.2, APP-039). All compensatory habitat within the DCO application boundary is mapped within the Environmental Masterplan (Document Reference 6.3 Environmental Statement – Figure 7.11, APP-166, APP-167, APP-168 and APP-171 to APP-192; and (Rev 1) REP4-025 to REP4-026). Two of the three sites of compensatory habitat fall outside of the DCO boundary that relate to the restoration of existing tuffaceous formations in degraded condition at the locations shown on Figure 1.1 and Figure 1.2 within ES Appendix 8.25 Tufa-forming springs: selection of potential compensation sites (Document Reference 6.4, APP-379). One site now falls within land owned by National Highways. Agreement with the one landowner involved in securing the other two sites is subject to positive progress, as explained at section 2.7 of our Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008).

A commitment to explore opportunities to expand an existing woodland restoration project to additional areas of Ullen Wood, beyond the DCO application boundary, is included within the Environmental Statement (ES) Appendix 2.1 Environmental Management Plan (EMP) (Document Reference 6.4, APP-317). These measures are sought to provide additional ecological enhancement, they are not proposed as compensatory habitat to address significant effects of the scheme. A progress update on this matter was provided at section 2.6 of our Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008).

- b. The Landscape and Ecological Management Plan EMP (Document reference 6.4 Environmental Statement- Appendix 2.1 EMP Annex D, APP-321) describes typical methodologies for the establishment and maintenance of compensatory habitat. These will be refined and updated by the contractor at detailed design as part of the EMP (construction stage) to be informed by soil testing and engagement with specialist contractors.

All long-term monitoring commitments will be secured via the EMP to ensure the compensatory habitats achieve target condition, and remediation measures will be included should any corrective action be required. It is therefore considered that all compensatory habitats would be successfully delivered.

Monitoring of compensatory habitat creation to ensure the establishment of vegetation to target condition will be secured by commitment BD45, within the EMP.

- c. Section 1.2 of the LEMP (Document reference 6.4, APP-321) commits to the establishment of a Working Group, including GWT as a named stakeholder, '*to provide independent advice on the development of the landscape and ecological detailed design, construction and management of the scheme*'. A commitment to ensure the continued long-term effectiveness of the environmental mitigation measures (which includes compensatory habitat) will be secured by commitment BD67 of the EMP. This states that the EMP (end of construction stage) would contain trigger points and remediation measures to ensure that all of the compensatory habitat provision is delivered.
- d. Detailed design of the Gloucestershire Way crossing – in Appendix B of National Highways Summary of Applicant's Oral Submissions at Issue Specific Hearing 1 (ISH1) (REP3-009), National Highways provided additional context on the proposed mechanism to control detailed design. That position has been updated by National Highways in part 2.2. of this document above. The detailed design is principally controlled under Requirement 11, with further controls over the eventual design included within ES Appendix 2.1 EMP (REP4-028), which is secured under Requirement 3. Commitments BD41, BD54, L7 and L8 all control the design of the Gloucestershire Way crossing.

- e. National Highways' position on recreational pressure on the Crickley Hill and Barrow Wake SSSI is summarised within Section 2.15 of the Response to Written Representations made at Deadline 1 (Document Reference 8.11, REP2-012). National Highways does not agree that the changes to PRoW arising from the scheme would result in a significant adverse effect upon the SSSI and therefore does not agree that production of a recreational pressure mitigation strategy is required. This matter was also discussed at Issue Specific Hearing 2 (ISH2), and 4.1.5 of the Summary of Applicant's Oral Submissions at Issue Specific Hearing 2 (ISH2) (Document Reference 8.19, REP3-011) summarises those discussions.

2.4 Consultation

Summary of matters raised in Deadline 5 submissions

- 2.4.1 Carol Gilbert in her submission at Deadline 5 (REP5-010) sets out that:

"...there is irrefutable evidence that the re-purposing of the section of A417 between Stockwell Lane and the Birdlip Junction had been agreed by National Highways, not only long before the announcement of Option 30, but even before the Public Consultations held in 2019 and 2020, proof that Option 30 was, as suspected, the only Option they were considering and a forgone conclusion. The Public Consultations held in 2019 and 2020 would therefore appear to have been not only a mere PR exercise and smokescreen to cover the fact that neither Option 12, nor indeed any other Options, were ever under serious consideration but also an appalling and quite inexcusable waste of tax payers money. This cannot be considered acceptable."

- 2.4.2 Linda Dawson expresses similar concerns in her submission at Deadline 5 (REP5-014).

National Highways response

- 2.4.3 National Highways rejects the suggestion contained in these submissions.
- 2.4.4 The Examining Authority is directed to the Consultation Report and its appendices (Document Reference 5.1 and 5.2, APP-027, 028 and 029), which clearly set out the comprehensive, transparent and meaningful approach it took to stakeholder engagement and public consultation informing the DCO application. The evolution of the preliminary design has been iterative and has responded to stakeholder and public feedback, as is explained and detailed in those documents.

2.5 Traffic trends

Summary of matters raised in Deadline 5 submissions

- 2.5.1 Hannah Dawson in her Deadline 5 submission (Document Reference REP-013) sets out:

"As someone who uses the car throughout the day for my work I have noticed a significant decrease in traffic on the roads this last two weeks, which I can only summise [sic] is down to fuel costs. As this now is not going to change in the near future have National Highways factored this into their calculations? Many people are now limiting their car use..."

National Highways response

- 2.5.2 As National Highways noted in Response to Relevant Representations (Document Reference 8.3, REP1-008), forecasting the medium and long-term impact of COVID-19, changes in fuel costs etc are all difficult to forecast accurately over a 60-year appraisal period.
- 2.5.3 The scheme traffic model was developed, and the appraisal was undertaken in accordance with the Transport Analysis Guidance (TAG) in July 2020. Changes in fuel costs and other factors would have been factored into the appraisal, but the increases in fuel costs that have been seen in the period 1 March 2022 to 15 March 2022 would not of been accounted for in the scheme appraisal due to the level of increase being unforeseen at the time the appraisal was undertaken.
- 2.5.4 National Highways believes the medium- and long-term predictions of traffic growth, fuel costs etc. remain accurate and valid for the appraisal of the scheme.

2.6 Assessment of alternatives

Summary of matters raised in Deadline 5 submissions

- 2.6.1 Richard Hamilton and Tim Knox in their submissions at Deadline 5 (REP5-015 and REP5-017 respectively), continue to express concerns about the assessment of Option 12 compared to Option 30 prior to the Preferred Route Announcement made by then Highways England in 2018.
- 2.6.2 Richard Hamilton asked whether it is an accurate statement that Option 12 is a better environmental solution than Option 30, and questions the need for the scheme in the current global context.
- 2.6.3 Tim Knox asked:
- What modelling has been carried out to understand the impact of having a reduced speed limit from the Cowley Roundabout to the end of the dual carriageway at the Barnwood junction, and would it be correct to say this would reduce the risk of congestion and queues at the junctions further along the route of the A417.
 - Whether it would be correct to assume that Option 12, with its reduced speed due to highway design departure from standards, would naturally control the volume of traffic approaching the end of the A417, and thus assist in reducing the risk of congestion and queues.
 - Is it accurate to state that there are only 4 roads that join the proposed section of road (A436, B4070, Cowley Lane, and Cowley Roundabout) and that the traffic flow on these roads would be about the same for either Option 12 or 30? If not, why not?
- 2.6.4 Tim Knox also continues to raise concerns about junction arrangements associated with Option 12 and Option 30.

National Highways response

- 2.6.5 National Highways has previously explained the assessment process and reasons why Option 30 was selected as the preferred option, which has subsequently been subject to design development work and forms the basis of the DCO application. National Highways latest evidence on this matter was provided at Deadline 5 in Section 2.12 'Junction design at optioneering stage' of

Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008).

- 2.6.6 In response to Mr Hamilton's questions, National Highways explained its comparative assessment of Options 12 and 30 in the Scheme Assessment Report (APP-420). It is not correct to say that Option 12 is a better environmental solution. The need for the scheme is compelling and is set out in the Case for the Scheme (Document Reference 7.1, APP-417).
- 2.6.7 In relation to point a., National Highways provided the relevant traffic data requested by the Examining Authority at Issue Specific Hearing 4 Action Point 4, and in Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008). This section demonstrated that at the Barnwood and Longlevens junctions the increase in Annual Average Daily Traffic (AADT) would have a maximum of 8% in 2041 and that the maximum increase in delay would be six seconds. National Highways have not undertaken any modelling with a reduced speed limit on the A417 between Cowley roundabout and Barnwood junction as the traffic modelling for the Do-Something (DS) scenario does not indicate there would be a problem with congestion.
- 2.6.8 In relation to point b, the scheme traffic modelling undertaken by National Highways indicates there would be no increased congestion on the A417, as noted in Responses Received by Deadline 4 (Document Reference 8.26, REP5-008). The question of whether Option 12 would have reduced congestion does not therefore arise.
- 2.6.9 In relation to point c, Table 7.2 of the Scheme Assessment Report (Document Reference 7.4, APP-420) compares traffic flows on key roads for the base, Do-Minimum (DM) and Option 12 and Option 30 for 2024 and 2039. This table shows that at the Option appraisal stage the traffic flows on these roads would be similar between the two options for most roads in the two years. The only exceptions would be the road through Elkstone village and A436 at Ullenwood where traffic flows would be lower for Option 30 than for Option 12.
- 2.6.10 National Highways has provided a written response regarding the number of junctions intended for Option 30 compared to the number of junctions in Option 12 at Section 2.12 'Junction design at optioneering stage' of Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008).

2.7 Traffic modelling

Summary of matters raised in Deadline 5 submissions

- 2.7.1 Tim Knox in his submission at Deadline 5 (REP5-017) continues to express concerns about the traffic modelling, and asked specifically:
- Is it correct to say that the model is representative of average weekday traffic for March 2015, and is used for estimating travel costs and identifying the routes travellers may choose through the road network?
- 2.7.2 Tim Knox also stated that "*there is a requirement to get a clearer understanding of how the weather has been built into the traffic models*".

National Highways response

- 2.7.3 National Highways provided a response to Joanna Pearce (Document Reference REP3-047) at Deadline 4 in Comments on Responses Received by Deadline 3 (Document Reference 8.25, REP4-035), which set out that:

“National Highways can confirm that the accident assessment for the scheme is based on observed accident data for the A417 and the wider network covering the entire year and therefore periods when adverse weather occurs. Therefore, the accident assessment would include this data in its baseline. The scheme traffic model is representative of an annual average weekday within the year as required to support the design, environmental assessment and the business case for the scheme.”

- 2.7.4 As set out in National Highways’ submission at Deadline 5 in Comments on Responses Received by Deadline 4 (Document Reference 8.26, REP5-008):

“Section 3 of National Highways’ submission at Deadline 3 ‘Summary of Applicant’s Oral Submissions at Issue Specific Hearing 1’ (Document Reference 8.17, REP3-009) considered concerns raised about weather and microclimate, some instances with an interest in and around Cowley village. Section 13 of National Highways’ Response to Written Representations made at Deadline 1 (Document Reference 8.11, REP2-012) further addresses concerns about weather and microclimate with specific consideration of local concerns including those expressed by residents of Cowley village.”

2.8 Impact on the local highway

Summary of matters raised

- 2.8.1 At Issue Specific Hearing 4 (ISH4) on the draft DCO, held 3 March 2022, National Highways was assigned Hearing Action Point ISH4-AP5 which stated:

“Provide written response to the Joint Councils submissions under ISH4-AP4”.

- 2.8.2 The Joint Councils provided their submission at Deadline 5 in Document Reference REP5-016.

National Highways response

- 2.8.3 As stated in Section 2.5 of National Highways Comments on responses received by Deadline 3 (Document Reference 8.25, REP4-035) Volume/Capacity (V/C) has been used to indicate the impact the scheme would have on the four roads mentioned in the Joint Councils Local Impact Report (Document Reference REP1-133). National Highways believe this to be an appropriate measure as it provides an indication as to the impact that the scheme would have on these roads and whether there would be any issues in relation to capacity, and any associated impacts.
- 2.8.4 National Highways has used a threshold of 85% for the V/C as this provides an indication as to how close a road is to its theoretical capacity and would begin to experience operational problems (congestion).
- 2.8.5 In relation to the point raised in the Joint Councils submission at Deadline 5 (Document Reference REP5-016) concerning the use of average hour flows rather than peak hour flows, the National Highways response is that average hour flows have been utilised for this analysis as the scheme traffic model is an

average hour model, and therefore basing the V/Cs on the average hour is consistent with the data from the model and with the other analysis undertaken based on the model outputs.

- 2.8.6 In relation to the comment in the Joint Councils submission at Deadline 5 (Document Reference REP5-016) that *‘flows on local links should not be adversely affected, compared to the case without mitigation’*, National Highways disagree with this. When a highways scheme is implemented, it is likely that some routes will attract increased traffic volumes with the scheme in place as traffic takes advantage of the improved capacity and reduced journey times across the highway network provided by the scheme. This would occur as vehicles reroute to local roads to access the scheme and thus increase traffic on key local roads.
- 2.8.7 In the Joint Councils submission at Deadline 5 (Document Reference REP5-016) they state:
- “However we would not agree that appropriate mitigation for the local routes identified should not be implemented because it could result in a reassignment of traffic on to other alternative minor routes – but rather that the Joint Councils reiterate the view (as set out in the REP3-020 document) that NH investigate potential options for achieving a reduction in the predicted increase in Cheltenham-bound traffic travelling via Leckhampton Hill, in favour of such traffic using the more appropriate alternative ‘A’ class roads, namely the A436 (Ullenwood) – A435 route”*
- 2.8.8 As National Highways stated in Comments on responses received by Deadline 3 (Document Reference 8.25, REP4-035) mitigation on Leckhampton Hill may result in traffic reassigning onto more minor routes than Leckhampton Hill and therefore considered to be less suitable for higher volumes of traffic. These could include for example, traffic reassigning to routes through Elkstone Village, as they do in the DM scenario. National Highways consider that traffic reverting to these roads would not be suitable and would not assist in achieving one of the key objectives of the scheme which is to discourage rat running.
- 2.8.9 In relation to the Joint Councils comment to traffic using more appropriate alternative ‘A’ class roads, namely the A436 and A435, National Highways consider this would not be the case. Traffic travelling to/from Cheltenham to the south would use the A435 and then either travel through Elkstone village to access the A417 at the Highwayman junction or remain on the A435 to Cirencester.
- 2.8.10 In relation to paragraph 3.3.12 of the Joint Councils submission at Deadline 5 (Document Reference REP5-016) the impact of the increased traffic on Leckhampton Hill and associated impacts on noise and air quality have been assessed in the Environmental Statement and these are summarised as follows:
- Noise – the noise assessment in Environmental Statement Chapter 11 Noise and Vibration (Document Reference 6.2, APP-042) forecast that for Leckhampton Hill there would be a significant adverse effect due to the increase in traffic for five properties. In the Statement of Common Ground with the Joint Councils in Appendix A of the Statement of Commonality (Document Reference 7.3 Rev 3, REP5-005) it is recorded that the increase in noise is 1dB and therefore would be indiscernible. Mitigation measures for removing this significant impact have been discussed with the relevant parties, one of which was a reduction in speed limit on Leckhampton Hill. Through these

discussions the Joint Councils and National Highways agreed that speed limit reductions cannot be relied upon to mitigate the identified noise effect. This agreement is noted in the Statement of Common Ground with the Joint Councils in Appendix A of the Statement of Commonality (Document 7.3 Rev 3, REP5-005).

- In relation to air quality, Environmental Statement Chapter 5 Air Quality (Document Reference 6.2, APP-037) the assessment forecasts no significant impacts on Leckhampton Hill and the scheme is forecast to reduce pollutants at the Birdlip Air Quality Management Area (AQMA).

2.8.11 In relation to safety on Leckhampton Hill, National Highways has reviewed the accident data used in the assessment of the scheme, see the Combined Modelling and Appraisal (ComMA) Report (Document Reference 7.6, APP-422), the accident data covers the five-year period to end of June 2019. From this data National Highways has extracted the personal injury accident data for the A436/Leckhampton Hill junction and Leckhampton Hill and this is presented in Table 2-1.

Table 2-1 Personal injury accident data for Leckhampton Hill

Section	Fatal	Serious	Slight	Total	Link Length
A436/Leckhampton Hill junction	0	3	5	8	<20m
Leckhampton Hill – A436 to Old Bath Road	0	1	2	3	3.7km
Total	0	4	7	11	

2.8.12 Overall, as can be seen in Table 2-1, in the five-year period to the end of June 2019 there were a total of eleven accidents. Of these, eight were at the A436/Leckhampton Hill and three were on the section between the A436 and Old Bath Road. None of the accidents in this period resulted in a fatal casualty; four accidents were classed as serious and seven as slight.

2.8.13 The A436/Leckhampton Hill junction is the main accident hotspot due to this being a cluster of eight accidents within 20 metres of the junction, whereas those on Leckhampton Road are spread along a section of road measuring approximately 3.7km in length.

2.8.14 In addition to those accidents above, there are also an additional eight accidents that have been recorded at Air Balloon roundabout in the five-year period to June 2019, of which one was classed as serious and seven as slight.

2.8.15 The two accident hotspots identified at the Leckhampton Hill/A436 junction and at the Air Balloon roundabout are addressed by the scheme. Both existing junctions are removed by the implementation of the new Ullenwood junction. There is also a significant reduction in the volume of traffic using the replacement Ullenwood junction due to the A417 'through traffic' using the A417 mainline carriageway rather than travelling through the junctions.

2.8.16 The reduction in traffic passing through Ullenwood junction is detailed in Section 4.1 of National Highways Comments on Local Impact Report (Document Reference 8.12, REP2-013). Based on Figure 7-1 in the Transport Report (Document Reference 7.10, APP-426) there would be a 50% to 60% decrease in

traffic passing through Ullenwood junction in the DS scenario and this predominantly due to the removal of A417 passing through this junction.

- 2.8.17 As can be seen from Table 2-1.
- 2.8.18 Table 2-1, on the section of Leckhampton Hill there were eleven accidents, of which only three were on the Leckhampton Hill between the A436/Leckhampton Hill junction and the junction with Old Bath Road and there have been no recorded accidents on this section since 2016. As the accident data is over a five-year period, this equates to a low accident incident rate. Based on the low accident rate, National Highways are of the view that even with the forecast increase in traffic on Leckhampton Hill it would be unlikely that there would be an accident issue on this section of Leckhampton Hill.
- 2.8.19 The accident data in Table 2-1.
- 2.8.20 Table 2-1 indicates that the accident hotspot is the A436/Leckhampton Hill junction and its interaction with Air Balloon roundabout. With the scheme these two junctions are replaced by the Ullenwood junction which has been designed to current standards and to accommodate the forecast 2041 peak hour flows. Peak hour flows are used in the design and assessment of junctions to ensure the junctions have sufficient operational capacity, whereas other aspects of the design and assessment are based on Annual Average Daily Traffic flows and therefore consistent with the average peak hour model.
- 2.8.21 With the scheme in place, the assessment of accident benefits that was undertaken using the Cost and Benefit to Accidents – Light Touch (COBALT) assessment tool forecasts that the scheme would provide accident benefits of £65 million and would result in 66 less fatalities and 201 serious accidents over the 60-year appraisal period. More details on the accident assessment are in Section 13.4 of the ComMA Report (Document Reference 7.6, APP-422).

2.9 Mineral safeguarding

Summary of matters raised

- 2.9.1 At Issue Specific Hearing 4 (ISH4) on the draft DCO, held 3 March 2022, National Highways was assigned Hearing Action Point ISH4-AP8 which stated:
- “Provide written response to the Joint Councils submissions under ISH4-AP7”.*
- 2.9.2 The Joint Councils provided their submission at Deadline 5 in Document Reference REP5-016.

National Highways response

- 2.9.3 Paragraph 10.7.24 of ES Chapter 10 Material assets and waste (APP-041) presents the estimated percentage of Gloucestershire’s sand and gravel, and sandstone and limestone safeguarded areas that are within the DCO boundary. Please note that a rounding oversight and decimal place error mean that the numbers should be as follows:
- 0.06% of Gloucestershire’s sand and gravel safeguarded area is within the DCO Boundary – not 0.05% as reported in the ES.
 - 0.13% of Gloucestershire’s sandstone and limestone safeguarded area is within the DCO Boundary – not 1.3% as reported in the ES.

2.9.4 The percentages have been calculated digitally using mineral safeguarding area (MSA) shape files provided by GCC, and the DCO boundary. The areas are summarised in Table 2-2.

Table 2-2 Mineral safeguarding areas

Area	Area (m ²)	Percentage of mineral safeguarding area (%)
Total area of safeguarded sand and gravel in Gloucestershire	245,126,866	100.00
Total area of safeguarded sand and gravel within the DCO boundary	138,681	0.06
Total area of safeguarded sandstone and limestone in Gloucestershire	1,017,553,787	100.00
Total area of safeguarded sandstone and limestone within the DCO boundary	1,347,584	0.13

- 2.9.5 Based on the distribution and extent of the MSAs, it is not feasible for the scheme to avoid them, however in line with the mitigation hierarchy, all efforts have been made to reduce the DCO boundary to minimise the impact on the MSAs.
- 2.9.6 This simple level of assessment is considered appropriate. The DCO boundary includes areas of existing highway that currently overlay the mineral safeguarding areas. As per paragraph 10.7.22 of ES Chapter 10 Material assets and waste (APP-041), the first 500 metres of the scheme up to Ch 0+500 would overlap with the MSA for sand and gravel. As the scheme closely follows the existing road alignment and is widened in this location, the impact on the MSA would be very similar to the current baseline. Similarly for the impact on the sandstone and limestone mineral safeguarding areas, the DCO boundary includes areas already covered by highways.
- 2.9.7 As demonstrated by the numbers in Table 2-2 and as can be seen from Figure 10.2 Mineral safeguarding areas (APP-247), the scheme would affect a very small proportion of the resource. The scheme would not diminish access or sterilise the use of the wider resource. Therefore, as per paragraph 10.10.14 of ES Chapter 10 Material assets and waste (APP-041), the assessment of effects on mining and material resources is considered slight and not significant.
- 2.9.8 The Applicant would note that the Joint Council submissions appear to be rely on the provisions of Policy MS01 Non-mineral developments within MSAs of Minerals Local Plan for Gloucestershire 2018 – 2032 (adopted March 2020) (the MLP). That policy provides for five, mutually exclusive, categories of development affecting MSAs which would be permissible where an application is made for planning permission affecting a MSA. As explained in the Applicant’s Environmental Statement, and summarised above, the areas of affected land within MSA are proportionally very small. The submissions which have been made by the Joint Councils appear to refer predominantly to limbs II to IV of policy MS02. Those matters have previously been addressed in the Case for the Scheme (APP-417) at paragraph 6.3.133. The ExA is referred to those previous submissions in terms of the scheme’s compliance with paragraph 5.169 of the National Policy Statement for National Networks, which provides that (emphasis added) “*Applicants should safeguard any mineral resources on the proposed site*”

as far as possible.” The Council’s MLP should be considered by the ExA in the context of the scheme being a Nationally Significant Infrastructure Project (NSIP), and as directed by s.104 of the Planning Act 2008.

- 2.9.9 In addition to those previous submissions, it is also relevant to note that the overriding need for the A417 scheme has been demonstrated within the Case for the Scheme (APP-417). The Applicant’s position is therefore that the scheme would also meet the criteria identified at limb V of Policy MS01 in respect of the overriding need for the development. The Applicant notes that limb V needs to be supported by sufficiently detailed information, under paragraph 125 of the MLP. In these circumstances, it is suggested that the ExA has that sufficiently detailed information before it which would be necessary for it to reach its own conclusions in that regard. There is no absolute requirement for that information to be in the form of a mineral resources assessment (MRA).

2.10 Offsetting or compensating of construction carbon emissions

Summary of matters raised

- 2.10.1 At Issue Specific Hearing 4 (ISH4) on the draft DCO, held 3 March 2022, National Highways was assigned Hearing Action Point ISH4-AP11 which stated:
- “Provide written response to the Joint Councils submissions under ISH4-AP10”.*
- 2.10.2 The Joint Councils provided their submission at Deadline 5 in Document Reference REP5-016.

National Highways response

- 2.10.3 The Carbon Management Plan documented in ES Appendix 2.1 Environmental Management Plan (EMP) (REP4-027) will not include details of measures to offset or compensate for the construction related carbon emissions reported in the ES Chapter 14 Climate (APP-045). The Carbon Management Plan will comprise measures to avoid/prevent and reduce emissions through construction, as per paragraph 4.3.12 of ES Appendix 2.1 EMP (REP4-027). It should be noted that there are no legal or policy requirements for the scheme to offset its residual emissions.
- 2.10.4 National Highways has set out its route to achieve net zero carbon emissions within the document *“Net Zero Highways: our 2030 / 2040 / 2050 plan”*. This plan focusses on avoiding and reducing carbon emissions through design and construction, aiming to have net zero emissions from construction by 2040, at which point any residual emissions will be offset.
- 2.10.5 This approach is in line with carbon mitigation hierarchies, where carbon avoidance and reduction is prioritised, and offsetting of emissions is a last resort.
- 2.10.6 This also aligns with PAS 2080 which promotes the principles of build nothing, build less, build clever, build efficiently.
- 2.10.7 Measures to reduce embodied carbon through detailed design are secured by commitments CC1 – CC12 of ES Appendix 2.1 EMP (REP4-027) and a target reduction in construction phase emissions of 10%+ (compared to the forecast in the ES) will apply.
- 2.10.8 National Highways have already realised carbon reductions of 35% through evolution of the scheme during the preliminary design process (as reported in ES

Chapter 2 paragraphs 2.8.87 – 2.8.88 (APP-033)), to achieve the current construction stage emissions of 74,144 tCO₂. National Highways have also designed in a net benefit in carbon sequestration from land use, which amounts to 10,793 tCO₂ over the modelled 60-year operation.

2.11 Suggestion that a 60mph road would lead to less-harsh acceleration and less pollution

Summary of matters raised

- 2.11.1 At Issue Specific Hearing 4 (ISH4) on the draft DCO, held 3 March 2022, National Highways was assigned Hearing Action Point ISH4-AP13 which stated:

“Provide a summary with regards the suggestion that a 60mph road would lead to less-harsh acceleration and less pollution, with reference where appropriate to schemes where a 60mph limit has been imposed (examples of the M6 and M5 provided in the Hearing).”

- 2.11.2 Richard Hamilton also makes reference to this matter in his submission at Deadline 5 (Document Reference REP5-015).

National Highways response

- 2.11.3 Reducing speed from 60mph to 70mph is not the same as managing hard acceleration. Based on the research completed by the then Highways England¹, vehicle data collected from drivers travelling at 60mph and 70mph showed that driving patterns were not to be associated with phases of hard acceleration as vehicles tend to be travelling relatively uniformly in terms of speed. It is a misconception to think that reducing speeds from 70mph to 60mph somehow reduces phases of hard acceleration. Whilst phases of hard acceleration do lead to increases in emissions compared to steady speeds, this type of driving tends to be associated with slower speeds or transition between different speed limits e.g., transitioning from 30mph to 50mph.
- 2.11.4 As set out in the that research, reducing speed limits from 70mph to 60mph reduces overall emissions as the amount of power required to overcome atmospheric drag, rolling resistance is reduced i.e., you need less power to move the vehicle forward at 60mph compared to 70mph. Where roads have a [steeper] gradient then vehicle’s engines are under increased loads, as they must generate more power, to overcome the effects of the gradient. It is likely the additional power requirements for individual vehicles, and associated emissions, to overcome the gradient on the A417 would far outweigh any changes in a speed limit from 70mph to 60mph.
- 2.11.5 The air quality assessment reported in ES Chapter 5 Air Quality (Document Reference 6.2, APP-036) predicts no exceedances of the Air Quality Objectives (AQO). Overall, the scheme is considered to have a beneficial impact on local air quality due to the reductions in NO₂ concentrations within the Air Quality Management Area (AQMA). Hence, a 60mph speed limit is not required to reduce emissions and improve air quality.

¹ Connected Places Catapult, Light vehicle motorway NOx exhaust emissions, Review of Highways England motorway speed banding methodology (December 2019)

2.12 Book of Reference Update

2.12.1 National Highways intends to provide an updated Book of Reference (Document Reference 4.3 (Rev 1) REP4-022) towards the end of the examination but seeks to avoid multiple revisions and the potential inconvenience that could cause to the ExA. At Deadline 6, National Highways would like to set out that it intends to make the following changes:

- Following a request from the National Trust, updates will be made to their address details throughout the Book of Reference.
- Reference to the National Trust where they have a farm tenancy will be updated, with the National Trust referred to as a Category 1 interest in such land as opposed to a Category 2 interest.
- An update will be made to correct an error in relation to plot 6/5c as it is currently allocated to the incorrect landowner.