

A303 Amesbury to Berwick Down

TR010025

Deadline 8

**8.49 – Comments on any further information requested by
the ExA and received to Deadline 7**

APFP Regulation 5(2)(q)

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

September 2019



Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure)

Rules 2010

A303 Amesbury to Berwick Down

Development Consent Order 20[**]

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and received to Deadline 7**

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1 Introduction

1.1 Purpose of Report

1.1.1 This report provides Highways England's responses to representations by Interested Parties (IPs) submitted at deadline 7.

1.2 Structure of this document

1.2.1 This report is structured by Interested Party. It presents matters they have raised from their representations and the associated responses from Highways England. The Table of Contents provides the complete listing of the representations received and included in this report.

1.2.2 The matters raised and responded to in this report are from:

- Comments on the Applicant's Comments on information received at deadline 4, submitted at deadline 5 [REP5-003];
- Responses to Second Written Questions by others;
- Comments on Second Written Question Responses by the Applicant;
- Comments on the draft DAMS submitted at deadline 6 [REP6-014];
- Comments on the OEMP submitted at deadline 6 [REP6-012];
- Comments on the draft DCO submitted at deadline 6 [REP6-006];
- Comments on Byways 11 and 12 proposals;
- Additional submissions.

1.2.3 As stated in item 1.2.4 in REP7-021, late deadline 6 submissions of comments published on the Planning Inspectorate's website on and after 5 August 2019 have also been addressed within this report.

1.2.4 Late deadline 7 submissions of comments published on the Planning Inspectorate's website on and after 28th August 2019 will be addressed at Deadline 9.

1.3 The Examination Library

1.3.1 References set out in square brackets (e.g. [APP-010]) are to documents catalogued in the Examination Library. The Examination Library can be viewed at the following link:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010025/TR010025-000484-Stonehenge%20-%20Examination%20Library%20Template.pdf>

1.3.2 The Examination Library will be updated at regular intervals as the Examination progresses.

2 Council for British Archaeology (REP6-084)

2.1	Response to ExAs Second Round of Written Questions	
	Matter Raised	Highways England's Response
2.1.1	<p>AL.2.1</p> <p>The CBA has made representations that along with NPSNN the statutory requirements of the Infrastructure Act 2015 is an important part of the 'framework' for determining DCO highways applications under the 2008 Planning Act. Because of the statutory status of the RIS and the environmental duties of the Secretary of State and Highways England under the 2015 Act, we believe the RIS to be a clear part of the framework for decision-making (as defined by the SEA Regulations and interpreted by the courts) because it defines a spatially defined programme of projects, within a statutory delivery plan that under the 2015 Act must be complied with by the Applicant and the Secretary of State, while also fulfilling their statutory duties to have regard and particular regard to the effects of the RIS on the environment. Because the RIS defines the need for the programme of National Infrastructure Schemes in terms of highways, (of which this scheme is one) together with other economic, social and environmental objectives, it does clearly (in Ouseley J's terminology supported by the Appeal and Supreme Courts),</p> <p><i>"set a framework for subsequent decision-making on development consents, laying down rules or criteria or policy guidance, for it. The significant environmental effects have to be assessed at a time when they can play their full part in the decision; they cannot be left unassessed so that the development decision is made</i></p>	<p>As set out in section 21.1 of Highways England's Comments on Written Representations [REP3-013], the Road Investment Strategy (RIS) is not a plan or programme requiring a strategic environmental assessment (SEA) within the meaning of the SEA directive. The RIS does not set the framework for future development consent of projects and does not prevent environmental effects being taken into account at the development consent stage, nor does it constrain the decision whether or not to grant development consent. The consenting framework for strategic road improvements is set mainly by the National Networks NPS (NNNPS), and in the context of the DCO the plan or programme which constrains the decision making is the NNNPS (which was subject to an Appraisal of Sustainability incorporating a Strategic Environmental Assessment under European Directive 2001/42/EC on the assessment of effects of certain plans and programmes on the environment). Therefore, Highways England does not consider that an SEA is required for the RIS.</p> <p>The scope of the SEA Directive was most recently considered in the case relating to the Cambridge to Oxford Expressway (Berks, Bucks and Oxon Wildlife Trust v SST and Highways England). In that case, Lang J considered the previous authorities had said that what constitutes a "plan or programme" and whether it "sets the framework" for future development consent were to "some extent inter-related".</p> <p>So, in considering whether the RIS was a "plan" for the purposes of the SEA Directive, it needs to be taken into account whether the RIS set the criteria by which the decision on development consent would be made and whether it constrains the future decision-making process so as to prevent consideration</p>

<p><i>when the framework in the plan has sold the pass. A plan framework tilts the balance, creates presumptions, and urges weight to be given to various factors.”</i></p> <p>We have presented an analysis for why RIS and its downstream hierarchy of plans/programmes DOES fall within the scope of SEA, but in seeking to rebut the CBA’s case ([REP2-070] para 21.1.16) the Applicant has relied on broad assertion, not evidence-based analysis. The Applicant –</p> <ul style="list-style-type: none"> □ has not presented any formal screening carried out by Highways England or the Secretary of State to substantiate their assertions has not presented any formal legal opinion obtained by Highways England or the Secretary of State to substantiate their assertions □ has NOT shown that any specific point in the analysis presented by the CBA is incorrect. <p>The statutory status of the RIS under the 2015 Infrastructure Act and the Secretary of State and HE’s statutory duties both to comply with it and have regard to its effects on the environment, is why through NSPNN it sets the framework for decision making, not least via NPSNN para 2.10, which requires that Examining Authority and the Secretary of State should start their assessment of applications on the basis the need for them <i>“both as individual networks and as an integrated system”</i> and the specific requirements under paragraphs 4.3 to 4.5. All the provisions of NPSNN must thus be assessed within this context <i>“both as individual networks and as an integrated system”</i>.</p> <p>In the absence of any SEA of RIS (or its downstream plans and programmes) the logical implication for compliance with NPSNN (which is also meant to inform RIS) is for the role of this scheme within RIS to be considered in terms of cumulative effects.</p>	<p>of the alternatives (including those that are less environmentally damaging). The RIS does not do this.</p> <p>Furthermore, as set out by Lord Carnwarth in the R(Bucks CC) v SST (the HS2 case), the question is whether the document does not simply define the project, or describe its merits, but which sets the criteria by which it is to be determined by the authority responsible for approving it. The purpose is to ensure that the decision on development consent is not constrained by earlier plans which have not themselves been assessed for likely significant environmental effects.</p> <p>The RIS (as opposed to the NPS) does not set the criteria by which the Scheme is to be determined. The RIS sets out the activities which Highways England must focus on (pursuant to section 3(4) of the Infrastructure Act 2015); and dictates the investment decisions that the Secretary of State has made.</p> <p>In 'complying' with the RIS as required by section 3(6) of the Infrastructure Act 2015, the Scheme's inclusion in the RIS means that the Secretary of State would be required to spend the money on the Scheme; but it does not influence the planning or environmental considerations in considering whether planning consent should be granted. The decision on development consent is a separate question, and so is not constrained by the funding direction suggested by the RIS.</p> <p>Notwithstanding the above debate, the question of whether the RIS should be subject to a SEA is not relevant to the application of section 104 of the Planning Act 2008 to the Scheme (and therefore the ExA's consideration and the Secretary of State's decision making). Section 104 states that the Secretary of State should not decide the application in accordance with any relevant national policy statement if this would lead to the United Kingdom being in breach of any of its international obligations. Determining the application for the Scheme in accordance with the NPS would not put the UK in breach of the SEA Directive as the RIS and the NPS are not the same thing.</p> <p>As such, even if it was agreed that the RIS should have been subject to a SEA (which it is not), that would be irrelevant to the determination of the application for the <u>Scheme</u>. The above debate is therefore academic in</p>
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<p>Clearly this is neither possible nor appropriate for every individual issue. But it is particularly relevant in two contexts:</p> <ul style="list-style-type: none"> □ First, where scheme-by-scheme budgetary limits included in the RIS framework constrain the ability to address significant harm to nationally or internationally protected landscapes: when seen in the context of an integrated system, a different allocation could deliver significantly more environmental benefits and substantially reduce harm to those landscapes. □ Second, in the context of the contributions of individual RIS schemes to its overall impact on environmental issues that can <i>only</i> be addressed in the context of an ‘integrated system’ taken as a whole, the obvious example is climate change and the need to minimise carbon emissions. <p>Of these, the CBA’s most direct concerns are with the former issue where the historic environment (including archaeological monuments) are a core component of protected landscapes, as explained in our main written submission ([REP2-070]).</p> <p>The questions raised here thus reinforce our concerns that big strategic issues are at stake in terms of how the Road Investment Strategy as currently set, and that it not only could be, but actually IS acting as a constraining framework on how nationally and internationally important environmental issues might best be addressed, both in the context of NPSNN requirements, and in respect of the absence of SEA. Noting the limitations of EIA provisions for addressing large scale cumulative, indirect effects and alternative solutions, and the courts’ repeated judgments stressing how SEA and EIA need to go hand- in-hand, we believe the absence</p>	<p>relation to whether this Scheme, that has been through a comprehensive optioneering process, should be consented.</p> <p>It should also be noted that any legal challenge on the basis that the RIS should have been subject to an SEA is now out of time given the RIS was released in 2015.</p> <p>The Scheme has cumulatively assessed the effects of the Scheme to the appropriate level of detail; taking account of all environmental considerations including heritage and carbon emissions.</p>
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	<p>of an SEA for RIS is therefore an issue in respect of compliance with s.104 of the 2008 Act.</p>	
<p>2.1.2</p>	<p>CH.2.1</p> <p>The CBA AGREES that it is essential that the statutory role of Wiltshire Council and Historic England is maintained throughout the archaeological process for the reasons given above. We note in particular the critical importance of independence and objectivity free from the conflicts of interest inherent in the contractor's roles. It is also important that the role of HMAG and the Scientific Committee be maintained and acknowledged to cover all aspects of WHS OUV, not just within the WHS as mistakenly referred to in the draft DAMS</p>	<p>See Highways England's response to Written Question CH.2.1 [REP6-022] and responses to submissions received at Deadlines 5 and 6, and items 3.3.12 & 3.4.13 [REP7-021].</p> <p>Regarding the advisory roles of HMAG and the Scientific Committee in relation to the Scheme, these roles will continue throughout the Scheme's design and construction, according to their established and agreed Terms of Reference (see the draft DAMS as submitted at Deadline 7, [REP7-019; para. 1.32]). The DAMS provides that outside the WHS there are consultation roles for Wiltshire Council and Historic England.</p> <p>The DAMS also provides (paragraphs 6.1.3 and 6.1.9) that where Wiltshire Council is responsible for the approval of a SSWSI, HMP or Method Statement under the DAMS, there is nothing to prevent it consulting with other parties as it considers appropriate. It would therefore be open to Wiltshire Council to consult with relevant heritage stakeholders in relation to works outside the WHS in those circumstances.</p>
<p>2.1.3</p>	<p>CH.2.2</p> <p>It would appear that such areas would be covered by the catch-all provision</p> <p>It is symptomatic of and needs to be considered within a much more general problem with the approach presented in the draft DAMS. Currently the draft DAMS is couched in terms of the limits to what research objectives could be addressed, based on a narrow site-by-site view reliant on inherently limited and uncertain fieldwork results. The approach should be the other way round: to take all the established research objectives and apply a precautionary risk-based approach to consider what the potential</p>	<p>The Applicant does not agree that the research objectives are narrow or that the archaeological evaluation results are 'inherently limited and uncertain'. The Applicant also does not agree that the sampling strategy is limited, or that these are 'arbitrarily set general purpose sampling strategies', or that 'a significant part of the actual archaeology of the scheme, including contributions to WHS OUV, could be lost without proper identification and recording' by the implementation of the DAMS.</p> <p>The application is supported by a comprehensive archaeological evaluation. The Applicant has utilised the most relevant research themes and questions based on the results of the archaeological evaluations and has tailored these to be Scheme specific; the Applicant has taken a precautionary approach and considered what potential archaeology may be uncovered by the Scheme, what research questions that archaeology could address and what investigative methods need to be applied and where in consultation with</p>

	<p>archaeological totality of the scheme is, what opportunities exist, and what investigative methods need to be applied - and where – to overcome the current uncertainties and limitations of what is known to date. Coupled with the sampling limitations proposed, a significant part of the <i>actual</i> archaeology of the scheme, including contributions to WHS OUV, could be lost without proper identification and recording.</p> <p>All areas likely to contain material contributing to the OUV of the WHS (broadly E of R Till to Countess roundabout) where topsoil is removed should be subject to recovery of ploughzone artefacts prior to archaeologically controlled stripping and cleaning with sufficient investigation of all features potentially contributing to OUV to ensure that important material is not destroyed without full investigation and recording. This needs to be guided by the levels of information needed to address all relevant research questions not by arbitrarily set general purpose sampling strategies that may curtail rather than enhance research.</p>	<p>Wiltshire Council, Historic England and HMAG (including Wiltshire Council, Historic England, the National Trust and English Heritage).</p> <p>The Applicant does not agree that archaeological remains that may contribute to the OUV of the WHS stretch as far as the eastern bank of the River Till. The assets and asset groups that are considered to contribute to the OUV of the WHS, and that are situated west and north of the existing WHS boundary are as set out in the HIA [APP-195, Section 5.10, Definition of the assessment area].</p> <p>Regarding ploughzone material - we have responded previously on this to the Examining Authority with regards to comments on the draft DAMS by the Stonehenge Alliance [REP7-021; response 6.3.1]</p> <p>The revised draft DAMS [REP7-019], as submitted at Deadline 7, provides a proportionate and reasonable response in consultation with Wiltshire Council, Historic England and members of HMAG, including ploughzone artefact sampling, identification and planning of archaeological features, sampling of identified archaeological features, archaeological excavation and recording so that ‘sufficient investigation of all features’ will be undertaken and to ensure that ‘important material’ will be fully investigated and recorded in an iterative manner determined by the significance of the archaeological remains that are uncovered.</p>
2.1.4	<p>CH.2.5</p> <p>The CBA has previously commented that the overall outcome of the works for the actual archaeology of the scheme footprint is far from clear, yet this is important in applying the WHS Management plan policies and relevant NSPPN paragraphs (see CBA written submissions [REP2-070 and REP2-075]).</p> <p>This question requires a tiered response because</p> <p>a) ‘Sterilised’ as used in common parlance has two distinct meanings, which applied to archaeology could either be</p>	<p>The Applicant disagrees with the CBA’s point that ‘the overall outcome of the works for the actual archaeology of the scheme footprint is far from clear.’ The Scheme is supported by a comprehensive archaeological evaluation programme and detailed assessment of effects [HIA, APP-195].</p> <p>As explained by the Applicant in response to Written Question CH.2.5 [REP6-022], no land would be “archaeologically sterilised” as a result of the Scheme.</p> <p>The Applicant has responded previously to the CBA’s comments regarding whether ‘preservation in situ can be delivered’. Please see response at items 13.1.2, 13.1.6, 13.1.8, 13.1.10 & 13.1.16 of the Applicant’s response to submissions made at Deadline 3 [REP4-036]). It is the Applicant’s view that preservation in situ is feasible and deliverable.</p>

broadly beneficial or distinctly harmful

b) Areas being 'sterilised' can arise in different ways

Given doubts about whether preservation *in situ* can be delivered, with the default position being archaeological stripping and (potentially) excavation, there are significant areas where radically differing outcomes are possible.

First, in the sense of rendering the archaeological resource *immune* from harm, we suggest that this means

- remains being undisturbed with topsoil left *in situ* AND subject to a long-term change in land use that removes all forms of potential harm, including for example other kinds of development (including utilities); plough damage; burrowing animals; tree roots and windthrows; or
- in addition to the above, remains also being rendered inaccessible for future research

The first of these may include some areas of landscape mounding false cuttings etc mainly within the highways boundary deeper than the range of burrowing animals and utilities, and in long-term maintenance as chalk grassland (provided that the archaeology is preserved without damage during emplacement of embankment materials).

Taking the areas where archaeological remains are retained *in situ* but rendered inaccessible to future research (common to both meanings) this includes areas which would be permanently buried beneath permanent embankments for the scheme beyond the reach of utilities, animals windthrows etc.

This does not include areas of deep spoil disposal, since topsoil would not be retained *in situ* (draft DAMS 5.2.10).

Second, in the sense of depriving society of the potential

Regarding the point made by the CBA on 'rendering the archaeological resource immune from harm', the land that is required for the maintenance and operation of the Scheme, post-construction, will be the subject of a Handover Environmental Management Plan (HEMP). "In respect of cultural heritage and archaeology, the HEMP will identify heritage assets within land to be retained by Highways England and, where relevant, any restriction or constraint on maintenance regimes necessary to ensure the continued retention or preservation *in situ* of the asset: these assets will previously have been identified in HMPs and Method Statements." [REP7-019; para. 5.1.24, Handover Environmental Management Plans). This will ensure that, within land retained by Highways England, the maintenance and operation of the Scheme take cognisance of heritage assets and constraints in routine maintenance and operations and improvements to this part of the road network.

With regards to archaeological remains being preserved *in situ* beneath fill deposits, as explained in response to written question CH.2.5 [REP6-022], these will be accessible for future research, as where remains are to be buried under less than 1m of landscape fill, the existing topsoil would be retained *in situ* and a permeable hi-visibility geotextile barrier membrane would be laid to separate deposited material from existing. Archaeological remains that are buried beneath less than 1m of fill would continue to be accessible for future archaeological investigation, as the deposited material could be removed by machine to expose the barrier membrane. Areas within the mainline road embankments will be archaeologically mitigated in advance of construction [see DAMS REP7-019, Table 11-3: Summary of proposed mitigation areas and actions; REP7-019, Figures 12.1A – 12.1F: Archaeological Mitigation Areas; and REP7-019, Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation *in situ* areas].

The Applicant does not agree that archaeological excavation deprives society of the potential for future archaeological research, or that areas of knowledge / research will be curtailed or lost by the Scheme - the records and finds, once published, are available for re-analysis, re-interrogation and re-interpretation once the archive has been assembled and deposited with a Museum (see for example the Applicant's response to submissions received at Deadlines 5 and 6, items 31.1.5, 6.34 & 6.3.5.5 [REP7-021])

for future archaeological *progeny* (ie knowledge) we suggest that this means:

- the curtailment of future archaeological potential through remains being removed; or
- remains being so emasculated as to lose a high proportion of their value; or
- remains being rendered inaccessible for future research.

We would further propose that a distinction is to be made between major divisions in how evidence survives, by which one whole aspect might be curtailed leaving another aspect available for future, key examples being

- upstanding visible earthworks and structures
- ploughzone archaeology
- subsoil archaeology
- waterlogged deposits
- alluvial and colluvial deposits collection, retention and

discard of artefacts, biological and other palaeo-environmental material. A further consideration under this meaning is the distinction between what is destroyed without record and what is destroyed but with records and objects allowing future researchers to revisit what was

retrieved, but not reinvestigate the original intact remains.

This first meaning would appear to apply as follows:

- a) the curtailment of future archaeological potential through remains being removed
 - **All areas of topsoil removal:** Even if subsoil features are to be preserved *in situ*, the removal of topsoil would destroy meaningful artefact distributions, and in particular the physical loss of a very high proportion of surviving

Regarding the decision-making process as to what is recorded or not, the draft DAMS sets out the approach to making decisions on site regarding the level of sampling according to the significance of the archaeological remains uncovered, see the Applicant's response to submissions received at Deadlines 5 and 6, item 6.3.4 [REP7-021].

Regarding the removal of topsoil, the Applicant has put forward a proportionate and reasonable sampling strategy for artefacts in the ploughzone in consultation with Wiltshire Council, Historic England and HMAG (comprising of Historic England, Wiltshire Council, the National Trust and English Heritage Trust) – see the draft DAMS submitted at Deadline 7 [REP7-019; paras 6.3.11- 6.3.18].

The approach to ploughzone sampling was also discussed at the issue specific hearing on 21 August 2019, as recorded in the Applicant's written summary of oral submissions in relation to Agenda Item 5.4 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained. As noted in ISH8, the deadline 8 DAMS proposes at paragraph 6.3.16 that a representative sample will be identified for further ploughzone sampling, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. In some areas, a sample of up to 100% of the artefact content of the ploughsoil may be necessary, combined with a systematic sample to capture background distributions and transitional areas. The strategy will adopt a reflexive approach such that the sample size may be increased locally in response to the results of the systematic sampling.

With respect to the comments on areas of topsoil placement, the Applicant has previously responded to this point [see REP5-003; response 34.1.39] regarding the mapping of topsoil, its source, where it is stockpiled and its subsequent placement within the Scheme order limits (see also the draft DAMS as submitted at deadline 7 [REP7-019; para 5.2.19] regarding recording this information for deposition with the Wiltshire & Swindon Historic Environment Record (WSHER)). Topsoil will be placed either in areas already archaeologically mitigated or on top of fill deposits where archaeology is already mitigated (deeper than 1m) or preserved *in situ* (less than 1m of fill) and therefore accessible in the future – the placement of topsoil therefore does not 'sterilise the surface archaeology of the 'recipient' areas'. The

prehistoric lithics. Given their physical survival (prehistoric pottery also being important but more fragile) and the 'special' character of most earlier prehistoric subsoil pits, burials etc, the ploughzone lithics represent a large and distinct resource with high potential both collectively and through rare individual artefacts (eg from retouched implements for different purposes to polished axes or exotic stone) to contribute to a wide range of research questions.

The proportion NOT sampled according to draft DAMS para 6.3.4, this typically means **99% to 96% unrecorded loss** (ie 100% of the area less the sample proposed for investigation and retrieval of artefacts) except rarely for assemblages (96% to 80%), or even more rarely less still. This assemblage driven model is predicated on areas with low level scatters being largely excluded from recovery, even though these might be chronologically or functionally indicative or include rare and exotic artefacts not occurring in clusters, thereby curtailing some lines of research not recognised in the DAMS. This especially relevant to Mesolithic material that is often sparse as well as requiring appropriately fine sieving techniques and meshes (cf Draft DAMS paragraph 6.3.27) and exotic artefacts and eg bluestone chips.

- **All areas of topsoil placement:** The removal of topsoil for use elsewhere is recognised as not only destroying artefact distributions but also creating false ones where the 99% to 96% of unsampled topsoil is placed. While the location of the 'donor' and 'recipient' areas are due be recorded, the process still sterilises the surface archaeology of recipient areas as well as the donor locations. (The proposal 5.2.11 to keep all topsoil derived from the WHS for re-use within its boundary is an

Applicant disagrees that this procedure is 'meaningless'; it has been discussed as a requirement with Wiltshire Council, Historic England and members of HMAG.

With respect to areas of subsoil disturbance, the Applicant disagrees that the archaeology will be 'lost without recovery of artefacts' as it will be carefully archaeologically excavated and recorded in advance of construction [REP7-019, para. 1.5.1].

Note – there are no proposed 'tunnel escape shafts' to the surface – escape would be through cross-passages and from the Eastern and Western portals.

The hectarages of all proposed archaeological fieldwork areas and preservation in situ areas are provided in the deadline 7 DAMS [REP7-019, Appendix D Action Areas].

The Applicant disagrees with the CBA's comments regarding the percentage sampling of features. The sampling strategy has been revised in consultation with Wiltshire Council, Historic England and members of HMAG and is set out in the draft DAMS submitted at deadline 7 [REP7-019; paras. 6.3.36 – 6.3.52]; the iterative excavation sampling strategy will be dictated by the significance of the remains, their stratigraphic complexity and their artefactual and palaeoenvironmental content and will be developed through consultation on site. Sample minima are a guide – not a definite and prescriptive amount.

In terms of the CBA's submission about the proportion of deposit areas of subsoil disturbance and the need for a flexible approach to sampling, the Applicant's response as set out in the DAMS is deliberately flexible and iterative and will respond appropriately to discoveries and their significance [REP7-019, para.6.3.7]. Appropriate expert advice will be sought, including that of the Historic England Regional Science Advisor [REP7-019, 6.3.9 (palaeoenvironmental sampling), 6.3.10 & 6.7.6 (geo-archaeological investigations), 6.3.60, 6.3.62 & 6.3.71 (environmental sampling and assessment), 6.3.73 & 6.3.76 (scientific dating) and 8.1.5, 8.1.8 & 8.3.2 (monitoring)]. Note also that research themes and questions proposed in Section 4 of the DAMS will be reviewed and updated during preparation of SSWSIs, during fieldwork and during preparation of the post-excavation assessment report. The research themes and questions as set out in the

archaeologically meaningless recipe for confusion, doing nothing to preserve the archaeology)

All areas of subsoil disturbance: The archaeology of all areas where subsoil disturbance is proposed will be lost. This is likely to include all cuttings, foundations including piling for structures, drainage ditches, services, retained cutting cut and cover tunnel and tunnel maintenance building, tunnel escape shafts etc PLUS any disturbance required for temporary construction purposes (eg backfilled excavations for structures).

The proportion of deposits NOT investigated (and therefore subject to unrecorded loss of artefacts, animal bones, other palaeo-environmental material and human remains) would vary:

First, the total relative areas identified for mitigation by machine excavation, hand excavation or strip map and record investigation are not given

Second, the total area where none of these apply but would be subject to archaeological monitoring and recording is not given.

For areas subject to the most intensive and careful investigation (ie *machine excavation* and *hand excavation*) the following indicative proportions of archaeological deposit would be lost without recovery of artefacts, animal bones, other palaeo-environmental material (and potentially human remains):

DAMS are therefore not static and constrained, but subject to further expansion and development.

The Applicant disagrees with the CBA comment that ‘a significantly higher proportion of archaeological deposits with any artefacts, animal bones, other palaeo-environmental material and potentially human remains they might contain would be lost without recovery’ in strip-map- and-record investigation, or archaeological monitoring and recording areas, as the on-site team respond to the significance and the potential of the remains discovered [REP7-019, Section 6.4, Strip, Map and Record]. Specifically, “The excavation sample strategy will be developed as an iterative process at site consultation meeting(s) between the Archaeological Contractor, Wiltshire Council (in consultation with Historic England) HMAG/WCAS and the TPA [Technical Partner’s Archaeologist]” [REP7-019, para. 6.4.3]

The statement by the CBA regarding waterlogged deposits in the context of Blick Mead, the eastern approach road and Countess Roundabout is incorrect. The evidence indicates that it is likely that all peat deposits were removed during the construction of the current dual carriageway (the Amesbury Bypass) – see the Applicant’s written summary of the oral submissions made in relation to Agenda items 4 (i), (ii), (iii)) at ISH 2 Cultural Heritage [REP4-030] and the Preliminary Ground Investigation Report [APP-273, page 53, paragraph 4.2.28 and Table 5.2].

The Wilsford Shaft has been fully archaeologically excavated see the Applicant’s written summary of the oral submissions made in relation to Agenda items 6 (v) at ISH Hearing 2 Cultural Heritage [REP4-030] and all its deposits removed. Appendix D of the draft DAMS submitted at deadline 7 [REP7-019] identifies areas where solution hollows have been identified.

With regards to Blick Mead, the Scheme is assessed not to have a significant effect on groundwater levels or flows [see ES Chapter 11; Appendix 11.4 Groundwater Risk Assessment – Annex 3 [APP-282]. The Applicant has responded to the CBA’s comments elsewhere in this response in this respect.

With regard to the CBA’s submission on ‘alluvial and colluvial deposits’, a strategy for geoarchaeological investigation is as set out in the draft DAMS submitted at deadline 7 [REP7-019; Section 6.7; in particular paras. 6.7.6 and 6.7.7]. Appendix D also highlights action areas where there is potential for

- **100%** of approx.. **87.5%** of tree throw hollows (based on [REP3-24] p.13 and draft DAMS 6.3.42-6.3.43); PLUS c. 85% per m³ of the remaining c. 12.75% (see below)
- **80%** of linear features not identified below
- **60%** enclosure ditches
- **80% to 0%** for middle Bronze Age to Iron Age ditches (dependent on there being sufficient material in the initial sample or other evidence to date them)
- **0%** small curvilinear features
- **0%** burials (where identifiable as such)
- **0% or 50%** small pits, postholes etc (especially structures)
- **Variable % *in situ*** ground surfaces, colluvial deposits etc

The proportion of deposits areas of subsoil disturbance due to be investigated under **strip-map- and-record investigation**, or **archaeological monitoring and recording** a more flexible approach to sampling is to be adopted in relation to research objectives identified in individual SSWSIs (with expert advice). It is not clear, whether these could include research issues outside those already identified in DAMS? In principle this is a far more responsive approach but these areas are not hand-cleaned so small features and those backfilled with clean chalk (as with some burials post holes etc) are at significantly more risk of being missed. Typically, these approaches are far less rigorous, seeking only to characterise remains, elucidate stratigraphic relationships and investigate key

alluvial or colluvial deposits to mask archaeological remains. Each action area would be the subject of a Site Specific Written Scheme of Investigation (SSWSI) which would outline how these deposits would be further investigated.

With regards to the CBA's submission on 'Collection, retention and discard' discard policies, this will be agreed with the relevant recipient Museum at the detailed design stage [see draft DAMS as submitted at Deadline 7, REP7-019, para. 10.1.2].

Regarding the 'discard rates [and the] sampling strategy being adopted' the draft DAMS sets out the approach to making decisions on site regarding the significance of the archaeological remains and materials being recovered and in order to make decisions on the approach to archaeological sampling and recording, in consultation with the relevant statutory bodies – in this case Wiltshire Council, Historic England, and members of HMAG.

As stated above, the draft DAMS, as submitted at Deadline 7 [REP7-019; paras. 6.3.36 – 6.3.52] is iterative in terms of the levels of sampling and the significance of the archaeological remains uncovered – it is a proportionate and reasonable strategy that has been developed in consultation with Wiltshire Council, Historic England and members of HMAG, and takes into account the potential for finding human remains and concentrations of finds.

The Applicant disagrees with the CBA comment that 'there will be little scope to develop a more responsive approach' as unexpected finds, outside the scope of the SSWSI, will be the subject of a further SSWSI, where a further or amended SSWSI is required following consultation with HMAG / WCAS about the unexpected find – see the draft DAMS, as submitted at Deadline 7 [REP7-019; paras. 6.1.18 – 6.1.20].

With regards to the CBA's comments on museum collection and discard policies, storage space, archive forecasts, scale of archive, curation and conservation capacity' these are all matters for discussion at the detailed design stage. Initial discussions have been held with the Salisbury and South Wiltshire Museum. The finds and records will be retained in appropriate storage facilities until an agreement is concluded. The project archive of reports and archaeological finds would be deposited in the museum once the archaeological excavations have been analysed and published. The

deposits such as burials. So apart from exceptional features, a significantly **higher** proportion of archaeological deposits with any artefacts, animal bones, other palaeo-environmental material and potentially human remains they might contain would be lost without recovery.

- **All waterlogged deposits:** The extent of waterlogged archaeological deposits (or indicators of human presence from peat deposits) in the Avon valley does not appear to have been mapped; nor has the recorded depth below ground level of waterlogging in the now empty Wilsford Shaft been considered in relation to the potential for other such features (as noted in the excavation report). Any effects are far from easy to predict because of the multivariate factors involved and localised conditions that can prevail. In this case the evidence is not available to make clear predictions. This is much more fully discussed below in respect of Blick Mead hydrology, but in general, desiccation and the resultant oxidation and bio-degradation of preserved organic remains in waterlogged deposits can result in total loss of whole dimensions of archaeological knowledge reflecting artefacts and associated personal, crafts, economic, ritualistic activities not otherwise in evidence; foodstuffs and diet; living conditions; economic activities; the changing environment; etc. As noted below the speed and degree of loss can be highly variable due to multiple factors, not just height of the water table.
- **All alluvial and colluvial deposits:** Apart from the intrinsic value of these deposits and any artefacts and palaeo-environmental material occurring within them, they can also result in far better preservation than

publication of the archaeological results and the deposition of the archive would be appropriately funded by the Applicant.

With respect to the CBA submissions under the heading “Overall Policy Implications”, these submissions were also made at the ISH8 and are responded to in the Applicant’s written summary submitted at Deadline 8 (Agenda Item 3.1(i)). The Applicant’s response is also set out here. The Applicant does not accept that the judgment of Mr Justice Kerr in Hayes v York CC is limited to its facts. The key text of the judgment on which the Applicant relies (at paragraph 81, as is set out in Appendix B to its oral summary of the ISH on Cultural Heritage [REP4-030]) is set out in the portion of the judgment that gives general guidance on the correct approach to the interpretation of the NPPF. Mr Justice Kerr’s judgment clearly indicates where that general discussion of the law ends and the specific application of those general principles to the facts of this case begins (please see paragraph 83 which starts “In the present case...”).

Moreover, Mr Justice Kerr’s judgment gives no indication that it is limited to its facts; in fact, Mr Justice Kerr makes clear that his judgment is the first (and to our knowledge, remains the only) judgment on the interpretation of the relevant paragraph of the NPPF (please see paragraph 1 of the judgment). In such circumstances, if Mr Justice Kerr had intended to limit his judgment to the case in hand, we would expect this caveat to have been explicitly stated (as is normally the case in judgments). No such caveat exists. Furthermore, we do not believe that the CBA’s interpretation of paragraph 85 is accurate. Our interpretation of paragraph 85 is that Mr Justice Kerr doubts that it is valid, generally, to draw any distinction between (a) weighing the public benefits of recording archaeological finds in the planning balance and (b) recording as mitigation which reduces the detriment caused by an already justified development – but in any event this distinction (if it does exist) should be rejected (which is what happened in the Hayes case). That is not the same as or akin to limiting the application of the entire judgment to the facts of the Hayes case, particularly in the context where Mr Justice Kerr has adopted the approach noted above of clearly stating where the general discussion stops and the specific discussion begins (at paragraph 83).

Furthermore, in relation to the second bullet point made by the CBA [in REP6-084, on this point], the Applicant considers that the fact that the NPPF

elsewhere of any earlier archaeological remains (including ground surfaces etc) which elsewhere have been destroyed by the centuries of cultivation that created most colluvial deposit in the first place.

Appendix D of the draft DAMS provides for each identified 'site' an account of *Soil, Colluvial Sequences and Natural Features*. This shows that colluvial deposits are relatively ubiquitous in respect of fairly thin deposits, with some much more significant areas. But while a variety of specific localities have been identified (colluvial dry valley deposits, other geomorphological hollows with infill; alluvial deposits in the Avon and Till floodplains). However, the extent of these deposits is not fully mapped, and it is not clear to what extent where such deposits would be lost how fully they would be excavated to ensure that no well-preserved material within or beneath them would be lost. Because of these limitations of mapping and proposed approach to sampling such deposits in relation to areas of subsoil disturbance, it is not possible to judge what proportion might be lost, either with or without full excavation and record.

- **Collection, retention and discard:** 'Collection' refers to materials that are collected for analysis (whether by hand or systematic sieving or other processing); 'retention' refers to the proportion of collected material retained for further study and long-term curation; 'discard' includes materials that are discarded at any stage, with or without study. Thus what is not collected is, by default, discarded; some common bulky materials may be collected and recorded but not retained for future study; some materials (especially those recovered through soil sampling or retrieved in blocks for laboratory excavation) may be

and NPSNN have not been amended since the Hayes v York CC is evidence that the accepted interpretation of the NPPF is that which has been set out in this case – i.e. “the last sentence of that paragraph [paragraph 141 of the NPPF] only makes good sense if interpreted so that the words “should not be a factor” are taken to bear the meaning “should not be a decisive factor”. The legal position, in the absence of any change to policy, is comprised of the existing policy statements and the case law as to their interpretation. If the judgement in Hayes v York CC did not reflect the intention of those policy statements, there has been the opportunity to clarify that in subsequent revisions. That has not occurred, as the CBA point out.

The Applicant refutes that it states in the draft DAMS that 'preservation by record' is equivalent to 'preservation in situ'.

With respect to compliance with the Management Plan, the Applicant has responded to the CBA's written representations at Section 21.4 of its comments on written representations [REP3-013].

retained with processing residues discarded.

The draft DAMS sets out the proposed approaches at paragraphs 6.3.25 to 6.3.30 and 6.3.52 to

6.3.80. These sections provide a fairly coherent idea of what would be collected and retained, and how detailed approaches would be developed for each SSWSI, but they provide very little idea of what would be discarded – especially in respect of being discarded automatically with deposits not investigated under the general sampling policy see above.

The sections dealing with late prehistoric ditches and human remains illustrate the issue (but without demonstrating a solution:

6.3.36Linear features identified as of later prehistoric (Middle Bronze Age to Iron Age) date will be considered for up to 100% excavation, to take account of the frequency of human burials and other intentional deposits (e.g. animal burials) encountered within the palisade system linears excavated west of Stonehenge and at West Amesbury.

6.3.69 ...[Human] Remains may also be discovered at other locations along the Scheme as they are generally undetected by traditional reconnaissance methods. Both undisturbed burials and disturbed remains may be found within the investigation areas in shallow or deep features, or in a dispersed condition. They may be present within subsoil or colluvial deposits, or within features cut into the underlying natural surface. Burials may be associated with other funerary structures or monuments.

Read in conjunction with the percentage discard rates outlined above it is clear that the sampling strategy being

adopted is predicated on enhancing the sampling done to date, nothas to be seen in the practical context of how excavation proceeds:

- the general provision for linear features is 20% excavation minimum 1m sections, so if no indication of date has been found in the initial sample (which would not be unusual) the policy for the other 80% of 4m+ lengths (including any burials, concentrations of finds etc) would be discard.
- This would be the policy anyway for Roman or Saxon ditches which can also contain such materials
- In the case of other features, it is likely that most deliberate burials would be locatedand investigated (at least in the areas of more careful excavation) but the potential for discard of human remains with the other kinds of deposit referred are clearly significant.

Because individual SSWSIs will be required to conform with the DAMS, there will be little scope to develop a more responsive approach. This is because DAMS is predicated on a limited view of research potential based on the results of survey and fieldwork, not that potential total archaeological content of the scheme. A particular problem of arbitrary limits on %deposits investigated is that artefact and animal bone assemblages are not maximised to provide all the insights they could if they are large enough to go beyond the most basic analysis

- Not just what crops were grown and meat eaten, but what husbandry techniques were used

- Not just what date a few sherds of pottery might (or might not) suggest but also social, artistic dietary and other information that larger assemblages can reveal

Instead of being arbitrarily set to the usual industry standard (there is nothing special about what is proposed here), the approach, especially for OUV needs to be geared to ensuring as much evidence as possible is assembled to address both established and new research questions.

Further issues arise in respect of Museum collection and discard policies, and especially how these may be affected by practical consideration of storage space. It is understood that Salisbury Museum has agreed in principle to accept the entire project archive (Draft DAMS para

10.1.2 p112), but there is no indication either whether the Museum has received any indicative forecast (based on evaluation materials and proposed or potential sampling strategies) what scale of archive might be involved; nor is it clear what their retention and discard policy would be for this material; nor whether there could be any issues of storage space, or curation and conservation capacity given that this would be by far the largest project ever undertaken within and adjacent to the WHS.

Overall Policy Implications

We note Highways England's comments on Mr Lambrick's observations on the implications of NPSNN paragraph 5.139 (see Appendix B of [REP4-030]), in which they propose a different reading of paragraph 5.139 based on the judgment in Hayes v. York CC judgment [2017] EWHC 1374 (Admin). They suggest that paragraph 5.139 stating that the ability to *record evidence*

should not be a factor in determining the significance of loss should not be taken as written, and that some (non-decisive) weight can be given to the benefits accruing from the ability to record.

We explained in some detail in our original written statement why, as firmly stated in NPSNN, investigation and record is to be regarded as inferior to retention *in situ*. The Applicant's interpretation of the judgment in Hayes v York City Council appears to be erroneous: the CBA would draw the ExA's attention to the facts that

- At paragraph 85 of his judgment the Mr Justice Kerr effectively limits its wider application beyond the case at hand, because he acknowledged that, even though he doubted it, *The distinction between public benefits weighed in the scales in the balancing exercise and mitigation measures which attenuate the detriment caused by an already justified development could* be intrinsically valid.
- Since then, neither the wording of NPSNN nor the NPPF have altered on that score – despite a thorough-going update of NPPF in 2018 and a smaller one in 2019
- Since then Planning Policy Guidance on the historic environment has just been updated (<https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment> Paragraph: 002 Reference ID: 18a-002-20190723 July 23rd 2019) to re-emphasise the policy as written:

Part of the public value of heritage assets is the contribution that they can make to understanding and interpreting our past. So where the complete or partial loss of a heritage asset is justified (noting that the ability to record evidence of our past should not be a

factor in deciding whether such loss should be permitted), the aim then is to:

- *capture and record the evidence of the asset's significance which is to be lost*
- *interpret its contribution to the understanding of our past; and*

make that publicly available (National Planning Policy Framework paragraph 199) This seems to leave the main point from the Hayes v. York CC judgment to be that once decision-makers have decided whether or not loss or harm is justified in the light of other public benefits (which were the justification for consenting that case of less than substantial harm), *the extent to which the detriment is mitigated* is still relevant to what happens next. This would imply that while the loss of or harm to the asset might in principle be justifiable on other grounds, consent could still be withheld if *the extent to which the detriment is mitigated* is not adequate, despite the implicit assumption that in cases of loss or harm appropriate recording will be ensured.

Were the discredited euphemism '*preservation by record*' – as used copiously by HE in the draft DAMS

– to be applied in its literal sense (as if inevitably partial recovery were equivalent to *in situ* preservation) it would undermine current policies against substantial harm and preferences for *in-situ* preservation for future generations.

As explained in our original written submissions ([REP2-070; REP2-075]), the WHS Management Plan sets a higher standard of test in respect of archaeology that contributes to the OUV of the WHS.

2.1.5

CH.2.6

The CBA has already commented on this at some length both in writing and orally. To address this properly several considerations need to be addressed:

- What different geophysical techniques HAVE been used over what areas?
- What sampling rates were used over what areas?
- What techniques were not used that could provide an enhanced level of results?
- As compared with evaluation results how reliable are the surveys in respect of
 - distinguishing archaeological remains from natural features
 - identifying and distinguishing different kinds of archaeology
 - recording features that no longer have a subsoil existence)
 - not giving false positives
 - not missing significant archaeological features

Where the techniques that have been used were not successful (especially in not identifying archaeological features subsequently found by trenching) would the deployment of other techniques be successful?

The Applicant has presented evidence that almost the whole scheme area was covered by magnetometry. Two levels of magnetometry sampling have been applied over most of the scheme, the majority being covered by the denser levels. Very much smaller areas have been covered by electrical resistance

See the Applicant's response to Written Question CH.2.6 [REP6-022].

In response to CBA's questions regarding the reliability of the geophysical survey techniques used to inform the Scheme design and archaeological mitigation strategy, the Applicant has supplied the results of the archaeological evaluations already to the Examining Authority [REP1-041 to REP1-056]. The geophysical survey reports detail the methods used and the sampling rates and the results. The archaeological trial trenching reports detail the results of targeting geophysical anomalies, features that have shown up on aerial photographs and blank areas and the archaeological features that have been identified.

With regards to the 'deployment of other techniques' the Applicant affirms that its archaeological evaluation strategy, was drafted following consultation with HMAG (including Wiltshire Council, Historic England, the National Trust and English Heritage) and the Scientific Committee. Both bodies approved the strategy which provided a robust and comprehensive strategy for the archaeological evaluation of the Scheme. In addition to magnetometry survey, multichannel Ground Penetrating Radar has been undertaken over the key western portal area.

In terms of the assertion that details from previous investigations have not been presented, the results of previous investigations are all summarised in Appendix 6.10 Previous archaeological and antiquarian investigations within the Stonehenge World Heritage Site and its environs [APP-219] and the Appendix 6.1 Annex 4 - Previous archaeological and antiquarian investigations within the Stonehenge part of the WHS [APP-199]. The Applicant asserts that sufficient information has been submitted to provide a robust baseline.

It is not correct for CBA to state that the Applicant has not compared the geophysics results with the evaluation trenching results. The results of the geophysical surveys have been presented in various reports submitted to the Examining Authority including comparing and contrasting the results of the different geophysical survey techniques (for example see the Deadline 1 Submission - Report 1 - Geophysical Survey Phase [REP1-041, Sections 5 and 6] and where these geophysical anomalies have been confirmed by

profiling and ground penetrating radar to clarify specific areas (colluvial deposits and some features detected by magnetometry to clarify their form). Some of the work relied upon was carried out for previous schemes (in particular at the east end of the area affected) but the details are not presented. There is no simple clear map of exactly which methods were applied where.

Magnetometry is reliant on detecting differentiations in magnetically sensitive deposits (reliant on ferrous particles in the soil whose magnetic sensitivity can be enhanced by organic decay or heat). Where features (such as graves) are backfilled with the same subsoil as was excavated and little or no other magnetically enhanced material they tend to be undetectable. Similarly, typical sampling levels often fail to detect small features such as small pits and burials because the differential magnetic characteristics are too weak to detect. A comparison of the two levels of sampling used has been presented by the Applicant, indicating (not surprisingly) that greater clarity has been achieved by the closer spaced sampling transects.

But as previously noted both in written submissions and orally, the Applicant has NOT systematically compared the geophysics results (as recorded in interpretive mapping) to what was found in evaluation trenching. The CBA's overall impression from examining evaluation reports interpretative mapping of geophysics with trenching and ploughzone sampling is that on the negative side of the balance the geophysics

- failed to locate ANY of prehistoric burials and pits revealed by trenching (including not distinguishing one within a larger tree-throw

archaeological trial trench evaluation [REP1-042; REP1-044; REP1-045; REP1-047; REP1-049; REP1-052]).

With regards to the point that isolated discrete burials are often difficult to detect by geophysical survey techniques, the Applicant acknowledges this. A further response on this point is provided in response to Written Question CH.2.6 [REP6-022].

The Applicant also acknowledges that with regards to geophysical data on its own, it is difficult to interpret anomalies (as to whether they are of natural or anthropogenic origin) without ground truthing via archaeological trial trenching. A further response on this point is provided in response to Written Question CH.2.6 [REP6-022].

With regards to 'systematic review or trialling of methods used elsewhere in the WHS, or any systematic research into how different methodologies might reduce inevitable uncertainty', the Applicant stands by its Archaeological Evaluation Strategy which was agreed and approved by HMAG and the Scientific Committee. Please see the Applicant's response to Written Question CH.2.6 [REP6-022].

In response to comparing and contrasting the results of the different geophysical survey techniques, the results of the geophysical surveys have been presented in various reports submitted to the Examining Authority including undertaking this exercise (for example see the Deadline 1 Submission - Report 1 - Geophysical Survey Phase REP1-041; Sections 5 and 6] and where these geophysical anomalies have been confirmed by archaeological trial trench evaluation [REP1-042; REP1-044; REP1-045; REP1-047; REP1-049; REP1-052].

With regards to the density of ploughzone artefacts and the location of verified prehistoric archaeology, the Applicant has put forward a report at Deadline 3 - Review of Ploughzone Lithics and Tree Hollow Distributions [REP3-024] that compares archaeological features with ploughzone artefact scatters across the Scheme.

anomaly that was identified)

- lacked clarity about the vast majority of nonlinear geophysical anomalies or potential anomalies including whether or not they are of natural or anthropogenic origin
- was not fully reliable in locating/characterising some linear anomalies

On the positive side the geophysics did

- demonstrate (unsurprisingly) that the subsoil archaeology of the scheme area is far more complex than known from pre-survey knowledge including aerial imagery
- locate moderately reliably most linear anomalies, but not much more reliably than aerial imagery achieved some identification of linear anomalies not manifest as subsoil features (this could be where enhanced magnetic properties of an un-ditched boundary still persist in the topsoil and is analogous to cropmarks similarly not being manifest as subsoil features, as is also indicated here. This should be but has not been identified as a positive addition to the potential scope of ploughzone archaeology.

The greatest problem with the geophysics is the lack of any systematic quantified scrutiny of reliability. This applies at two levels.

First The scope of work and consideration of techniques presented to the Examination does not include any other systematic review or trialling of methods used elsewhere in the WHS, or any systematic research into how different methodologies might reduce inevitable uncertainty. Although

different methods including resistivity have been widely applied, and in many cases then tested by excavation in the WHS, it is not clear how far any implications were considered. In the light of such a review it ought to be possible to judge rather better whether deployment of techniques that have not been used would have been a valuable adjunct, and if so whether this should be part of the pre- excavation (ploughzone) mitigation strategy.

Second The Applicant has not yet provided any systematic quantification to correlate geophysical anomalies identified and ploughzone archaeology to evaluation results. The quantification should include as a minimum

- The number of geophysical anomalies were identified and what proportion rated as definite or potential archaeology
- The number and proportion of anomalies intersected by trenching
- The number and proportion of anomalies interpreted as *definite* archaeological intersected by trenches that a) were verified; b) not verified
- The number and proportion of anomalies interpreted as *possible* archaeological intersected by trenches that a) were verified; b) not verified
- The number and proportion of different types of archaeological feature revealed by trenching (notably human burials and pits etc) NOT located by geophysics

The location of verified prehistoric archaeology relative to the density of ploughzone artefacts within 10m. To estimate and how the totality of the archaeology of the scheme might be affected

	these figures need to be compiled in a manner that distinguishes different permanent and temporary landtake areas.	
2.1.6	<p>CH.2.7</p> <p>Instead of carping at Professor Parker Pearson’s calculations, it would be more helpful if the Applicant’s approach to answering such challenges was to carry out the perfectly valid extrapolation exercise themselves. The Applicant has simply not addressed the fundamental point that Professor Parker Pearson, the CBA and others have made: that there has been no realistic quantified assessment of the totality of the archaeology of the scheme footprint. The question of burials in the area of the western approaches is only one example, chosen because it is so obviously an issue there: the much wider point is that the same broad issue applies everywhere, to all types of deposits.</p> <p>The Applicant’s response also fails to acknowledge what the worst case scenario for cumulative effects might be given the latitude available for detailed design changes within the limits of deviation – a point very relevant to ExA’s question concerning what archaeology would be sterilised</p>	<p>The Applicant states that it has provided a comprehensive set of archaeological evaluation reports [REP1-041-052] which set out their results in detail and this provides the robust baseline that has been assessed in the ES [APP-044] and the HIA [APP-195].</p> <p>The Applicant has assessed the ‘worst case scenario’ and its cumulative effects as set out in the ES [APP-044; APP-053]; the HIA [APP-195]. The Limits of Deviation have been considered as part of that assessment and they do not give rise to further significant effects.</p>
2.1.7	<p>CH.2.8</p> <p>As CBA has previously commented in written and oral submissions, on flaws in the Applicant’s approach to assessing the effects on the significance of heritage assets through changes to their setting. The ExA is right to challenge the adequacy of the assessment made by the Applicant in this and other cases.</p>	<p>The Applicant has already responded as to why the setting of Blick Mead was scoped out of the settings assessment, and in relation to its approach generally to the assessment in this respect including addressing the comments of the ExA (see the Applicant’s response to submissions made at Deadline 4, item 34.1.43 [REP5-003]. See also the Applicant’s response to Second Written Questions CH.2.8 [REP6-022]).</p> <p>The assertion by the CBA that ‘a Bronze Age barrow within the scheduled area of Vespasian’s Camp (potentially a millennium earlier) has not been</p>

The ExA's observations made during the ASI are a valuable and very pertinent part of what the assessment needs to consider – and in different ways relevant to each of the assets – but they are by no means the full picture.

In Appendix E of our main written submission [REP2-076] we presented a matrix outlining the factors needing to be taken into account and how this can facilitate an assessment based on ordered professional judgement. In our original submission we did not look into this in detail. In view of our previous concern coupled with the ExA's request for further comment, we have now looked at this more fully. Although still falling short of a comprehensive assessment, we hope that the fairly lengthy account that follows not only takes account of the ExA's observations, but also puts them into the context of a fuller assessment of the main setting issues that arise. This includes the complexity of how particular aspects of the scheme contribute not only to several different effects on different heritage assets which in themselves are significant; but when seen in terms of

The quantum harm when the proposals are seen in terms of significantly exacerbating the original harm caused by the A303; and

The quantum effects on three key heritage assets and others not examined of several particular aspects of the scheme plus the original A303.

are even more significant in terms of their cumulative effects (cf PINS Infrastructure advice note 17).

As explained in oral submissions these three assets belong to utterly different periods straddling over 9 millennia; they are entirely different in their character, function and historical context and as a

considered' is incorrect. The Vespasian's Camp Barrows are considered as Asset Group 32 in the HIA. The HIA [APP-195].

The Applicant refutes that the linear group of barrows extending east from King Barrow Ridge that are marked by a few of the Nile Clumps have not been considered. These are considered in the HIA [APP-195] as part of Asset Group 30 the Avenue Barrows.

The Applicant refutes that aspects that contribute to or detract from the significance of assets or Asset Groups have not been assessed. These are detailed in the Cultural Heritage Setting Assessment [APP-218] and in the HIA [APP-195].

With regards to CBA's submission that the Applicant has not considered how 'the scheme would add cumulatively to the severe impacts caused by the present A303', the Applicant notes that much of the existing A303 will be removed and either converted to a restricted byway (from Longbarrow roundabout to Stonehenge Road) or be replaced by chalk grassland (Stonehenge Road to Vespasian's Camp) introducing beneficial change.

The Applicant agrees that the current A303 is detrimental to the setting of many assets and Asset Groups. The Applicant has assessed reasonable alternative routes, including the F010 route, including having regard to the impacts of those alternatives (see Chapter 3 of the ES, Alternatives [APP-041] and the Technical Appraisal Report (TAR) [REP1-031]). Bare earth modelling for assets and Asset Groups that contribute to the OUV of the WHS, this approach is supported by ICOMOS [APP-200; page 15] in conjunction with the International Astronomical Union (IAU) as well as HMAG.

The Applicant disagrees that its approach to the inclusion of assets contributing to OUV is "misplaced". The Applicant refutes that it is correct to say that Blick Mead is 'already acknowledged as contributing to WHS OUV'. The Applicant's approach is endorsed by Historic England (see the Written Summary of Oral Submissions made at the ISH 2 Cultural Heritage in relation to Agenda item 4 (i), (ii), (iii) [REP4-030; page 2-8])

Similarly to Blick Mead above, the Iron Age aspects of Vespasian's Camp do not contribute to the OUV of the WHS, but Asset Group 32 Vespasian's

result the nature of their significance could not be more different.

A further consideration is that there is a Bronze Age barrow within the scheduled area of Vespasian's Camp (potentially a millennium earlier) that has not been considered, although the factors contributing to its setting in terms of relationships to topography and other monuments are rather different.

Likewise the relationships of a linear group of barrows extending E from King barrow Ridge, in part marked by a few of the Nile clumps have not been fully considered. We have not include these.

The approach adopted by the Applicant has not fully identified which aspects of their surroundings most contribute to or detract from the significance of these assets; nor how those factors were changed by the construction of the present A303; nor how far the proposed scheme would further affect understanding and appreciation of these assets' very different significances.

In not considering how the scheme would add cumulatively to the severe impacts caused by the present A303, the assessment also provides no basis for appreciating how, if an altogether different route were to be adopted (such as an optimised F010), there might be an opportunity not only to avoid any new harm, but also, with landowners' support, reverse that caused when the current road was built.

The Applicant's approach to assessing the settings of assets contributing to OUV as 'bare earth' for the HIA and those deemed not to contribute to OUV as vegetated is especially bizarre and ill-conceived in this case, especially as the exclusion of some assets as contributing to OUV is also misplaced:

Blick Mead is already acknowledged as contributing to WHS OUV

Camp Barrows does contribute to the OUV of the WHS and these are considered in the HIA [APP-195].,

The Applicant's response to Second Written Questions CH.2.8 [REP6-022], the Applicant's written summary of oral submissions made at ISH2, Agenda item 6(vii) [REP4-030] and with regard to groundwater issues at REP4-030; Agenda item 8.

With regard to the effect of the Scheme on known flint scatter sites in this part of the WHS, the approach to Lithic assemblages within the ploughzone at the Eastern Portal and approaches are addressed in the draft DAMS submitted at Deadline 7 [REP7-019; paras. 6.3.11-6.3.18].

The Applicant does not agree with the CBA's overall conclusion with respect to Blick Mead that that the Scheme would "exacerbate the significant harm already done by the existing A303". The dual carriageway already exists to the north of Blick Mead. There will be No Change to the significance of the asset from the construction or operation of the Scheme.

The setting of Vespasian's Camp Iron Age Hillfort is considered in the Setting Assessment [APP-218, AG32, p. 75]. See also the Applicant's response to Second Written Question CH.2.8 [REP6-022].

The Applicant does not agree with the CBA's overall conclusion with respect to Vespasian's Camp that the Scheme would "exacerbate the significant harm already done by the existing A303". The dual carriageway already exists to the north of Vespasian's Camp. There would be No Change to the significance of the asset from the construction or operation of the Scheme. The Scheme would not change the existing character or diminish the contribution made by the setting to the significance of Vespasian's Camp.

The setting of Amesbury Abbey Registered Park and Garden is considered in the Setting Assessment [APP-218]. See also the Applicant's response to Second Written Questions CH.2.8 [REP6-022].

The Applicant acknowledges that the Amesbury Abbey estate used to be much larger than the current area that is designated as a Registered Park and Garden. The Applicant notes, however, that areas to the north and west of the RPG would have been considered for designation as part of the

because of its major significance in contributing to an understanding of the societies and landscape that were the forerunners of the Neolithic and Bronze Age monumental complex – but a no trees ‘bare earth’ context here could not be more inappropriate.

Vespasian’s Camp is not recognised by the Applicant as contributing to the WHS OUV despite being a major part of the general value of the WHS for understanding prehistory and its key relevance to the later prehistoric demise of the beliefs that drove the creation of the Neolithic and Bronze Age landscape – and despite the scheduled area actually containing a Bronze Age barrow in a significant position. Considering the likely state of open vegetation for the Camp and the later effects of inclusion within a designed landscape planning and its overgrown state; trees and vegetation in this case is obviously key to working out what contributes or detracts from the setting of the Camp in its various guises.

The Amesbury Abbey Park RPG is not seen by the Applicant as being relevant to WHS OUV and yet when its original full extent is considered, it is the prime area of the WHS to exhibit the eighteenth and early nineteenth century approach to how prehistoric monuments might be incorporated into a heightened appreciation of the landscape. This was achieved through carefully designed planting and creation of walks and drives intended to enable and encourage people to explore and appreciate prehistoric monuments in their surroundings. It is thus a quintessential example of how OUV 7 – *The influence of the remains of Neolithic and Bronze Age funerary and ceremonial monuments and their landscape settings on architects, artists, historians, archaeologists and others* – applies in the landscape, not just on paper or in art.

In summary, the key points for **Blickmead** are:

Highly significant and substantial early Mesolithic waterlogged activity area using a spring at the foot of a short valley running E off

designation process. The elements that survive of the earlier larger estate are considered within the Historic Landscape Character Assessment [APP-215].

The Applicant refutes that the effect of the Scheme would be ‘substantially widening’ the cutting at the north end of Vespasian’s Camp. Fourteen metres of the existing carriageway will be returned to chalk grassland and 14m of land to the north will be taken for the realigned cutting – it will therefore be the same footprint as existing. The Applicant also refutes that King Barrow Ridge will be directly physically impacted as it lies 620m west of the Eastern Portal. The Applicant also notes that the area described is not part of the existing Amesbury Abbey RPG.

The Applicant does not agree with the CBA’s overall conclusion with respect to Amesbury Abbey RPG that the Scheme would “exacerbate the significant harm already done by the existing A303”. The Setting Assessment states “there would be an impact on the northern boundary and part of the eastern boundary of Amesbury Abbey RPG as a result of the Scheme. However, that impact would not extend far into the RPG due to screening provided by the dense vegetation that covers the majority of the northern part of the asset.” [APP-218, para. 3.4.10].

There would be no visual impact on the most significant parts of the park at its centre with the grade I listed Amesbury Abbey [6054] and grade II listed Ornamental Vase [6058], or to the centre west on and adjacent to the River Avon where there are three grade II* listed assets, Gay’s Cave and Diamond [6055], the Chinese Temple [6056], and Baluster Bridge and Gate Piers [6057].

The Setting Assessment [APP-218] concludes that there would not be a significant adverse effect to the RPG either in terms of construction permanent impacts or in terms of the Scheme’s operation, due to it being a minor impact upon a High value asset resulting in a Slight Adverse effect.

The Applicant does not agree that we have ‘misunderstood the contributions that these assets make to the WHS OUV.’ Or that there is ‘cumulative harm’ from the construction of the Scheme on these assets.

the Avon floodplain at the head of an isthmus of dry ground in a substantial loop in the course of the river. Probable recognition/use as sacred spring in later periods.

Vegetated surroundings of small clearing in area of wet woodland of native trees highly appropriate (though cleared area may well be significantly too small; would have been quiet and very dark at night) – *immediately adjacent existing A303 is highly intrusive alien landform: tarmac road, barriers, signage etc., EFFECT of scheme will exacerbate this with additional structures (drainage, signage, flyover, E tunnel approach) at light distance*

Inter-visibility with adjacent areas of activity is unlikely to have been available in pre-clearance landscape so relative lack of it increases significance of aural environment, night sky and physical proximity to other areas of activity and potentially daily interaction and access to natural resources - *immediately adjacent existing A303 is highly intrusive because of noise; some traffic and lights visible through trees; traffic movement; lack of tranquillity; EFFECT of scheme will exacerbate this*

Floodplain location and access up and down river valley is a key characteristic – *existing A303 severs this; EFFECT of scheme would exacerbate this severance and loss of character with even larger road foot print within the Avon floodplain at Countess Roundabout*

High riverside water table resulting in waterlogged preservation of deposits with potential to inform evidence of wider setting is important – *existing A303 may have disturbed/destroyed deposits; EFFECT of scheme may exacerbate this beyond any effects at Blickmead itself*

Topographical setting (end of former dry valley and ridge and access to differing resources on chalkland) also key to character – *existing cutting for A303 substantially alters natural topography; EFFECT of scheme would significantly exacerbate this close by (ie within a few*

minutes walk) through cutting, retaining walls and tunnel mouth etc

Diachronic relationships and different characteristics of other Mesolithic activity in the overall vicinity is important to appreciate Blickmead within context of the wider development of Mesolithic activity in the area, and potential influence on later developments as a special location including its probable use as a sacred spring as suggested by deposition of multi-period prehistoric and later objects – *The existing A303 may have disturbed/ destroyed apart of site or adjacent sites and possibly other sites nearby where Mesolithic material is in close proximity; other unusual key elements known to exist in WHS; EFFECT of scheme likely to impact on known flint scatter sites, exacerbating loss*

OVERALL: the scheme would tend to exacerbate the significant harm already done by the existing A303 in the last 50 years including its highly intrusive and alien physical form and aural presence; substantial impact on local topography; severance effects for the valley floor resources that supported Blickmead's existence and (potentially) other areas of activity.

In summary, the key points for **Vespasian's Camp** are:

Major late prehistoric hillfort occupying spur of high ground that ends as an isthmus in a tight bend of the R Avon (one of several hillforts along the Avon and its tributaries which is the approximate location of a possible tribal boundary in late prehistory): prominent visible defensible position and affording good outward views;

The location of the fort on a natural spur was originally cut off at N end by a large defensive ditch (obscured by 18th century landscaping but still present) where there was an entrance from the N. *The cutting for the existing A303 severs this spur and substantially altered the natural landform obscuring the relationship of the N end of the hillfort and approaches to its N entrance in relation to the natural topography. The EFFECT of scheme would exacerbate this severance and loss of character in relation to natural*

topography with substantial further cutting into the ridge to the W and added embankment and structure in the Avon floodplain at Countess Roundabout

Woodland covering the hillfort and surroundings is in part due to incorporation into RPG landscaping, also reflected in paths having been incorporated into the earthworks – which embody 18th and 19th century recognition and celebration of prehistory in the landscape, but has become overgrown so neither the original openness required for the hillfort nor the effect of 18th century landscaping can be easily understood and appreciated. As well as hindering views out, the woodland now obscures the hillfort and its prominence and defensive function in the landscape (originally with white chalk ramparts). Arable fields in the wider surroundings reflect a broad landuse more likely to be in keeping with late prehistoric landscape for which there is evidence of fields. *The immediately adjacent existing A303 adds an additional, more alien strip of landform/cover: tarmac road, barriers, signage etc. EFFECT of scheme would exacerbate this with additional structures (drainage, signage, flyover, E tunnel approach)*

Inter-visibility with surroundings is likely to have been a key characteristic of the hillfort, as would an aural environment dominated by natural sounds. *But for the detracting presence of overgrown woodland, the immediately adjacent existing A303 would be highly intrusive visually and is still significantly intrusive because of noise; some traffic and lights visible through trees; traffic movement; lack of tranquillity; EFFECT of scheme would be to exacerbate these effects*

Diachronic relationships and different characteristics of the site include pre-existing Bronze Age barrows; Bronze Age and later field systems; periods of use through later prehistory (potentially spanning period up to emergence of major tribal entities); relationship to Blick Mead sacred spring. *The effects of the existing*

A303 on other multi-period sites nearby has obscured their inter-relationships and multiperiod evolution of human activity within a highly distinctive but now diminished topographical setting; EFFECT of scheme would further intrude on and obscure such inter-relationships through further substantial changes to topography and added intrusiveness

OVERALL: the scheme would tend to exacerbate the significant harm already done by the existing A303 in the last 50 years including its highly intrusive and alien physical form and aural presence, and its substantial impact on local topography.

In summary, the key points for **Amesbury Abbey Park RPG** are:

Amesbury Abbey Park RPG is graded II*. Of the 1600 registered parks in England it is amongst the 27% designated as being “*of more than special interest and graded II**”; 9% are designated as being “*of exceptional interest and are classified as Grade I*”

As designated the Amesbury Abbey Park RPG is part of a much more extensive area of former parkland that the ES has not fully identified or assessed. Historic England’s *King Barrow Ridge* report (Research Department Report Series No. 83-2011) explains that *The acquisition of [the West Amesbury and Countess] manors in the mid-18th century allowed the [3rd] Duke [of Queensbury] to extend Amesbury Park to include the New King Barrows: they were probably planted with Scots Firs around this time. The full extent of the Park was short-lived: after the Duke’s death in 1778 land was dis-parked and returned to arable..... By 1846 beeches and yews had been added to form plantations around the New King Barrows and the southernmost two of the Old King Barrows, with a ‘Keeper’s house.’The pattern of trees east of the Ridge are popularly known as the ‘Battle of the Nile’ clumps, however, these too were probably planted within the Park by 1778, twenty years before the great naval battle took place. 72% of the original 26 clumps survive or have been restored. There is nonetheless a very strong tradition*

that they were planted at the end of the 18th century at the behest of Emma Hamilton to commemorate the British and French battle formations at the height of Nelson's victory in the battle of the Nile (1798), each named after a ship seems likely to be an embellishment of an idea to name the clumps after the ships in commemoration of the battle.

The RPG designation description includes the following: *The setting of the site includes the town of Amesbury extending to its south-east and the River Avon and its banks to the north-east. To the north and west of the site lie the Nile Clumps, tree clumps planted here by the late C18 (Andrews and Drury, 1773), some of which have recently (2002) been replanted (Mott MacDonald 2002). The course of The Avenue, the archaeological remains of a prehistoric road that leads to Stonehenge, runs through the area of the Nile Clumps. Stonehenge is situated c 1.5km west from Amesbury Abbey and was owned by the Antrobus family until 1915. The area north and west of the site (not included in the area registered here) has been farmed since the early C19 and is divorced from the park by the A303, introduced in the late 1960s. This should also include the King Barrow plantations.*

In terms of topography, the Park at its maximum 18th century extent stretched from the floor of the Avon Valley to the crest of King Barrow Ridge, taking in the spur on which Vespasian's Camp and barrow are located. The landscaping of the Camp (both with tree planting and modification of the earthworks for designed walks) and the planting of the barrows on King Barrow Ridge and a few as locations for the Nile Clumps suggests that at its full extent the park was intended to facilitate walks that could incorporate its full east west extent allowing contemplation of prehistory on the way culmination in a view of Stonehenge. *The original A303 resulted in a major cutting through the ridge at the E end of the Camp within the original parkland, representing a major change in its topography, severing the natural route by which the full east- west extent of the park would*

have been traversed using the N entrance of the hillfort (which was modified as part of the parkland landscaping and creation of walks). The EFFECT of the proposed scheme would be to exacerbate this intrusion, substantially widening the cutting at the N end of Vespasian's Camp and deepening and extending it westwards into the side of the King Barrow Ridge, making it even more difficult to appreciate the physical topographic context of the original design and what that says about 18th century attitudes to prehistory in the landscape.

In terms of general vegetation and landuse, although the central section incorporating Vespasian's Camp is overgrown, most of the key tree planting is still intact (or in some cases restored). The arable landuse amongst the clumps is a feature of how the parkland evolved in the nineteenth century. *The impact of present A303 was significant, physically severing the original parkland (which is partly why the full extent of the parkland was not included) and introducing an alien mixture of tarmac and roadside vegetation in a strip right across the former park. The EFFECT of the proposed scheme would be to exacerbate this intrusion involving significant additional land-take on a different alignment and introduction of major structures in terms of the tunnel portal and cutting retaining walls*

In terms of designed plantations, the Nile clumps are unusual both being early examples of such planting and because of their having become, by tradition, a significant commemoration of a major battle that is still recognised today. By the mid nineteenth century they were retained as tree clumps within arable fields. *The severance caused by the present A303 seems to have been a factor indirectly leading to the loss of some 'ships', but most were retained as clumps within arable fields with the A303 occupying a fairly narrow at-grade strip. The EFFECT of the proposed realignment would incorporate two of the Nile Clumps within the scheme boundary on the edge of a substantial cutting; the introduction of 'chalk grassland and intermittent scrub' planting over the tunnel portal would contribute to*

the substantial additional change of historic character and land use.

In terms of the overall atmosphere and tranquillity of the Park, it would originally have been tranquil countryside disturbed by little other than farming activity which was part-and-parcel of the countryside, but for the western boundary where horse-drawn and later motorised traffic using the old main road would have been somewhat intrusive. *The impact of the present A303 was to introduce what is now a major source of new intrusion on the formerly peaceful central part of the Park (especially at the N entrance of Vespasian's Camp while somewhat reducing the far less significant intrusion along its western boundary. While visually from within the RPG boundary this is less than it might be if trees were cleared to reveal the position of Vespasian's Camp in the landscape, it is extremely apparent within the former extent of the Park that this aspect of its setting. Audibly the A303 cuts through the centre of the former parkland and is present at King Barrow Ridge. The EFFECT of the proposed scheme would be to exacerbate visual and noise intrusion, not least because of the additional hard structures in the retained cutting and tunnel portal, and even if only glimpsed through trees, night and day headlights emerging from the tunnel. This would not be fully offset by some reduction in intrusion at the King Barrow Ridge plantations. Although the view towards Stonehenge from those plantations would be substantially restored (but for visitor activity) the kinetic experience of that view being the culmination of an exploration of prehistory through the landscape would have finally been physically destroyed, whereas now, if the A303 were replaced by a scheme avoiding the WHS altogether (such as an optimised F010) there would in principle be an opportunity (with landowners' support) to fully restore the full original 18th century design concept.*

OVERALL: the scheme would tend to exacerbate the significant harm already done by the existing A303 in the last 50 years including its highly intrusive and alien physical form and aural presence, and

	<p>its substantial impact on local topography and exacerbating the severance caused by the A303.</p> <p>Taking all three assets together, the Applicant has misunderstood the contributions that these assets make to the WHS OUV. The cumulative harm is serious. This can easily be judged by imagining how the settings of these assets might be physically restored if the A303 were to be removed from the WHS altogether (as might be achieved with an optimised surface route to the south such as F010) with reinstatement of the natural topography, woodland management for Vespasian's Camp and re-establishment of missing Nile Clumps.'</p>	
2.1.8	<p>CH.2.9</p> <p>In general these expanded sections are helpful, in principle painting a broader picture of issues relevant to archaeological work in the WHS; in many respects they serve to emphasise the likelihood of unexpected discoveries and the limitations of what is known of the total archaeological content of the scheme. But because the uncertainties of the surveys and evaluations have not been analysed properly, the real archaeological potential of the scheme has not been clarified.</p> <p>By adopting a narrow, site-by-site damage-limitation form of mitigation based on what is known so far, the Research Questions identified as being relevant are too limited and too often dismissed without good grounds as having little potential. A good example of research questions being closed down, not opened up by the approach adopted is the inconsistency between the text and Appendix D as to whether the Mesolithic to Neolithic transition could be explored. Another is the Applicant's dismissal of CBA's observation in oral evidence that the small hengiform or segmented ring ditch SW of the junction (and perhaps other monuments on that alignment) might be part of the Winterbourne Crossroads linear cemetery alignment (or at least have significant intended relationships). Instead of treating this as a valid question,</p>	<p>We acknowledge the CBA's positive comments that the expanded sections of the Archaeological Research Strategy, including the Research Questions are helpful.</p> <p>We also note that the CBA made various submissions with respect to the Research Agenda at ISH8 and the Applicant's response in that respect is set out in the written summary of oral submissions made at that hearing, submitted at Deadline 8, in particular Agenda Item 5.1(ii). The response set out there is also relevant to these submissions from CBA.</p> <p>It is worth making clear at the outset, that the Archaeological Research Agenda (ARA) set out at section 4 of the DAMS considers the archaeological evidence identified during the evaluation programme and known from other surveys in the area, against the themes and research questions set out in relevant published research frameworks. These include, but are not limited to, the Stonehenge and Avebury Archaeological Research Framework (SAARF), the South West Archaeological Research Framework (SWARF), and selected period-specific research agendas. As part of the DAMS, the ARA has been developed in consultation with HMAG and the Scientific Committee, who were invited to contribute research themes and questions, and those identified themes and questions will inform the final scope of work in each area through SSWSIs to be developed in consultation with heritage stakeholders and approved by Wiltshire Council (in consultation with Historic England) (as provided for in the DAMS). For this reason, the Applicant</p>

checking it against other examples of multi-period linear cemeteries in the Stonehenge and Avebury WHS, the Wessex Region and beyond, it has been dismissed on purely procedural grounds. See below for further comments.

The approach should be the other way round: rather than being *shaped by* the current uncertainties and limitations of what is known to date, the approach, given the location, scale and extent of the scheme, should be to consider what opportunities exist to *overcome* the limitations and address bigger (and different) questions.

Such an approach would better meet the unprecedented challenge that would be set if the scheme were to be approved, including being more responsive to the sort of issues identified by the ExA. Such issues exemplify the open challenge posed by a research-led approach as compared with the much narrower damage-limitation exercise adopted by the Applicant: if these – and many other similarly broad issues – are to be addressed, the Strategy needs to consider the following questions for each major research issue

- What sort of evidence is capable of shedding light on the issue and needed to address it?
- Where is that evidence likely to be found in respect of different types of deposit from ploughzone to natural hollows, tree hollows, colluvial and alluvial deposits, waterlogged deposits and fills of a wide range of anthropogenic features?
- How much of that evidence is required to make it possible to draw reasonably valid conclusions?
- What methods of survey, topsoil stripping, subsoil cleaning, test pits, auguring etc are needed to ensure that all such burial environments have been identified and their extent within the affected areas mapped?
- What methods of investigation recovery techniques and sampling methods need to be applied to recover all the

disagrees with the submission from CBA that its approach is not appropriately research-led.

The Applicant disagrees that unexpected finds are likely and would emphasise to the Examining Authority the comprehensive nature of the archaeological evaluations undertaken to support the application.

The Applicant does not agree that the research objectives are narrow or driven by a site-by-site damage limitation approach – see the revised DAMS as submitted at deadline 7 [REP7-019; Section 4] which includes the Mesolithic-Neolithic transition.

Regarding the scheduled bowl barrow 250m south west of Longbarrow crossroads, west of A360 (NHLE 1011045), the Applicant has previously responded to this in response 13.1.4 [REP4-036]. This asset is considered as part of the AG13 Diamond Group in the Setting Assessment [APP-218] and in the HIA [APP-195]. It lies off the ridge line and is sited to the south of the dry valley that divides it and the rest of the AG13 Diamond Group from the AG12 Winterbourne Stoke Crossroads Barrow Group to the north. It has not been dismissed on ‘procedural grounds’ but has been the subject of discussions with HMAG and has been verified by walkover survey of the landscape.

The Applicant is following a research-led approach, based on current research frameworks and agendas, the archaeological evaluation results and as discussed and agreed with Wiltshire Council, Historic England and HMAG.

As stated above the Applicant does not agree that Section 4 of the draft DAMS as submitted at Deadline 7 [REP7-019] is a ‘narrow damage-limitation exercise’ but is research-led as agreed with Wiltshire Council, Historic England and HMAG.

The DAMS has been revised at Deadline 7 [REP7-019] including updates to the ploughzone artefact collection strategy (paras. 6.3.11 – 6.3.18); artefact recovery strategy (paras. 6.3.28 – 6.3.35 – including bulk sieving for the recovery of small items such as Mesolithic microliths) and the overall excavation sampling strategy (paras 6.3.36 – 6.3.52). The DAMS sets out the *minimum* sampling requirements, noting that these may be varied to suit the research value of the remains, subject to consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG and the TPA: the SSWSI will identify the appropriate sample for excavation, but the strategy

types of evidence required to answer all relevant research questions?

- What levels of investigation and what detailed sampling strategies are needed within those methods and techniques to ensure recovery of enough evidence to create a robust set of data to support the analyses needed to answer all relevant questions?
- In particular, what levels of investigation, general sampling and recovery methods are required to ensure that critical but rare pieces of the evidence jigsaw are not missed?

As Mr Lambrick explained in oral evidence (citing the rarity but importance of Mesolithic lithics; exotic stone objects in the ploughzone, or burials occurring in later prehistoric - though also later - boundary ditches), the last question above is in many ways the most critical. Similar considerations apply to ensuring features such as cremations, burials and structural elements like postholes are not missed.

This emphasises how there are some research questions that can only be addressed by very thorough recovery of lithics, ceramics, animal bones or human remains in sufficient quantity for a sufficient chronological time-span to demonstrate differences in human activity through time.

Because the extrapolations from survey and evaluation evidence and past discoveries have not been done, the basis for judging how far such questions might be addressed is not firm.

Nevertheless, the additional text presented in the review of research is a useful beginning. But it is let down by the current damage-limitation approach and application of standard sampling rates more designed to characterise than fully explore the evidence available. The result will tend to close down many avenues of research that might otherwise be explored.

Please see below; the provisions for monitoring should be subject to

responds reflexively to the significance of the archaeological remains as it is excavated on site and varies the sampling accordingly through the consultation process. The results and application of this approach will be reviewed as part of the iterative application of the DAMS, with the potential to revise the sample size upward or downward in the light of emerging results.

The Applicant disagrees with the CBA's comment that 'the extrapolations from survey and evaluation evidence and past discoveries'; has not been done – see draft DAMS submitted at Deadline 7 [REP7-019; Sections 3 and 4]. Regarding the approach and the sampling methods – the Applicant has responded to these above.

The Applicant notes CBA's comment on approvals. This is addressed within the revised DAMS as submitted at Deadline 7 [REP7-019; paras. 1.3.2 – 1.3.5 regarding Advisory Groups and Monitoring of Investigations; Section 8.1, Communications Strategy and Appendix A]. Highways England has updated Section 8 of the draft DAMS [REP7-019, Section 8, Communications, Monitoring, Sign-off of Archaeological Works and Approval of Documents by Wiltshire Council] to provide further detail of the proposed approval of SWSIs, Heritage Management Plans and Method Statements. Regarding the signing-off of archaeological works, the revised DAMS, as submitted at Deadline 7, includes updated text on the validation of completion statements by Wiltshire Council, (in consultation with Historic England), to confirm that the relevant works have been completed in compliance with the relevant Site Specific Written Scheme(s) of Investigation [REP7-019, para. 8.4.2]. This issue was also discussed at Issue Specific Hearing 8 on 21 August 2019, as recorded in the Applicant's written summary (submitted at Deadline 8) in relation to Agenda Item 5.2(ii).

The Applicant has responded above in paragraph 2.1.4 to the CBA's comment regarding retaining topsoil for reuse within the WHS. The OEMP [AS-085, PW-GEO3; MW-GEO7] provides for a detailed Soils Management Strategy. This shall incorporate the soils handling measures outlined within the DAMS, identify locations where archaeological in-situ preservation is required and consider areas to be returned to agricultural use. The Outline Soils Management Strategy set out in the OEMP [AS-085, Annex A.3 – Outline Soils Management Strategy (SMS)] sets out the requirements of the detailed Soil Resource Plan and Soils Handling Strategy, that will together

approval by Historic England and Wiltshire County Council

The provision for retaining topsoil for reuse within the WHS makes no sense archaeologically unless it were to be replaced in sufficient accuracy where it came from to retain the integrity of archaeological information – we do not believe this is possible. The WHS is a management construct not an archaeological asset in its own right that would benefit in the sort of way that (for example) a bag of finds from a specific stratigraphic deposit has a contextual integrity. As noted elsewhere, the boundary of the WHS is not the boundary of OUV. The provision has no clear archaeological logic

The important provision is to record where topsoil is moved from and to so that when its archaeological content is found in a new location there is a record that it does not represent an authentic record of archaeological activity on that site. All topsoil from the scheme is likely to contain archaeological objects (as indicated by the tiny sample explored in the evaluation fieldwork). There is thus no need to judge the archaeological content of the topsoil: a general systematic means of mapping all topsoil movement from one area to another is required (and we assume that is what is intended).

[iv] This provision is desirable to cover the likely need to enhance records. Two circumstances arise:

- Covering gaps in coverage
- Resurveying areas using other techniques to clarify (IF possible) the archaeological content to provide better information for planning excavations
- Resurveying areas to be buried under topsoil to ensure that as full a non-destructive

form part of the SMS to be prepared by the Contractor, depending on the stage of the Scheme at which the soil resource in a land parcel will be disturbed.

With regard to unexpected discoveries and ‘extrapolating existing knowledge to what may potentially be found’, provisions are made in the draft DAMS, submitted at Deadline 7 [REP7-019; Appendix D] for each Action Area and the proposed archaeological methods to be utilised in each area. These detail the relevant archaeological baseline, survey results and rationale for mitigation measures for each of the identified mitigation areas. For those areas where archaeological investigation and recording is proposed, relevant research themes and period-based questions are indicated, as identified in consultation with specialists, within the Stonehenge and Avebury Archaeological Research Framework (SAARF)

Agenda and Research Strategy (Leivers and Powell, 2016), the South West Archaeological Research Framework (SWARF) and relevant period or specialist agendas.

The procedure for dealing properly with any unexpected finds during the construction process will be agreed and recorded in the Construction Environment Management Plan prepared by the Main Works Contractor for the construction stage. The requirements for Site Specific Written Schemes of Investigation and related approvals in respect of unexpected finds are set out in the DAMS [REP7-019, para. 6.1.18 – 6.1.20]; the requirements for Heritage Management Plans as set in PW-CH1 of the OEMP (APP-187) will address procedures for unexpected archaeological discoveries. A notification procedure will be developed by the Technical Partner’s Archaeologist detailing procedures to be followed in the event of an unexpected discovery requiring further investigation (that is, a significant find that was not predicted as a result of the evaluation). [REP7-019, paragraph 6.5.5].

The Applicant has responded above in paragraph 2.1.4 to the CBA’s comment regarding accessibility of areas for future survey and ‘sterilising’ archaeology.

In terms of the comment at [v], the Applicant has refined the Archaeological Clerk of Works role, who will now be part of the Technical Partner’s (Employers Agent) Team. The CBA’s comment regarding the need to

evidence base as possible is made before that opportunity is lost to future investigators (please see comments in response to Q.CH.2.5 about 'sterilising' archaeology)

[v] The details of the role need to be better defined: detailed archaeological logistics should be the purview of the archaeological contractor; oversight of the programme of work and co-ordination to ensure archaeological works are completed thoroughly and in a timely manner; including instructions for the contractor to deploy additional resources should not be down to the archaeological contractor alone.

Consideration needs to be given to what has worked well (ie has resulted in high level of effective archaeological response) in other transport infrastructure schemes

[vi] YES This is vital to avoid conflicts of interest (cf other comments on approach of limiting rather than maximising research opportunities and quality of recovery of information).

But see also below, regarding issues of interruptions and delays. A co-ordinated approach is required to overall risk management, including the whole procurement and contracting philosophy, structure and culture.

Once again, it is vital to avoid conflicts of interest. The specific issues noted in 6.1.20 are amongst the least significant potential problems in terms of interruptions and delays. Delays through snow and prolonged heavy frost resulting in frozen ground conditions and potentially damaging objects can present significantly more serious weather problems than rain, but even so these risks should be allowed for in standard project programming to ensure sufficient time allocations are set according to different times of year, also ensuring that the potential need to deploy practical mitigation measures (shelters, sheeting to cover work areas etc) is allowed for.

Far more significant are the potential interruptions and delays

consider what has worked well on other Schemes is acknowledged. The Applicant states that this has underpinned the development of the draft DAMS.

In terms of the comment at [vi], the Applicant notes CBA's comment on approvals with respect to unexpected finds. This is addressed within the revised DAMS as submitted at Deadline 7 [REP7-019; paragraph 6.1.18], which provides that unexpected finds would be dealt with through a further SSWSI to be approved by Wiltshire Council, in consultation with Historic England (to the extent the works the subject of the approval would ordinarily trigger the need for scheduled monument consent), where a further or amended SSWSI is required following consultation with HMAG / WCAS about the unexpected find. The requirement for a site consultation meeting to consider the significance of the find is intended to agree the appropriate course of action and determine whether the existing SSWSI adequately provides for this.

The Applicant agrees with the CBA's comment that 'a co-ordinated approach is required to overall risk management, including the whole procurement and contracting philosophy, structure and culture' is required and this is what is being developed by the Applicant.

The Applicant notes the CBA's comments on avoiding conflicts of interest, project programming and wet weather provision. As regards conflicts of interest, DAMS Section 8, Communications, Monitoring, Sign-off of Archaeological Works and Approval of Documents by Wiltshire Council, sets out the modalities involved in consultation, monitoring, signoff, approvals and appeals related to archaeological works. With regard to project programming, an indicative timeline for delivery of the work set out in the DAMS by the Preliminary Works and Main Works Archaeological Contractors is included in the DAMS at Appendix A.10 [REP7-019]. Interruptions and delays, including reference to episodes of heavy and persistent rain or prolonged wet weather, are addressed in the DAMS paragraph [REP7-019, paragraph 6.1.21]. The Applicant also responded to submissions in this respect at ISH8 and the Applicant's response is recorded in its written summary submitted at Deadline 8, in relation to Agenda Item 5.2(ii).

The Applicant does not agree with the CBA's comments regarding the likelihood of 'unexpected finds' or that the Applicant has 'underestimated

arising from unexpected discoveries – or in this case miscalculated/underestimated potential arising in this case by the draft DAMS focussing all the effort on what is known without having attempted to extrapolate existing knowledge to what may potentially be found). This issue is not recognised in paragraph 6.1.17. Nor is there any assessment of which areas would be on the general project critical path, and therefore especially sensitive to delay.

As presented, sections 5 and 6 of the draft DAMS do not present a demonstrable basis for mutually shared proactive management to ensure maximum collaboration in achieving archaeological objectives while minimising unnecessary risks to project programme and adopting creative means of mitigating problems that do arrive. The entire emphasis is on liaison with external bodies rather than also recognising the vital need for fully proactive mutually supportive internal partnership working across the project.

Considerations of best practice need to be applied, developed from past experience at two levels:

- Overall procurement and contracting philosophy
- Examples where successful archaeological outcomes were achieved with minimal disruption, despite challenges to programme.

Procurement and Contracting

In terms of UK infrastructure, British Airways' approach to the procurement contracting and management of all the specialist contracting skills required to deliver Terminal 5 as a world class development within time and budget has been widely recognised (see for example National Audit Office <https://www.nao.org.uk/defence/vfm/wp-content/uploads/sites/16/2013/02/BAAPICTerminal5.pdf> for a summary of the approach). It was based on an extremely robust and open approach deeply rooted in a basis of co-operation in which all players seek solutions on a partnership basis harnessing

potential'. The application is supported by a comprehensive archaeological evaluation. The Applicant has programmed the majority of the archaeological mitigation works to take place during the Preliminary Works phase to avoid conflict with critical paths and pinch points in the Main Works phase of the construction programme. Each SSWSI will set out the timing and order of the investigative works and will include details of how the archaeological programme will interact with other construction activities, and the parties undertaking them, at the Preliminary Works or Main Works stages. Each SSWSI will include a programme for the archaeological work that will be referenced against key milestones/events in the overall design and construction programme [REP7-019, paragraph 6.1.15]. Should the modification of works specifications be required during the investigations to enable detailed recording to take place, and to allow adequate time within the construction programme in the event of important discoveries, a revised SSWSI will be prepared by the Archaeological Contractor [REP7-019, paragraph 6.5.4]. The Applicant also responded to submissions in this respect at ISH8 and the Applicant's response is recorded in its written summary submitted at Deadline 8, in relation to Agenda Item 5.1(iii).

The Applicant disagrees that Sections 5 and 6 of the draft DAMS 'do not present a demonstrable basis for mutually shared proactive management to ensure maximum collaboration'. The Applicant has worked tirelessly with regards to collaborating and partnering with heritage partners throughout the outline design phase. The archaeological mitigation works will be undertaken as 'Advanced Works', during the Preliminary Works phase, in order to minimise risk and maximise the opportunities for collaborative partnership working to continue in a mutually supportive manner.

The Applicant notes the CBA's comment regarding best practice regarding procurement and successful archaeological outcomes. These aspects have been a part of the Applicant's philosophy for some time in its development of the delivery programme for the archaeological mitigation works (as set out in the draft DAMS) and its approach to procurement.

The Applicant agrees that the archaeological mitigation works need to be a part of the procurement, contract and risk management strategy.

In terms of the comments on unexpected discoveries and the overall conclusion, in order to de-risk the Main Works construction programme, the

a very strong collaborative risk management strategy embracing a core philosophy of continuous improvement in which quality of outcomes at every level was the fundamental, project-wide objective. It was based on incentivising quality and effective performance, not disincentivising contractors with undue responsibilities for risk or penalising delays or cutting corners to make up time. This well-known case study included a major archaeological investigation of an extremely extensive predominantly prehistoric archaeological landscape. The archaeology like everything else was part-and-parcel of the core procurement, contract and risk management strategy

Highways England has not yet fully adopted such a philosophy (which is as much or more a cultural challenge as a procedural or managerial issue). A report jointly commissioned, overseen and funded by Highways England and the Office of Rail and Road, reviewed the situation against standards set by the Chartered Institute for Procurement and Supply. This showed that significant improvements were then needed in several areas (*Highways England Procurement Capability Review* of 2017,

https://orr.gov.uk/data/assets/pdf_file/0015/26322/highways-england-procurement-and-contract-management-capability-2017.pdf). Appendix 5 of the report details several top priority areas where a more pro-active, more collaborative, more innovative and more quality-focussed rather than damage-limitation based approach would be beneficial. A significant number of these reflect areas relevant to how the inherent risks presented by archaeology need to be managed.

Unexpected discoveries

Examples of unexpected discoveries of major significance on road schemes and other infrastructure projects are so common that in general they are to be expected. What they are; where they occur; how time-consuming and intricate their investigation and recording prove to be; and most critically, how they relate to the construction programme are the big risks. Examples include

Applicant is undertaking the vast majority of the archaeological mitigation works that are required in the Preliminary Works phase, as Advanced Works – to take them out of the Main Works construction phase. The risk of encountering unexpected discoveries has been minimised as far as possible through the extensive and comprehensive archaeological evaluation programme. The Applicant also responded to submissions in this respect at ISH8 and the Applicant's response is recorded in its written summary submitted at deadline 8, in relation to Agenda Item 5.1(iii).

Regarding the deliverability of preservation in situ requirements for compounds and haul roads, it is the Applicant's view that preservation in situ is feasible and deliverable.

With regards to the CBA's comment that 'the same sampling strategy should be adopted as for pure research projects', the Applicant has responded to this in previous submissions (see items 18.2.19 and 34.1.17 [REP5-003]).

In response to CBA's comments at [ix] in relation to ploughzone sampling, the DAMS has been revised at Deadline 7 [REP7-019] including updates to the ploughzone artefact collection strategy (paragraphs 6.3.11 – 6.3.18); artefact recovery strategy (paragraphs 6.3.28 – 6.3.35 – including bulk sieving for the recovery of small items such as Mesolithic microliths) and excavation sampling strategy (paragraphs 6.3.36 – 6.3.52). As noted in ISH8 (and recorded in the Applicant's written summary submitted at deadline 8, in relation to Agenda Item 5.4), the Deadline 7 DAMS proposes at paragraph 6.3.14 that a representative sample will be identified for further ploughzone sampling, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. In some areas, a sample of up to 100% of the artefact content of the ploughsoil may be necessary, combined with a systematic sample to capture background distributions and transitional areas. The strategy will adopt a reflexive approach such that the sample size may be increased locally in response to the results of the systematic sampling.

Tree hollows were encountered across all evaluation areas, with some local variations in density which may relate to historic ploughing, topography and drainage, or possibly to specific prehistoric land use. The Applicant understands that tree hollows, in some instances, may be complex archaeologically.

cases where such discoveries were relatively easily accommodated within programmes and cases where adjustments were needed; they also include cases that were or were not exacerbated by problematic winter conditions. There have been several unexpected discoveries on the A14 over the last year or more. Some older examples include

- A1(M): Iron Age chariot burial discovered when excavator uncovered a stone slab covering the grave
- HS1: A large Roman cemetery on the critical path for preliminary works to divert electricity pylons (winter requiring shelter, heaters and light, extended working to reduce delay)
- A417/A419 improvement scheme: a substantial Roman settlement at the N end of the scheme on the critical path for site clearance, requiring re-organisation of programme for lengthy excavation (starting in winter)
- HS1 a post-medieval cemetery at St Pancras (identified in ES and archaeological programme) investigation pre-empted by rapid (non-archaeological) clearance by contractor to make up time for delays caused elsewhere. Only stopped when CBA and other NGOs intervened to publicise the case, highlighting issues and helping Historic England to require contractor to revert to the agreed archaeological approach

Overall

Currently the draft DAMS provides only a few comments on low-level risk management, not a proactive high-level analysis showing where archaeological actions relate to the overall broad-brush critical path for delivery of the scheme. An obvious example is the unresolved risk that a large-scale excavation might be required for the main construction site and haul roads, or the parameters of uncertainty in respect of the actual archaeological content of areas on the critical path for the Preliminary Works and Main Works

The Applicant has updated its approach to sampling tree hollows in the updated DAMS which will be submitted at Deadline 8. The comprehensive mapping and investigation of a representative sample of tree throws for artefactual, ecofactual and palaeoenvironmental evidence is proposed, comprising:

- mapping and investigation of all possible tree hollows encountered in mitigation areas (i.e. interpretation);
- archaeological excavation of a sample of confirmed tree hollows, identified in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG; and
- recovery of a sample of 150 litres of the fill of excavated tree hollows to be sieved for small artefact recovery. If sieving produces significant quantities of settlement debris, particularly hazelnut shell, then flotation samples will also be processed, in line with the iterative approach taken.

The following factors, informed by the results from the evaluation stage and in general in this landscape, will be considered in identifying a representative sample for excavation, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG:

- Proximity and location in relation to lithic scatters;
- Proximity and location in relation to monuments;
- Proximity and location in relation to landform;
- Proximity and location in relation to known archaeological remains e.g. tree throws near identified pits.

A representative sample (but no less than 12.5% of the confirmed tree hollows) will be identified for excavation as above. The strategy will adopt a reflexive approach such that the sample size may be revised in response to the results of the systematic sampling, in order to ensure the sample remains representative and areas of high potential for meaningful interpretation are maximised. The agreement of the tree hollow sample excavation requirements will be sought through the consultation meetings.

programmes.

[viii] Not adequate – See comments above (Q.CH.2.5) about sampling relative to loss of archaeology. The assemblage driven approach proposed will not adequately ensure recovery of small clusters, or rare but highly significant objects (including exotic lithic materials early metalwork etc) or a full picture of Mesolithic activity for which enhanced sieving is needed. The limitations imposed by the approach would deny proper analysis of clustering by skewing results to areas of recurrent activity over longer periods, not the overall pattern at any one time or what happens between foci of monuments or domestic activity. It would substantially hinder systematic correlation of how artefacts in the ploughzone and the activities they represent (or suggest was not an area of activity) relates to subsoil features.

For the World Heritage site and its surroundings, the same sampling strategy should be adopted as for pure research projects – as would be applied to any of these areas if they were to remain available for research into future generations. This MORE not less important because the scale of loss is far higher and far less capable of being replicated on future occasions.

[ix] Not adequate – see comments above re loss of archaeology. In earlier submissions and oral evidence we have referred to the substantial potential importance of these features, but this has been correctly acknowledged by HE in their review of ploughzone archaeology and tree hollows, [] they have not adequately explained the issues or the potential complexity of these features as revealed by the publications they cite (the lead author - and excavation director – of one being CBA’s expert witness for the Examination).

In some (but not all) cases of tree hollows arise from trees falling over (whether by wind or other mechanisms, including human agency). In these cases the direction of fall of the tree can often – but not always – be ascertained from the stratigraphy of the

The Applicant disagrees with the CBA’s assertion on [xii] that the ‘the site-by site emphasis’ within the Action Areas ‘is over-prescriptive not allowing for the uncertainties inherent in the evaluative surveys and trenching’. The DAMS sets out the overarching scope, guiding principles and methods for planning and implementing mitigation. For each site or area of archaeological interest, the Archaeological Contractor will prepare a SSWSI that outlines specific measures that would apply to particular pieces of archaeological fieldwork, to be carried out as part of the programme of archaeological mitigation works. Each SSWSI will be finalised in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG, prior to work commencing in that site or area of archaeological interest. The SSWSIs will outline specific excavation measures and scientific sampling strategies applicable to the proposed fieldwork. These detailed specifications will necessarily be site-focussed in order to be practicable. The DAMS builds in responsive flexibility, providing for the modification of works specifications if required during the investigations to enable detailed recording to take place, and to allow adequate time within the construction programme in the event of important discoveries [REP7-019, paragraph 6.5.4]. The DAMS acknowledges that “*new areas for investigation may be identified as a result of emerging results and unexpected discoveries*” [REP7-019, paragraph 6.1.2], and provides for the proper treatment of unexpected finds [REP7-019, paragraph 6.1.18 – 6.1.20].

SSWSIs will be prepared with regard to the Archaeological Research Agenda, which will provide a framework for focusing archaeological recording work and will ensure that information collected is valid for meaningful archaeological research relevant to both site specific and Scheme-wide research objectives. One of the detailed principles regarding the design of archaeological work for the Scheme is to “*consider archaeological and cultural heritage evidence from all periods and its contribution to the understanding of the historic landscape and its use over time*” [REP7-019, para. 2.3.1], emphasising the holistic investigation, analysis and interpretation of archaeological data.

For tree hollows, the Applicant has provided a proportionate and reasonable approach to sampling these in the updated DAMS submitted at deadline 8.

deposits filling the hollow created by the rotating root plate. In these cases a distinction (sometimes very marked) can be seen between topsoil (and whatever was in it) that fell into the side of the hollow towards the direction of fall, and subsoil (gradually falling off the upended roots) trapped in the usually larger side away from the direction of fall. Either side may also trap fallen or washed in charcoal, snails etc etc from the contemporary surface. Where related to tree clearance they may trap charcoal which is of special significance if identifiable as root charcoal and hence more likely to be related to contemporaneous activities/clearance. The methods of large scale forest clearance in the Neolithic and Bronze Age are uncertain: while chopping down large forest trees with stone (and later, bronze) axes is demonstrably plausible; so is the possibility of ring-barking trees and pulling them over when roots have sufficiently decayed.

Fallen trees can also be used as a convenient place for shelter etc., they can thus trap redeposited surface material and/or material reflecting use of the area, the environment (as revealed by encapsulated topsoil, snails charcoal etc) and contemporaneous activity.

CASE STUDY ONE An intriguing example found beneath the remnants of a small Bronze Age barrow at the Rollright Stones, N Oxon (Lambrick, G) Excavation of a largely ploughed out round barrow revealed a highly concentrated scatter of non-joining Mesolithic snapped bladelets and a broken arrow head in the very thin old ground surface next to an irregular hollow of soil representing the topsoil side of a tree-throw hole. This is interpreted as an extremely short lived moment when someone with a pocketful of pre-prepared bladelets used a fallen tree which created a well-lit opening in the forest canopy as a good place (perhaps sitting on the trunk of the fallen tree) to prepare some implement(s) using the other halves of the bladelets, discarding the unwanted pieces and broken arrowhead. Had the barrow not been built on this particular

Highways England considers that this approach does not ‘substantially limit the research questions that might otherwise be addressed’.

With respect to CBA’s comments at [x], the Applicant disagrees that it is the place of the draft DAMS to provide ‘the strategy for communication across all relevant sectors and management hierarchy of the project team.’ The OEMP addresses liaison related to Preliminary Works [AS-085, item PW-COM1], community engagement [AS-085, item MWG31], coordination and environmental Interface management for the Main Works [AS-085, item MWG32]. Communications with the public, non-agricultural landowners, stakeholders and other interested parties, outreach and education, where appropriate will be undertaken by the Main Works Contractor’s Community Relations Manager (CRM) [AS-085, p. 18].

As stated above the Applicant has worked tirelessly with regards to collaborating and partnering with heritage partners throughout the outline design phase in order to manage risk, continually improve and deliver quality outcomes. This approach will continue through the detailed design and construction phases.

The ‘gaps’ and inconsistencies have been addressed in the revised draft DAMS submitted at deadline 7 [REP7-019].

The Applicant disagrees with the CBA’s comments with respect to the flow charts. The purpose of the flowcharts is to show visually the communication flows for the archaeological mitigation works, which are explained in more detail in the body of the DAMS itself. It is not the purpose of the flowcharts or the draft DAMS to cover the whole of the construction project.

The Applicant restates that the draft DAMS is a strategy document. It has been revised and updated at deadline 7 [REP7-019]. The detailed information that the CBA says is required now will not be known until the detailed design stage. It is the Applicant’s view that preservation in situ is feasible and deliverable. The Applicant notes that DMRB Volume 10 Section 6 Part 1 states at paragraph 2.2.1 that with regards to “*archaeological sites and remains [...] that there is a presumption in favour of their physical preservation*” and also at paragraph 2.9, “*Preservation in situ is therefore preferable, and preservation by record should only be considered after other design solutions have been fully considered.*”

spot; or if just once it had been ploughed a few centimetres more deeply, the tree throw hole (which contained no anthropogenic material) would have survived and the bladelets would have been mixed into the topsoil.

CASE STUDY TWO In the Highways England review of ploughzone and tree hollow archaeology reference is made to work at the Drayton Cursus in 1985-6 (Lambrick, G. and Robinson, M., "Tree-throw holes and tree clearance," in *Lines in the Landscape*, Oxford, Oxford Archaeology, 2003, pp.60-67).

But the HE study does not explain the sampling approaches adopted there or what was revealed. The site straddled the line of one side of the Drayton Neolithic cursus (south of Abingdon) where the prehistoric ground surface survived beneath Roman and later alluvium. Sometimes evident through it, removal of the buried soil revealed a dense scatter of 78 tree-throw hollows occupying c.30% of the exposed excavation area; not all were excavated, but even so finds of pottery, worked flint and animal bone came from 28%; root charcoal was recovered and carbon dated to the early and middle Neolithic; ceramics ranged from early Neolithic to Beaker; lithic artefacts ranged from Mesolithic to Bronze Age; animal bones reflected domestic use; charcoal and signs of scorching were common; large fragments of Neolithic pottery suggest deliberate deposition.

At Drayton the number of productive Neolithic to Bronze Age tree-throw holes outnumbered deliberately dug pits by 7:1; more pottery and lithics were recovered from tree-throw holes than pits; the majority of pottery and lithics came from the pre-alluvial ground surface.

These are fairly typical results where there are foci of interest. Partly apparent at Drayton - but even more so elsewhere - is that the concentration of tree hollows and the proportion containing anthropogenic material is very variable but not very readily predictable, especially in plough-truncated areas where other indications of activity in surviving soils no longer survive. The variability revealed by the very small evaluation sample as in the

Please see also response to paragraph 2.1.43 below.

The Applicant notes the CBA's comment on approvals. This is addressed within the revised DAMS as submitted at Deadline 7 [REP7-019; paras. 1.3.2 – 1.3.5; Section 8.1 and Appendix A]. Please see also response to paragraph 2.1.43 below.

Regarding areas where fill materials will be over 1m in depth, the Applicant will undertake archaeological investigation to avoid inaccessibility in the future, following consultation with Wiltshire Council, Historic England and HMAG.

As stated above the preferred option at this stage of the design is preservation in situ. Any changes to this will be detailed in an SWSI for the Action Area at the detailed design stage.

The compound areas have been the subject of archaeological geophysical survey – which is sufficient at this stage of the design to support the design assumption and preferred option of preservation in situ. The Action Areas have been updated in the draft DAMS submitted at Deadline 7. Regarding Countess East, the results are in the WSHER and are presented in the archaeological baseline report [APP-211].

Preservation in situ is both feasible and deliverable. The Applicant notes that DMRB Volume 10 Section 6 Part 1 states at paragraph 2.2.1 that with regards to "archaeological sites and remains ... that there is a presumption in favour of their physical preservation" and also at paragraph 2.9 "Preservation in situ is therefore preferable, and preservation by record should only be considered after other design solutions have been fully considered." It is the Applicant's view that preservation in situ is feasible and deliverable.

With regard to mechanism by which conflicting standards for in situ preservation of archaeology are to be resolved, please see the Applicant's response to paragraph 2.1.43 below.

The Applicant disagrees with the views expressed by the CBA in relation to paragraph 5.1.2 of the DAMS. It is the Applicant's view that preservation in situ is feasible and deliverable and this should be taken into account as part of the Environmental Impact Assessment. DMRB Volume 11 Section 3 Part 2 states at para. 2.17 that "the principle that underpins government and

plans presented in the Highways England review, but not reported, hints at this.

Making the most of the significant research opportunities that tree hollows present needs careful consideration of how relative densities of burning, artefacts etc they reveal (as well as their role in specific domestic or ritualised activity) can reveal patterns of activity relative to other forms of archaeology (whether pits, monuments burial etc etc).

This needs to be seen within a far clearer appreciation of what they represent: the best contexts for understanding prehistoric activity other than deliberately created features (which often contain 'special' rather than 'ordinary' deposits are buried land surfaces, especially where sealed and therefore attributable to a particular period or span of periods. The ploughzone is in effect the total content of any ground surface(s) within the depth of present and past cultivation: survival of soft prehistoric pottery is unusual because of attrition, but lithics survive well but can be too worn or broken by attrition for useful detail such as use-wear marks to survive. Tree hollows and other buried hollows tend to act as a more or less random sample of disturbed buried ground surface but with some *in situ* material.

They are therefore a much less complete but also less disturbed record of prehistoric activity.

The sampling proposed appears to be a minimum of 150 litres of fill (eg 15% of a hollow c. 1.5m diameter averaging 0.4m deep) from a maximum 12.5% of all identified hollows, which, depending on variability of sizes, represents a 2% sample of total available deposit. Even with maximum proposed sampling 87.5% would be discarded and since even 50% excavation of the remainder seems highly unlikely, it can safely be assumed that between 93% and 98% of tree hollow deposits would be lost. Considering their significant potential this would substantially limit the research questions that might otherwise be addressed.

[x] In general the communication strategy within the

professional guidance is that archaeological and other cultural heritage assets are non-renewable resources and that their physical preservation in situ when possible should be the primary goal of cultural resource management" and at Annex 5 para. 5.11.2 under archaeological mitigation "*preservation of archaeological remains in situ is usually the option preferred on cultural heritage grounds.*". The CBA raised similar points and the Applicant responded to its submissions in this respect at ISH8 and the Applicant's response is recorded in its written summary submitted at Deadline 8, in relation to Agenda Item 5.1(v).

As stated above, the Applicant asserts that sufficient information has been submitted by the Applicant at this stage of the design to support the design assumption and preferred option of preservation in situ and following the principles of the Archaeological Evaluation Strategy agreed with HMAG and the Scientific Committee, specifically:

- "*Utilise the considerable information already available from prior investigations where appropriate and relevant before commissioning any new works. Only undertake further surveys when the evidence from previous surveys has been reviewed and found to be in need of augmentation*";
- "*Only undertake extensive intrusive works in areas where it is probable that there will be a direct impact through development*"; and
- "*Only undertake the minimum appropriate intrusive field work where it is necessary to inform research questions and the design process.*"

The B3083 compound (Winterbourne Stoke, Site 53 in the DAMS [REP7-019, pp. 344-345]) does not contain evidence for 'an Iron Age/ Romano-British settlement on High Down'. The High Down settlement [UID 2039; WSHR MWI7098; MWI7114] is recorded in gradiometer survey further to the north. Gradiometer survey of the Winterbourne Stoke compound area recorded a ditch-like curvi-linear anomaly [12000] in the northeast corner of survey area NW8e, Parsonage Down North, stating that "It is probable that this is **associated with** the probable later prehistoric and/or Romano-British settlement on High Down, recorded to the north-east of the area" [REP1-041, paragraph 5.1.6; Figure 27, page 100]. The compound is not sited on a settlement, but in an area of associated co-axial field systems and possible enclosures south of the known settlement.

archaeological team and external curators (and the public) is reasonably clear. What is just as critical (but missing) is the strategy for communication across all relevant sectors and management hierarchy of the project team. While this is quite substantially up to the main contractor and their subcontractors, there needs to be statement of basic principles (such as those adopted for T5 and recommended by the Applicants own procurement review) to demonstrate a commitment to excellent, continuous improvement partnership working driven by seeking highest quality outcomes.

[xii] Please see comments above Q.CH.2.2; Q.CH.2.5; Q.CH.2.6; Q.CH.2.7 The structure of Action Areas is clearer than much of the rest of the DAMS, presenting more of an area- rather than site-based approach by which the known archaeology, extrapolations form the surveys and evaluation and previous discoveries contribute to a more wide-ranging recognition of research potential. However, the site-by site emphasis within this is over-prescriptive not allowing for the uncertainties inherent in the evaluative surveys and trenching. This becomes especially apparent when consideration is given to the provisions for the fall-back of investigative work if preservation *in situ* is not feasible (see below Q.CH.2.9 xv).

There are numerous gaps and uncertainties (such as the wide wedge-shaped area E of the E tunnel portal) where it is not clear why they should be omitted. It is noted that some research issues recognised in this account are dismissed in the main text.

All these flow charts are presented as if they are not part of a major construction project with which they must be fully co-ordinated. These charts are exceptionally simplistic and give no indication of how this strategy must be integrated with other imperatives. As such they seem an inadequate basis for integration into the DCO.

The CBA has made submissions both written and orally on this

The Applicant details the archaeological remains at Countess East in the draft DAMS [REP7-019; Appendix D] and following guidance in DMRB Volumes 11 and 10 is committed to preserving the remains in situ.

The draft DAMS, as submitted at deadline 7 [REP7-019], has been revised to make the Action Areas clearer in Appendix D.

matter, and in the ongoing absence of any effective coverage of this issue in the draft DAMS we wish to summarise again the issues that need to be addressed:

- Technical literature has not been cited (and presumably not consulted) to develop the *in situ* preservation provisions on an informed basis, nor correlated with conflicting principles of soil handling as required by DEFRA and BS standards
- There has been no attempt either to determine what could or could not be reconciled with those standards; or whether, in the absence of equivalent archaeological standards, soil conservation or archaeological conservation would take precedence
- Paragraph 5.3.11 of the draft DAMS indicates that HMAG/ WCAS and the Historic England Science Advisor would only be consulted about the detail for achieving preservation *in situ*, NOT who would determine as between the two conflicting standards, noting that the alternative to *in situ* preservation beneath topsoil is archaeological excavation. As with other provisions this should be subject to approval by the relevant national agencies for both issues (Historic England and the Environment Agency) together the relevant officers in Wiltshire County Council.
- While Historic England's Guidance on preservation in situ (2016) referred to in paragraph 5.3.12 of the draft DAMS provides some useful general guidance, it does NOT

cover this issue in any detail, only observing that

Construction of buildings and embankments, and heavy vehicle tracking (including in arable cultivation) can cause significant loading and potentially lead to sediment deformation and damage to artefacts. Some valuable research on loading impacts on archaeological remains has been carried out in the last ten years (Sidell et al 2004; Hyde 2004) and this is an area where further observations, research and synthesis could be undertaken.

It provides no guidance on the practicalities involved (cf DMRB vol 10 and comments below) and the only references cited are two of the papers CBA has drawn attention to in the PARIS conference proceedings, but not the DEFRA research.

- There has been no attempt to look at the detailed differences that arise from burying archaeology different purposes, or different short and long term outcomes.
- The most significant distinction to be made is between those areas used temporarily for construction and returned to agriculture, and those used for permanent spoil disposal and landscape mounding.
- In the case of temporary usage there is a further distinction to be made between areas used passively for storage and those used actively for plant and what loadings and stresses arise from such uses and therefrom, what thickness of protective hardcore is required
- For mounding a distinction is made in the draft DAMS between areas of deep fill where topsoil would be

stripped and ploughzone and subsoil investigations would be undertaken, and other areas where no stripping would be carried out.

- There is no evidence for why the loading of thick but static spoil would presumptively be more damaging (thereby requiring removal of existing topsoil) than the loadings and dynamic forces of compression and distortion occasioned by use by heavy plant.
- For none of these scenarios is the sequence of installation, source of hardcore for creation of compounds and haul roads, method of installation in terms of plant NOT working on unprotected topsoil or exposed subsoil working explained.
- For the areas of compounds haul roads and temporary diversion of the A303 etc., there is no explanation of the method of removal, again ensuring that plant does not work from re-exposed topsoil; where the retrieved hardcore would be disposed of; or what provision would be made to ensure that damaging agricultural decompaction methods were NOT used subsequently – even just as a precaution – after the land was released back to farming.
- For all the compound areas, temporary road diversion and haul roads it is acknowledged that leaving topsoil in situ may not prove feasible; the alternative of leaving subsoil archaeology in situ with additional protective covering is not considered
- The alternative to preservation beneath topsoil for these areas is excavation; but there is no details about this in the site-by-site appendices, and for example the satellite compound for the B3083 is not registered as a site in the Appendix D action areas. It is nowhere observed that the

main and B3083 compounds have not been evaluated, and in the case of Countess East, the coverage and detail of what previous geophysical surveys and evaluation trenches revealed has not been presented - only the recent geophysics carried out under this scheme being covered).

Since the proposals for preservation of topsoil *in situ* under compounds, temporary road diversion and haul roads prior to return to agriculture is *prima facie* contrary to DEFRA and BS Standards, and there is no countervailing archaeological standard that trumps these provisions. Examples include

- *Areas of soil to be protected from construction activities (e.g. retained trees, protected habitats, archaeology, invasive weeds) should be clearly marked out by barrier tape and exclusion signs. Haul routes should be no wider than necessary to accommodate two passing vehicles and should be stripped of soil down to a firm base. Indiscriminate vehicle movements across soil should be avoided.*
- *Once re-usable soil resources have been identified within a site it is important to strip them carefully for beneficial reuse on or off-site.*
- *Not stripping topsoil from areas that are to be built on, regraded or trafficked by site vehicles will increase project costs, as the resource will be wasted.*
- *The preferred method for minimising damage to topsoil ... shows the transport vehicle running on the basal layer under subsoil as subsoil is also to be stripped. If only topsoil is to be stripped, the vehicle would run on the subsoil layer.*
- *On most construction sites, the receiving layer will have*

been compacted by vehicles, foot trafficking or the storage of building materials. Therefore, prior to spreading soil the substrate should be properly de-compacted to break up any panning to reduce flood risk and to promote deeper root growth. ... In ... open areas, a tractor-drawn subsoiler is capable of loosening soil that is not too heavily or deeply compacted. In some instances, compressed air injection can be used to de-compact the soil profile.

- *Deep compaction can only be effectively relieved using heavy duty ripper equipment.*

So far the Applicant's response to the CBA's concerns has been as follows ([REP4-030] p 2-30):

Mr Taylor QC explained that the draft DCO includes a requirement for the Applicant to comply with the OEMP and DAMS, both of which are approved by the Secretary of State and would be certified documents. As a result, any soil management strategy could not contain any provision that conflicted with the approach in the DAMS, as that would mean compliance with the DAMS could not be achieved in accordance with the DCO requirement. Mr Taylor QC noted that in practice, this conflict would not arise.

- **Post hearing note:** *item MW-GEO7 of the OEMP requires that the main works contractor develops a Soils Handling Strategy, with reference to BS3882: 2015 Specification for Topsoil and*

the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Site. This is further bolstered by the new paragraph 5.2.11 in the updated DAMS submitted at Deadline 4"

Both these statements strongly reinforce the CBA's view that it

would be the unchanged paragraph

5.1.2 in the draft DAMS: “*In respect of archaeological remains within the footprint of the Scheme, where preservation in situ is not feasible, a comprehensive programme of archaeological mitigation fieldwork and recording will be implemented.*”). The ‘feasibility’ of complying both with DEFRA and BS Standards AND with the archaeological preservation ambition looks very slim, even for permanent mounding (especially in the light of possible topsoil shortages). Even if only unfeasible for compounds etc to be returned to agriculture, this still makes a big difference to the nature of archaeological mitigation (especially where these areas have not been evaluated).

On the basis of PINS Advice Note 17 (on adopting the precautionary approach and worst case scenarios when considering cumulative effects) the CBA retains its the view that until specifically demonstrated to the contrary, the ExA should assume that paragraph 5.1.2 will apply and that all archaeology – at least in the areas of preservation of topsoil under compounds, haul roads and temporary road diversions etc.

- would be lost or significantly harmed and therefore need to be subject to investigation.

This has significant policy implications, bringing these areas and the added uncertainty about their actual archaeological content into the ambit of NPSNN policy 5.139 (see above regarding the Applicant’s misplaced observations on Hayes v York CC).

The overall loss of archaeology is far from clear, as the various areas were not subject to ploughzone archaeology and evaluation, or in the case of Countess East previous work has not been presented in detail.

- The main compound area was not trial trenched or sampled for ploughzone

archaeology, and given the limitations of the geophysics it is therefore very uncertain as to what the content of this area could be; however, it includes a Bronze Age barrow, is crossed by a continuation of a major boundary ditch that is scheduled to the SE and is adjacent to a strip along the realigned A536 where evaluation and plough zone archaeology demonstrated significant potential. It thus appears to contribute to various aspects of WHS OUV. (see Appendix D Sites 17 and 19).

- The B3038 compound was included in geophysical survey which revealed field systems and possible enclosures of possible Later Prehistoric, Roman, Medieval/ Post-medieval date and remains of an Iron Age/ Romano-British settlement on High Down but was not subject to ploughzone archaeology or evaluation (see Appendix D Site 53).
- The Countess compound was surveyed and evaluated for previous proposals as well as being subject to GPS survey for the current scheme. It contains significant multiperiod archaeology, including Neolithic activity, a Roman settlement with a stone building and associated features and an early Saxon settlement including a series of sunken featured-buildings (which suggest other less readily identified remains as well – see Appendix D Sites 31 and 50 – mapped as within this area but if so adding much else).

These main areas also include an array of service trenches etc separately listed in the mitigation tables too difficult to untangle. Similarly the haul roads, temporary road are adjacent to areas listed for excavation but too difficult to disentangle into coherent areas for systematic treatment.

2.1.9	<p>DE.2.1</p> <p>YES – In addition to any general widening of scope, it should explicitly include the extensive works and significant structures and landscaping outside the WHS boundary as it stands, but nonetheless affecting its setting and OUV. Some of these areas could become part of the WHS following boundary review.</p>	<p>The Applicant has responded to this in its response to the Second Written Question De.2.1 in its Responses to the ExA's Written Questions-Design (De.2) [REP6-023].</p>
2.1.10	<p>DE.2.2</p> <p>YES. As we have noted in our main written submission, for such a major intervention it is never going to be anything but a massive 21st century imprint on the landscape of an utterly unprecedented scale within the WHS. It is not at all clear that an 'overall design vision' would help: the aims referred to suggest localised responses without creating an overall alternative focus, so any other 'vision' would seem in danger of emphasising not reducing the impact. If anything the principle should be even more localised, based on addressing (if possible) the specific aspects of setting where some reduction of harm might be possible. At present the setting analyses have not been sufficiently explicit about how relevant factors would change (see CBA submissions [REP2-070 para 50ff; REP2-076; REP3-049]).</p>	<p>The Applicant has responded to this in its response to the Second Written Question De.2.2 in its Responses to the ExA's Written Questions-Design (De.2) [REP6-023].</p> <p>With regards to the Scheme design – the Scheme has been sensitively and carefully designed to limit impacts as far as possible, minimise intrusion and integrate the Scheme into the existing landform and to remove the sight and sound of traffic from much of the WHS landscape, a key aspiration of the 2015 WHS Management Plan.</p> <p>The Applicant does not agree with the CBA's comment that the Setting Assessment is not 'sufficiently explicit about how relevant factors would change'. The Setting Assessment details the principles of assessment applied [APP-218, Section 3.6] and goes on to describe the setting of asset groups and heritage assets, effects of the present A303 and the anticipated effects of the Scheme during construction and operation. In many cases impacts on heritage assets can potentially be multiple, arising from different construction activities or resulting from different elements of the Scheme. Impacts can be both negative and positive. In cases where a range of impacts are anticipated, both negative and positive impacts are described, and a judgement has been made assessing the overall impact and effect of the Scheme.</p> <p>The Applicant considers that the design principles (as secured in the OEMP) are sufficiently detailed to address harm that has been identified. Specific design measures are described, where relevant, for affected heritage assets, in the Setting Assessment [APP-218].</p>

2.1.11	<p>DE.2.3</p> <p>YES: See DMRB volume 10 for illustrations of good and bad practice in treatment of highways fencing and other boundaries, especially in sensitive locations, and how understanding the local landscape can be crucial to achieving acceptable outcomes.</p>	<p>Please see the Applicant's response to SWQ De2.3 [REP6-023]. As noted in that response, there are numerous controls on fencing design within the OEMP (see D-CH14, D-CH24, D-CH25, paragraph 4.5.3 (c) and P-PRoW2). At Deadline 7, the Applicant submitted illustrative examples of how the Scheme could look further to the design vision commitments and principles within the OEMP, including fencing [REP7-024].</p>
2.1.12	<p>DE.2.4</p> <p>YES: See DMRB volume 10 for illustrations of good and bad practice in treatment of structures in sensitive landscapes. Apart from statutory bodies, it is reasonable that those who live in the area and use these structures (and the public at large) should have a say as they do with any development application that covers issues of detailed design.</p>	<p>The Scheme has already been subject to extensive consultation which has informed the proposals submitted for development consent. The detailed design of these proposals would be subject to the further consultation measures with the appropriate bodies for such issues as set out in the OEMP.</p>
2.1.13	<p>DE.2.5</p> <p>YES: The process should operate like decisions made on the acceptability of the design of other new development affecting the setting of ancient monuments, conservation areas and listed buildings: Historic England and other statutory consultees should be consulted; local people and interests should be able to comment; and the local authority should decide. This analogous to a reserved matters detailed application to an outline consent.</p>	<p>The Applicant has responded to this in its response to the Second Written Question De.2.5 in its Responses to the ExA's Written Questions-Design [REP6-023].</p>
2.1.14	<p>CC.2.1</p> <p>i. Please see CBA's previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3- 049] and comments above (Q.AI.2.1)</p> <p>As above, please see CBA's previous representations about RIS and SEA and comments above (Q.AI.2.1)</p>	<p>Please see Highways England's response in paragraph 2.1.1 above.</p>
2.1.15	<p>CC.2.2</p>	<p>Please see Highways England's response in paragraph 2.1.1 above.</p>

		Please see CBA's previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3- 049] and comments above (Q.AI.2.1)
2.1.16	CC.2.4	Please see Highways England's response in paragraph 2.1.1 above.
		Please see CBA's previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3- 049]and comments above (Q.AI.2.1)
2.1.17	CC.2.5	Please see Highways England's response in paragraph 2.1.1 above.
		Please see CBA's previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3-049] and comments above (Q.AI.2.1)
2.1.18	CA.2.13	The NAO report speaks for itself, but the Applicant does not agree with CBA's view that it was "highly critical" of the value for money approach adopted. The National Audit Office (NAO) in their audit, para 2.6 [https://www.nao.org.uk/wp-content/uploads/2019/05/Improving-the-A303-between-Amesbury-and-Berwick-Down.pdf] state that Highways England sensibly expanded the scope of monetised appraisal to include heritage benefits.
		The National Audit Office report of May 2019 was highly critical of the value for money approach adopted but did not expose the full illogicality of it, especially when seen as it should be in the light of
		a) Cheaper alternatives (such as a variant of F010 surface route to the south) that achieve far better outcomes for the WHS and in particular
		<ul style="list-style-type: none"> How far (IF it is valid) the heritage valuation was framed in a manner such as to distinguish between a balance of small net benefit over harm to the WHS (in the Applicants view) and against full benefit without harm of a route avoiding the WHS? How far (IF it is valid) the heritage valuation (PLUS the additional benefit for the WHS) contributes to the VFM of a route such as F010 avoiding the WHS?
		In response to CBA's bullet "How far (IF it is valid) the heritage valuation was framed...": The contingent valuation survey asked respondents to consider a scenario in which the road was removed from a section of the WHS whilst tunnel portals and some surface road remained within the WHS; it did not ask respondents to consider complete removal of the road. The heritage valuation is not the sum total of all work undertaken to assess the impact on the WHS, and was complemented by qualitative insights from the Heritage Impact Assessment and all other sources of positive and negative impact, to ensure a comprehensive view of every option's Value for Money was reached. The overall assessment of Value for Money considers all these relevant factors, not just those captured in the monetary valuation.
		In response to CBA's bullet "How far (IF it is valid) the heritage valuation (PLUS the additional benefit for the WHS) contributes to the

- What additional costs would arise if the alternative route such as F010 were to be optimised to shorten its length and minimise impacts on nationally protected assets and avoid harm to the internationally designated Avon Valley SAC?
- IF the heritage valuation is NOT considered a valid approach, how far short of a positive net VFM would be achieved for different options

b) The wider context of where money spent on this scheme from the overall RIS budget is not available to others where, unlike the Stonehenge WHS, effects on nationally and internationally protected areas are unavoidable.

- In the absence of any generally accepted methodology for monetising heritage ecological and other ‘intangible’ benefits, how might BEST past practice be used as a better surrogate for good VFM to judge where, across the RIS programme of highways development, expenditure on costly means of delivering net environmental benefit minimise harm on otherwise unavoidable nationally internationally protected landscapes is best allocated?

Please see CBA’s previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3- 049] and comments above (Q.Ai.2.1)

For all the above, please see CBA’s previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3-049] and comments above (Q.Ai.2.1)

Please see CBA’s previous representations about RIS and SEA [REP2-070 para 124ff; REP2-078; REP3- 049] and comments above (Q.Ai.2.1) and comments above regarding alternatives.

A matter not considered by either the NAO or PAC is the relationship between a cheaper alternative outside the WHS (like

VFM of a route such as F010 avoiding the WHS?”. The monetary estimates from the heritage valuation were applied equally to tunnelled options and options that avoid the WHS entirely. Qualitative analysis was then added alongside this monetary assessment to reflect the potential differences in impacts on cultural heritage between the options. In so doing, the Applicant sought to present a balanced and impartial view of the VfM of every option before a decision was taken to prefer a tunnelled solution, based on all the available information.

The alternative route does not provide better VfM than the preferred tunnel option nor improve the case for upgrading other sections of the A303 as CBA suggest. VfM was not the decisive factor in preferring one route over another.

It should be noted that alternative routes were not ruled out entirely on the basis of cost. A comprehensive assessment of alternatives is set out in the Technical Appraisal Report [REP1-031 to 038] and Scheme Assessment Report [REP1-023 to 030]. These reports explain the process that was used, following standard practice required by the Department for Transport, and also bespoke additional steps which reflect the complexity and scale of the Scheme.

The question of whether the costs of this project could be better spent on environmental protection and improvement elsewhere in the RIS programme is moot. The RIS contained a commitment to develop the A303 Amesbury to Berwick Down scheme, and Government remains committed to its delivery.

	<p>F010) and the overall delivery of the 8 projects for the SW corridor. Conclusion 4 of the PAC report is that <i>“The Department and Highways England’s piecemeal approach to upgrading the A303/A358 makes it more difficult to demonstrate value for money across the whole road corridor.”</i></p> <p>But the Committee focussed entirely on the Stonehenge tunnel, just assuming it is required to deliver some net benefit. They did NOT probe whether a cheaper alternative might deliver better value for money, as well as greater benefit and no harm for the WHS against some harm across a non-protected landscape; nor how that landscape compares with other areas affected by RIS projects such as the Oxford-Cambridge Expressway which would be likely to cross some areas of open countryside of comparable quality; nor other schemes such as the A417 which if left on the surface as proposed would have a substantial, unavoidable effect on the nationally protected Cotswolds AONB.</p> <p style="padding-left: 40px;">Nor did they consider that such a cheaper alternative might be somewhat longer but carry less costs AND less risk AND give greater certainty to delivery of the other components of the corridor, thereby improving the overall value for money and environmental benefits and reliability of delivery of the whole.</p>	
<p>2.1.19</p>	<p>FG.2.34</p> <p>These questions pre-suppose that the baseline hydrological survey is adequate to identify a ‘worst case’ scenario. See comments below</p>	<p>There is sufficient baseline information to support the environmental impact assessment. During the ISH2 hearing it was confirmed that Highways England has followed the required guidance from Historic England in the production of the Blick Mead assessment, Historic England further confirmed this at the hearing, noting also that the assessment conducted was adequate.</p> <p>The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors and the lowest groundwater levels on record, from the 1976 drought and the highest from the floods of 2014. Baseline surveys to date have informed the conceptual model at Blick Mead</p>

		[AS-016], and in the Chalk aquifer [AS-019] supporting the conceptual model and numerical modelling approach.
2.1.20	<p>FG.2.34</p> <p>This question pre-suppose that the baseline hydrological survey is adequate to identify a 'worst case' scenario. See comments below</p>	See response to paragraph 2.1.19 above.
2.1.21	<p>FG.2.37</p> <p>Please see comments on Q.CH.2.9 xv above: Historic England must also be involved and the bodies should approve the Soils Management Strategy, not merely be consulted</p>	See response to Written Question Fg.2.37 [REP6-028] which explains that the OEMP has been amended at deadline 6 (item MW-GEO3) to make clear that Wiltshire Council and the members of HMAG will be consulted on the Soils Management Strategy. This builds on the measures related to soils set out in the DAMS.
2.1.22	<p>FG.2.41</p> <p>This issue is concerns not just monitoring but IF an adverse effect (or potentially adverse effect) were to be detected, how would any remedial action be taken and what would it comprise? A key issue here (perhaps implicit in the question) is that any hydrological monitoring must be effective in respect of the most sensitive and potentially technically difficult resource to monitor with both robustness and the means to halt and prevent further harm. See further comments below Q.Fg.2.42 and Q.Fg.2.43.</p>	<p>MW-WAT10 in the Outline Environmental Management Plan secures monitoring, the development of trigger levels and mitigation/action plans should these be necessary. MW-WAT10 includes the following:</p> <ol style="list-style-type: none"> a. Potential effects on groundwater (resources and quality) that fall outside other regulations such as the Environmental Permitting Regulations. b. An update to the Groundwater Risk Assessment for the final design and construction plan. c. The groundwater level and water quality monitoring and reporting programme. d. Development of baseline groundwater conditions and derivation of trigger levels and action levels/ Mitigation/ action plans for exceedances and accidents/incidents. i. The management of groundwater flood risk. <p>The Groundwater Risk Assessment referred to at item b) includes Blick Mead as demonstrated in Annex 3 of Appendix 11.4 of the Environmental Statement [APP-282]. This will mean that impacts at Blick Mead would be re-considered as part of MW-WAT10. This ensures that should any remedial</p>

		action, however unlikely, be required, appropriate controls and measures are fully provided for.
2.1.23	<p>As above: this issue concerns not just monitoring but IF an adverse effect (or potentially adverse effect) were to be detected for archaeological preservation, how would any action to halt decay and prevent any further harm be taken? And what such action would be adopted how quickly to achieve that? The concept of 'remediation' in these circumstances is inappropriate, suggesting that any initial harm might be 'remedied,' but this is NOT possible: like archaeological deposits and objects, preserved organic remains are dead and incapable of regeneration. The only response possible is to stop ongoing loss and prevent any further harm. This means not only monitoring to detect harm in the first place but also to</p>	<p>We understand this question is regarding Written Question Fg 2.42 where the term 'remediation' is used. Note the Applicant's response [REP6-028] does not refer to remediation of the site and does not imply harm will be done.</p> <p>MW-WAT10 in the Outline Environmental Management Plan secures monitoring, the development of trigger levels and mitigation/action plans should these be necessary. The mitigation, if required, would prevent loss and harm.</p> <p>It should be noted that the wetting at Blick Mead is supported by a principal aquifer in which water levels naturally fluctuate, within which there is a large buffering capacity.</p>
2.1.24	<p>FG.2.43</p> <p>Apart from not even recording one full hydrological cycle and being confined to winter months, let alone several cycles over a number of years. The logs in the graph in the technical monitoring report ([AS- 022] p16) indicate that starting levels were already on an upward trajectory.</p> <p>There is also insufficient clarity about the complex 3-D spatial relationship between organic survival and water table fluctuations, including the duration of draw-down periods affecting different parts of the site.</p> <p>This is further exacerbated by the lack of adequate spatial information about the quality of preservation</p>	<p>There is no guarantee that conditions recorded over a typical twelve months will be representative of extremes. Therefore, the effects of the Scheme were assessed under a wider range of conditions than those likely to be experienced in a single year.</p> <p>Blick Mead monitoring [AS-015] shows pond levels such as at Chinese House falling to a seasonal minima between November and December 2018 followed by rising water levels. At this time manual dips began at the new groundwater monitoring points, which show rising levels from the first manual dips, so it is considered that the seasonal low for groundwater has been captured.</p>

– including no information at all about pollen (one of the most standard sources of palaeo- environmental information), despite being cited as available ([APP-282] para 2.5.7 item 4).

What follows is an overview of the issues in order that the shortcomings of present data and their implications can be better appreciated. *Overall issue*

ES Appendix 11.4 [APP-282] states that

“The Mesolithic layer is shown on borehole transects within source [7] and these are reproduced in Figure 2.2, Figure 2.3 and Figure 2.4. They show that the Mesolithic layer occurs between 67m aOD and 68m aOD, immediately overlying sands and gravels. The depth to the Mesolithic layer below surface is variable, but ranges between around 0.75m and 2m beneath made ground and undifferentiated alluvium.”

This immediately indicates the potential 3-D complexity of the issue of how fluctuating water table relates to preserved Mesolithic deposits, but makes no reference to evidence of later use of the site (possibly as a sacred spring). The 3D complexity of this is even more apparent in the considerable spatial variability in the amplitude of ground water fluctuation as summarised by the graph in the technical monitoring report ([AS-022] p16).

The question of the adequacy of baseline monitoring information thus raises concerns not just about the highs and lows of a very short monitoring period from late November to early March 2018-19, but also the lack of information about how long the ground water level is above or below any particular level and how that relates spatially to relevant archaeological remains.

In terms of archaeological evidence, it is important to appreciate that different kinds of remains have different degrees of resilience to decay and also have very different stories to tell. Where there is a risk of loss or degradation, the issue is not only what types of material are likely to survive and how well; but even more, what

The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors, the lowest groundwater levels on record, from the 1976 drought.

Baseline surveys to date have informed the conceptual model at Blick Mead [AS-016], and in the Chalk aquifer [AS-019] supporting the conceptual model and numerical modelling approach.

We understand the importance of waterlogged conditions in preserving the archaeological remains and the 3-D spatial relationship between organic matter and the water table. Water levels fall naturally during the summer causing partial drying in the autumn, which is when the Blick Mead archaeologists usually carry out their excavations. However, the important point is that there will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement or examine and determine the application. Similarly, there is no reason to provide additional detailed information regarding the palaeo-environmental potential of the site (including pollen) as this is already covered by previous publications by the Blick Mead Team and no significant effects are predicted from the construction of the Scheme.

kind of evidence is at risk of being lost or degraded.

Depending on whether trees and plants are insect or wind pollinated, the extent of tree cover at the time, and which pollen taxa can survive well in organic and acidic sediments that are not fully waterlogged but well-sealed from processes of decay, pollen typically reflects the vegetation in a wide surrounding catchment area. It can therefore provide valuable evidence of the wider landscape. Many other plant remains are more reflective of localised conditions and also anthropogenic activities. Insects are again usefully variable in their habitat preferences, and with most taxa being winged creatures, they can reflect both the wider landscape and localised conditions; but once again, preservation is variable (as exemplified by the ants found in sealed but not waterlogged condition beneath Silbury Hill whose wings were preserved showing that work started in late summer). Overall it is the survival of multiple lines of evidence (including those less reliant on water logging like snails, sediments, charcoal, animal bones, diatoms etc) that provides greatest palaeo-environmental potential.

Contrary to Highways England's assertion ([REP4-030] Deadline 4 Submission - 8.30.2 *Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019* p 2-34), Mr Lambrick did not refer to Starr Carr; but he DID outline how it is important to appreciate that the issue at stake for the waterlogged preservation at Blick Mead is not just the ground water levels *per se*, but how they affect soil conditions, and in particular the soil chemistry and life cycle of organisms that affect the survival or decay of organic remains. As he noted, the factors that affect this are not only the degree of waterlogging but also the soil matrix of any deposits, any fissuring and the overlying sediments. Short term fluctuations in groundwater levels may have lesser or greater effects on organic survival depending the sedimentary matrix of the overlying and underlying deposits. Much depends on whether any pathways are opened up for decay mechanisms to be triggered. Acidic soils tend to preserve organic remains better than calcareous ones. (cf Historic England 2016, *Preserving Archaeological Remains: Decision-taking for Sites under*

Development)

But crucial to all this (as Mr Lambrick also indicated) is not just the upper and lower levels in the natural seasonal fluctuation of the water table, but also the duration of such changes, especially the length of any exposure of organic deposits above ground water and whether this is sufficient for pathways of oxygenation and thereby the introduction and/or multiplication of bacteria and other organisms responsible for biological decay to be opened up (eg worms and other sources of bioturbation; fine rootlet holes; or cracking in alluvial clay covering).

Organic survival

Organic survival is not an 'either/or' mechanism: different parts of plants (eg leaves, seeds, pollen etc) have more or less resistance to decay; different taxa of plants vary in the resilience of these elements for survival. The same goes for insects. The quality of preservation – and its associated vulnerability to decay – can be judged to a significant degree from what survives. This varies with burial conditions and any post-deposition bioturbation etc. Preservation of peat deposits will vary from where they are in contact with other strata to where they are pure peat (in the case of the very limited evidence presented for Blick Mead the assessment of what organic materials are preserved was limited to the upper and lower margins of the main peat horizon – see below). As indicated above, these issues have implications for what ranges of archaeologically significant materials survive and hence what research issues can or cannot be addressed.

In this case, the reported results from the assessment – only one set of samples from a single borehole (BH25) (ES Appendix 11.4 [APP-282] 2.5.9 p.15-16) – indicate that the highest level at which waterlogged seeds and insects survived was 67.85m aOD to 67.83m aOD. These are described as '*not well preserved*' indicating that they are close to the threshold of survival. But this is not conclusive: despite the reference to pollen analysis having been carried out at Blick Mead (para 2.5.7), no pollen sampling is reported, although pollen is amongst the most resilient forms of

organic survival and can provide good archaeologically useful evidence even if other material is claimed not to warrant further analysis. Furthermore, as reported, the sampling was only carried out at the top and bottom of the peat deposit, so preservation may be much better immediately below the upper level.

It is also not stated whether or not this single borehole sample represents the highest recorded level of waterlogged preservation, and it is impossible otherwise to establish this. Of the 46 deposits described in Appendix A entitled “Archaeological Log of Waterlogged Conditions” (p.23ff), a high proportion are described as “dark brown organic clayey silt...” and only 15 refer to ‘peat’ or ‘plant detritus’ etc. Of these the top level of those recording some indication of in these vary from c.67.47 to 68.87 aOD but they vary in thickness from a few centimetres to well over a metre, making it impossible to know at what level preservation might occur (eg BH 21).

As noted above, no assessment of pollen survival is reported, although pollen is amongst the more resilient types of organic material to survive. For example the repeated references to ‘dark brown organic clayey silt’ could contain pollen even if no other plant or insect remains survive. Some deposits listed in the “Archaeological Log of Waterlogged Conditions” have descriptions which refer to worm granules and ‘massive’ or ‘blocky’ structure which indicate the conditions where small changes in the duration of waterlogging could affect preservation.

Overall this makes the 3D assessment of waterlogged preservation well-nigh impossible. It looks as if data used by the Blick Mead project to obtain a preliminary broad definition of the Blick Mead site has been used as a shortcut to fulfil a far more complex role for which it was not intended.

Implications of hydrological fluctuations

Mr Lambrick referred to his experience observing total loss of preservation in less than 5 years in the case of the dewatering effects of a gravel quarry where good waterlogged conditions

survived in a ditch either side of field boundary dividing different stages of extraction. Decay in broadly stable but deteriorating conditions can be much slower and more insidious, but ultimately no less destructive.

Monitoring groundwater levels may provide reassurance if no change happens in the amplitude and duration of immediately localised groundwater levels over a long period for which there is extended baseline data; if the amplitude and duration of enhanced ground water levels increase, gradual long- term decay may be slowed or stopped. If they decrease and if the duration of exposure to air increases, decay may be triggered or accelerated.

The bore hole assessment of the site as reported in ES Appendix 11.4 [APP-282] shows that the depth of Mesolithic material and relationship to underlying gravels and overlying alluvium is variable and complex. In addition, the nature of the ground water environment may make a difference, especially whether it is essentially static or dynamic. In this case, the Blick Mead site and its surroundings are in a series of seasonal springs and watercourses, the Blick Mead site being in the vicinity of the highest of these springs relative to the outflow into the river Avon, and also, as the monitoring records indicate, the area where fluctuations in groundwater levels are highest.

Referring to the Hydrological assessment and Tier 2 Blickmead assessment [APP-282] and ground water monitoring results Highways England state (in a post hearing note in their comments on Cultural Heritage oral submissions [REP4-030 p. 2-33]) *“There is a natural variation in groundwater and surface water levels. Monitoring between autumn 2018 and spring 2019 showed a variation of approximately 0.8m from 67.7m aOD to 68.5m aOD at WS09...”*

However, the on-site groundwater monitoring report ([AS-022] pp 3) shows that variation at WS10 and at the actual archaeological site immediately adjacent to WS09 varied by 0.9m from 67.62 to 68.51 aOD and 67.70 to 68.59 aOD respectively: Taking the outer limits of these three points suggests in the immediate cluster as from 67.62

to 68.59 aOD – potentially a difference of almost 1m, rather than the 0.8m suggested.

The Applicant goes on to state that “*Groundwater levels fluctuate in the underlying aquifer and are generally above 68m aOD, although could potentially drop below the upper level of the Mesolithic deposits layer (and towards 67.5m aOD) for a number of months in a natural drought (paragraph 2.7.1). It is therefore agreed that the Mesolithic deposits are usually below the water but water table lowering below 67.85m aOD would not be uncommon.*”

But no consideration has been given to a number of key issues:

- To what extent the 2018 levels – at over 0.2m below 67.85 at the site – represents a ‘drought’
- The actual ‘number of months’ that the watertable fell below the Mesolithic levels
- What proportion of the known or potential extent of the Mesolithic deposits (see below) – or any later deposits – would have been affected.

Overall, however much the Tier 2 assessment may be in line with procedural steps, in this case it has not gathered the necessary data to make a properly informed judgment of the likely effects of any relatively minor (or more severe) changes that the works on the scheme might trigger. Nor has any consideration been given to how the vulnerability of the site to hydrological change might be affected by the climate trends reported in the main hydrology report.

What the assessment does indicate – despite all its shortcomings – is that

- the Blick Mead site as recorded lies within a substantially fluctuating watertable by up to 1m per year and probably more in the driest conditions within this variation a significant part of the deposit where waterlogged remains survive or partially survive is within the zone that is above the water

	<p>table for significant periods</p> <ul style="list-style-type: none"> • quality of preservation in the ‘waterlogged layers’ as described is variable • survival may depend heavily on the varying matrices of deposit as well as hydrological fluctuation • both the archaeological horizon and the fluctuations in hydrology vary significantly across the area studied to date • these factors indicate a very complex 3D pattern of survival and vulnerability. <p>In these circumstances with at least some preservation being on the cusp of being lost, it would appear that a significant proportion of the upper levels of the Blick Mead site where preservation of organic materials still survives are very vulnerable to change. Such vulnerability is not just down to the varying height of the water table, but also the recurrent periodicity, year-on-year, when deposits are exposed above the water table, and the sediment matrix of an preserved material. The monitoring to date only demonstrates the <u>vulnerability</u> to slight change, NOT <u>resilience</u> to survive it</p>	
<p>2.1.25</p>	<p>See above: The uncertain extent of the Blick Mead site – or related sites near by or use of the areas as a sacred spring in later periods – are all uncertain.</p> <p>A precautionary approach would establish a monitoring scheme designed not only to provide 3D modelling across the known part of the Blick Mead deposits so far as those have been interpolated from bore holes and other evidence but would extend bore hole surveys across the recorded area of peat and higher subsurface ‘islands’ of higher ground on the pre-alluvial floor of the Avon valley where remain might survive.</p> <p>As surmised in the question, that could then establish the foundations of a 3D model across which the survival of organic deposits, the occurrence of indicators of human presence (eg</p>	<p>Regarding the extent of Blick Mead, this is as set out in ES Chapter 11; Appendix 11.4 Groundwater Risk Assessment – Annex 3 [APP-282; Section 2.2].</p> <p>With regard to the use of the Blick Mead area - and other similar sites in the Avon valley - as ‘sacred springs’ in the past, there is limited factual evidence for any actual sacred or ceremonial use, but extensive speculation and theorising.</p> <p>In the Heritage Impact Assessment [APP-195, para. 6.16.14], the Applicant notes that the Blick Mead site is currently an important point in the annual midwinter’s eve Amesbury and Stonehenge Lantern Procession. Organised by Amesbury Museum and Heritage Trust, a special ceremony is led by Professor David Jacques and the Solstice Fairy at the ‘warm spring’. This</p>

	<p>charcoal, vegetation disturbance, artefacts or chips thereof), and the spatial and temporal fluctuations in watertable relative to these deposits could be monitored as a 3D model.</p>	<p>recent tradition started in 2011, six years after excavations began at Blick Mead.</p> <p>The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors, the lowest groundwater levels on record, from the 1976 drought.</p> <p>Baseline surveys to date have informed the conceptual model at Blick Mead [AS-016], and in the Chalk aquifer [AS-019] supporting the conceptual model and numerical modelling approach.</p> <p>There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the hydrology, whilst of interest to those studying Blick Mead, it is not necessary to support the Environmental Statement or examine and determine the application. Similarly, there is no reason to provide additional detailed information regarding the palaeoenvironmental potential of the site (including pollen) as this is already covered by previous publications by the Blick Mead Team and no significant effects are predicted from the construction of the Scheme.</p>
2.1.26	<p>As indicated above (Q.Fg.2.43; Q.Fg.2.44) the factors controlling the survival of organic deposits at Blick Mead is a 4-dimensional conundrum of detailed 3-D spatial variation in the deposits concerned; 3- D variation in both the height and amplitude variation of the water table; and the periodicity of such amplitude variation from year to year, related to rainfall. If this were not complicated enough, there is also significant variation in the matrix of preservation in different deposits.</p> <p>This would need to start with a new bespoke multi-disciplinary (hydrological, palaeo-environmental, geo-sedimentary and archaeological) survey to establish the foundations of a 3D model across which the survival of organic deposits, the occurrence of indicators of human presence (eg charcoal, vegetation disturbance, artefacts or chips thereof), against which the spatial and temporal fluctuations in watertable relative to these deposits could be monitored, both in 3D and through time.</p>	<p>The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors, the lowest groundwater levels on record, from the 1976 drought. The modelling approach is considered appropriate by the Environment Agency and Wiltshire Council's peer reviewers</p> <p>Baseline surveys to date have informed the conceptual model at Blick Mead [AS-016], and in the Chalk aquifer [AS-019] supporting the conceptual model and numerical modelling approach.</p> <p>There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement or examine and determine the application. Similarly, there is no reason to provide additional detailed information regarding the palaeoenvironmental potential of the site (including pollen) as this is already covered by previous publications by the Blick Mead Team and no significant effects are predicted from the construction of the Scheme.</p>

	<p>The kind of regulated control on ground water levels exercised by the Environment Agency has nothing to do with the detailed sensitive modelling required here. The challenge is not simple but requires a multi-disciplinary team of specialists as indicated above, and this would need to include specialists in different types of palaeo-environmental research (eg pollen, other plant remains, insects) to establish the basic 3D model of actual preservation.</p> <p>Part of the monitoring needs to be re-sampling deposits (spatially close to but not contaminating original sampling points (all sample holes being fully resealed) to establish a comparative basis for actual preservation (including looking at presence/density of microorganisms of decay). Because the processes of decay are potentially slow and insidious, this would need to be done over a period of years. If even after a very dry year no change was detected, and this remained the pattern the repeat sampling interval might be lengthened and geared to recorded hydrology and rainfall records.</p>	
<p>2.1.27</p>	<p>As indicated above the issue is a far more complex challenge than has been envisaged by the Environment Agency; a bespoke monitoring regime is required that properly reflects the apparent vulnerability of the site (see above Q.Fg2.43, as exp</p>	<p>See response to paragraph 2.1.26 above.</p> <p>Highways England maintains that the wetting at Blick Mead is supported by the Chalk aquifer and that the detail of the hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement or examine and determine the application.</p>
<p>2.1.28</p>	<p>HW.2.1</p> <p>The view from the road is a significant aspect of the setting of Stonehenge with the history referred to. It is also somewhat related to the Amesbury Abbey Park at its fullest extent when it appears to have been intended to facilitate an exploration from the floor of the Avon Valley to the top of King Barrow Ridge, just north of the A303, taking in a series of prehistoric monuments enhanced by carefully designed tree planting and culminating in the view from King Barrow Ridge to Stonehenge. Arguably being a designed landscape experience</p>	<p>The Applicant refutes that the linear group of barrows extending east from King Barrow Ridge that are marked by a few of the Nile Clumps have not been considered. These are considered in the HIA [APP-195] as part of Asset Group 30 the Avenue Barrows.</p> <p>With regard to Amesbury Abbey Park and King Barrow Ridge (AG26), the HIA [APP-195, p.339] notes that “<i>The prominent barrow cemetery within the Asset Group, known as ‘Seven Barrows’ at this time, is depicted as prominent mounds in illustrations from William Stukeley’s influential book on Stonehenge and were evidently clearly visible and well-known monuments in the 18th and 19th centuries. The King Barrow Ridge appears in the</i></p>

of its time, this is an even more significant expression of the aspect OUV referred to (see Q.CH.2.8 above).

The issue here is whether the specific **means** of obtaining this view is an issue of setting (to which great weight must be attached) or just an issue of visual amenity – ie the perception of the driver and passengers of vehicles as the receptors of changes in visual impulses related to development.

Although setting involves how people understand or appreciate the significance of heritage assets that does not mean that an asset's setting relies on people having access to appreciate it (strictly private grounds of a mansion are still a part of its setting even if the public never visit). Likewise, while views of assets and from them are part of how their surroundings contribute to their significance, the means by which such views are obtained are not usually intrinsically part of that significance and will mostly be entirely incidental. As observed in the question, the view will remain; what is more, if approached from the east, it would be more likely to be from the old road via West Amesbury and much less likely to be by car, and so more akin to the pre-1960s and pre-motorised transport era.

The issue is thus not the view *per se* but the experience (just as much of the cultural heritage value of an historic sports stadium is the 'hallowed turf' and the whole kinetic experience of attending a long - established social ritual). Considered from this perspective, the motorist's view (as opposed to a pedestrian's view from more or less the same spot) does have a specific cultural heritage significance of the Stones being a valued landmark on a journey regularly experienced – sometimes referred to as marking the traveller's arrival into, or departure from South West England. Perhaps most strongly appreciated travelling west descending King

background of a number of paintings, and several paintings of Stonehenge were made from the west-facing slopes of the ridge (see HIA Annex 7 – Influences of the monuments and landscape of the Stonehenge part of the WHS on artists [APP-202, 11 & 13], Viewpoint 3: Stukeley's Prospect of Stonehenge from the East). The barrows were incorporated into the designed landscape and parkland of the Amesbury Estate in the later 18th century, forming a viewing point for Stonehenge and its surroundings."

Citing the detailed archaeological description of the Stonehenge and Avebury WHS is presented in appendix K of the 2015 WHS Management Plan (Snashall in Simmonds and Thomas 2015), the HIA [APP-195, para. 6.3.2] notes that "*Until the 18th century the extent of woodland around Stonehenge seems to have been minimal. The clumps of trees on ridgelines which we now associate with this landscape were a product of planting in the 18th and 19th centuries. There are a number of listed buildings within the WHS and also the remains of an important park and garden at Amesbury Abbey, which once stretched as far as King Barrow Ridge. It incorporated the planting on Vespasian's Camp and the 'Nile Clumps' which date to this period"*.

With regard to the view from the road, historical prospects from and involving the turnpike road and visitors to the Stonehenge monument and wider landscape are considered in ES Appendix 6.1 Annex 7 - Influences of the monuments and landscape of the Stonehenge part of the World Heritage Site on artists [APP-202]. The modern cultural significance of Stonehenge as a motorist's landmark is evident in Edward McKnight Kauffer's 1931 Shell advertising poster which shows Stonehenge's trilithons and other stones on a mound beneath a night sky, illuminated by his car headlights [APP-202, p. 39].

The Cultural Heritage Setting Assessment [APP-218] notes, in accord with the CBA's comment and with Historic England's GPA3, that the setting of heritage assets is not dependent on public access [APP-218, para. 2.1.2].

The Public visibility of monuments is considered in the HIA [APP-195, Section 6.14], which considers which parts of the WHS are visible from which roads, PRoWs and areas of permissive open access land. Attitudes on the loss of the view of Stonehenge reported in English Heritage's Phase 1 Visitor Survey are summarised, and the public visibility of heritage attractions and free views is considered, noting that "*free' views of iconic sites can be important to local*

	<p>Barrow Ridge, this is a distinct cultural experience established in the age of motorised transport, and amongst such journeys through England punctuated by landmarks, this is one of the best known and most significant. As such it too could be seen as making some contribution to the OUV of “the influence of the monuments and their landscape settings on ... others.” The loss of this view from the road can thus be seen as a heritage issue, not just a matter of visual effects or amenity and well-being.</p> <p>However, in weighing the heritage significance of the view of Stonehenge and its surroundings from the A303, care is needed to distinguish two different heritage values:</p> <ul style="list-style-type: none"> • the specific 20th century cultural and symbolic significance for motorists that would be lost; and <p>the significance of the view of Stonehenge to appreciate the significance in its topographical and landscape surroundings which would remain, and be enhanced.</p> <p>But apart from this specific and subtle distinction in heritage significance, there is the more straightforward general loss of the view to thousands of passers-by is a clear effect in terms of amenity and visual effects; and because of the number of people who enjoy the experience, the loss is of some significance. It would equally be so for any other alternative scheme that removed the A303 from the central part of the WHS west of King Barrow Ridge.</p>	<p><i>people and visitors alike</i>” [APP-195, para. 6.14.11]. The impact and effect of the Scheme on the public visibility of monuments notes that “<i>placing the A303 in tunnel past Stonehenge (AG22) means that the ‘free’ view of Stonehenge (AG22) for people in vehicles travelling along the existing A303 would be lost.</i>” [APP-195, 9.3.25]. Impacts on cultural influences as an aspect of intangible cultural heritage, including Attribute 7, 7. The influence of the remains of the Neolithic and Bronze Age funerary and ceremonial monuments and their landscape setting on architects, artists, historians, archaeologists and others, are discussed in the HIA [APP-195, paras. 9.3.74-9.3.80], which concludes:</p> <p><i>“Overall, the existing A303 has an adverse effect. Removing the A303 from the key views which have inspired artists and others over centuries, including present-day visitors and those for whom the property has spiritual associations, would be a beneficial change. On the other hand, the view of Stonehenge from vehicles descending from King Barrow Ridge to Stonehenge Bottom is highly appreciated by many; although this view would no longer be available to motorists, visitors would still be able to appreciate it on foot, by cycle or on horseback, by using the new A303 restricted byway or other paths in the vicinity.</i></p> <p><i>Overall, it is anticipated that the Scheme would have a Negligible Positive impact on this Attribute of OUV, resulting in a Slight Beneficial effect.</i>” [APP-195, paras. 9.4.39-40].</p> <p>In terms of amenity, visual effects, and drivers’ views please see the Applicant’s Responses to Written Question SE.1.16, Written Question LV.1.30 and Written Question HW.2.1 [REP2-035].</p>
<p>2.1.29</p>	<p>The Druids are entirely free to hold their views on this matter – but no more so than other groups pagans, other religions, archaeologists, human anthropologists, other scientists, historians or anyone else who has a scientific interest or asserts a religious spiritual or cultural interest in such remains.</p>	<p>With regard to the balancing of completing interests in respect of the treatment of human remains, the Applicant refers to its previous submissions on this matter in Health and Wellbeing submissions, particularly the Highways England’s Deadline 6 Responses to the ExA’s Written Questions on Health and Wellbeing (HW2.2) [REP6-029]. In summary the Applicant considers that</p>

	<p>Legally there are two competing considerations:</p> <ul style="list-style-type: none"> • One is whether the Druids have any rights under the Human Tissues Act for reclaiming ancestral remains. A test case at Avebury some years ago show that they have no better right than anyone else who wished to claim some ancestral or un-demonstrable religious or spiritual link. • The other, stemming from the Section 9(8) and Section 5(4) of the Planning Act 2008, is the provision under NSPNN paragraph 5.140 “to deposit the archive generated in a local museum or other public depository willing to receive it” The archive in this sense means all the materials collected as well as records made. This is further entrenched legally by the provisions of the draft DAMS. 	<p>the dDCO and the DAMS [REP7-019] provide a proportionate procedure that respects both human rights and archaeological interests.</p>
<p>2.1.30</p>	<p>A further consideration is the need to conserve archaeological remains for the benefit of future generations under paragraphs 5.122 and 5.129 of the NPSNN and the WHS Management Plan (<i>passim</i>). Reburial of remains would deprive archaeologists of the ability to go beyond the forms of research currently available to address at some future date with new or better scientific techniques the sort of research questions that the ExA has posed in Q.CH.2.9 above.</p> <p>The Applicant ([REP4-030 Appendix B) has criticised Mr Lambrick’s oral submission about the need for a precautionary approach in respect of these policies, stating that</p> <p><i>“It is an unpersuasive position to assert that the Scheme should be prevented from being progressed in the face of a speculative argument that future technology may discover more information in this area of the WHS. This is particularly the case having regard to the technology which is already available now, the</i></p>	<p>The Applicant acknowledges the CBA’s comment that the archaeological evaluations carried out in respect of the Scheme are ‘reasonably thorough fieldwork based on geophysics, ploughzone archaeology and evaluation’ and this evaluation supports the application.</p> <p>However, in responding to this comment, the Applicant considers that the quoted passage has been misinterpreted and taken out of context. The Applicant acknowledges that research in archaeological science is constantly evolving and respects the advances that have been made. Moreover, (and as was stated by the Applicant in text from REP4-030 Appendix B which has not been quoted by the CBA) the Applicant has built into the Scheme via the DAMS the ability to allow for archaeological remains that are excavated as part of the Scheme works to be preserved for future analysis. Moreover, the thorough fieldwork upon which the Scheme is based and will be adopted throughout the operation of the Scheme takes an appropriate and proportionate approach to currently available technology whilst also preserving excavated remains for future analysis if relevant advances in archaeological science and techniques are made.</p>

	<p><i>comprehensiveness of the assessment undertaken and the mitigation measures in place in the Detailed Archaeological Mitigation Strategy (DAMS) [REP2-038].”</i></p> <p>In fact Mr Lambrick made no such assertion and had simply pointed out that in the context of a World Heritage Site an especially precautionary approach is needed in the light of NPSNN paragraphs 5.124, 5.129, 5.131 and the WHS Management Plan 2.3.1 etc. The CBA has sought to highlight the inherent uncertainties in archaeological endeavour, and the despite a reasonably thorough fieldwork based on geophysics, ploughzone archaeology and evaluation, how massive uncertainties remain, not least in respect of human burials. The Applicant’s statement displays an alarming degree of complacent self- satisfaction and overconfidence that lacks credibility: it is perhaps above all in scientific techniques now available for investigation human remains that the greatest advances have been made, not just in enhanced paleo- pathology, but also ancient DNA and radio isotope investigations. Advances in microscopy, digital data handling and imaging techniques add further still. When it is so obvious that the techniques available now are so much more varied and informative now than was the case 10 20 or 30 years ago, it is short-sighted to suggest that that potential for future technology to discover more information in the WHS it is merely “<i>speculative</i>”. If archaeologists had always displayed such self- satisfied confidence in the current technology and comprehensiveness of their own methodologies, they might hardly have advanced beyond what William Stukeley – a pioneer of his day – achieved in the 18th century.</p>	<p>The Applicant respectfully states that the point being made in REP4-030 Appendix B, and reiterated here, is that if we are to always hold off from progressing developments on the hypothetical possibility that future research might lead to more information then no infrastructure would ever be delivered, despite the identified and recognised need for it.</p>
<p>2.1.31</p>	<p>LV.2.1</p> <p>The scheme has not sought to avoid known concentrations of archaeology so much as avoiding physical disturbance of</p>	<p>The Applicant restates that the design has been specifically chosen to limit the landtake for the construction of the Scheme both within the WHS and outside of it. The Scheme avoids known funerary and ceremonial monuments and has been designed to minimise landtake and the loss of archaeological</p>

scheduled ancient monuments (though noticeably not the same monument just beyond the limit of scheduling); this is very different from 'known concentrations of archaeological remains', which patently include those revealed by ploughzone sampling and trench evaluations that the scheme does not avoid. Nor does it avoid the setting of numerous known monuments.

As observed in our main statement [REP2-070], the CBA has maintained a long interest not only in Stonehenge as one of Britain's foremost monuments and heritage attractions, but also in relation the pace of research and new discoveries in the WHS. The last 15 years since the last inquiry into a proposed tunnel for the A303 has marked not only an exceptional wealth of transformative new discoveries, but also a blossoming of fresh ideas and thinking about how the landscape developed and how it was used and what it meant to people.

The approach adopted by the Applicant is to be of the moment, not allow for new ideas that in some cases are still developing or others not yet formulated; those referred to below are cases in point (that referred to in paragraph 59 of our main submission was included in error and should be ignored.)

The topographical setting of monuments, the night sky and the movement of celestial bodies are the aspects of the setting of all the monuments in the WHS that have changed least. This gives them a special pristine quality to these aspects of setting where harm has been avoided. As explained in the case of the settings of Blick Mead, Vespasian's Camp and the Amesbury Abbey RPG, changes to topography in key places can be very harmful – and in those cases the scheme will substantially exacerbate the existing harm, while in the western junction and approaches a whole new array of extensive change would for the first time be introduced.

ii.

The CBA has previously highlighted the importance of this area

remains within the WHS. The archaeological remains that will be removed by the construction of the Scheme do not 'make a significant contribution to the OUV of the WHS' such that the integrity of the WHS would be diminished by the removal of these remains. Regarding the setting of assets and Asset Groups, these are considered both in the Setting Assessment [APP-218] and the HIA [APP-195]. The landscape design of the Scheme has been sensitively designed in order to integrate the Scheme into the existing landform and to remove the sight and sound of traffic from much of the WHS landscape, a key aspiration of the 2015 WHS Management Plan.

The Applicant has previously responded with regards to similar comments regarding 'new ideas that in some cases are still developing or others not yet formulated' at [REP7-021; response 40.1.1]. In summary, the Applicant can only take account of publicly available, published, peer-reviewed studies.

With regards to 'the topographical setting of monuments, the night sky and the movement of celestial bodies' the HIA [APP-195] has fully considered all of these aspects in relation to assets and Asset Groups that contribute to the OUV of the WHS. It is not correct, however to say that these 'are the aspects of the setting of all the monuments in the WHS that have changed least' or that 'this gives them a special pristine quality to these aspects of setting where harm has been avoided.' Section 6.4 Historic Landscape context of the HIA [APP-195] and the Setting Assessment [APP-218] indicate the wide variation in terms of the preservation of monuments across the WHS and their settings including the destruction of monuments for modern agriculture and the significant changes to the landscape through post-medieval and modern agriculture and estate management.

See response to paragraph 2.1.7 above with regards to the settings of Blick Mead, Vespasian's Camp and the Amesbury Abbey RPG.

(ii) The Applicant has responded to the Second Written Question LV.2.1 (ii) in detail in its Responses to the ExA's Written Questions-Landscape and Visual (LV.2) [REP6-030]. The Applicant has also previously responded [in REP-013] to the Written Representation by the CBA [REP2a-005].

(iii) The Applicant has responded to the Second Written Question LV.2.1 (iii) in detail in its Responses to the ExA's Written Questions-Landscape and Visual (LV.2) [REP6-030].

which is in some respects conformed by the survey and evaluation results [REP2a-005] and see below

ii.

The CBA has previously highlighted the artificiality of assessing relationships between monuments and their place in the topographic landscape as static clusters of monuments despite their not being created at one time. They have been perceived (largely arbitrarily) as single block, when in fact they exhibit complex alignments and relationships that evolved over time. This is especially true of long barrows that mostly predated the later accumulation of later Neolithic and Bronze Age barrows. The complexity of teasing this out and working out what relationships could have existed is not simple; but it is relevant.

It is worth noting that the Historic England research report *“Stonehenge World Heritage Site Landscape Project: Lake Barrows, The Diamond and Normanton Gorse”* (Bowden, M. Field, D. and Soutar, S 2012) made a comparable observation to this, including the possible continuance of the head of this dry valley as a focal point into the Bronze Age with a series of barrow cemeteries surrounding it and the Wilsford Shaft located in the head of the valley.

iii.

As Dr Garwood’s paper indicates, ideas about this are also not static but reflect a continuous development of appreciation and understanding. The Winterbourne Stoke Crossroads cemetery is not inter-visible with Stonehenge, but certainly has other potentially significant alignments.

The Applicant [REP4-30 p2-16] was dismissive of Mr Lambrick’s suggestion that the segmented ring ditch and another penannular ring ditch along the ridge to the SW might be deliberately sited on the alignment of the Long Barrow and/or cemetery, but only on the defensive grounds that they

(iv) The Applicant has responded to the Second Written Question LV.2.1 (iv) in detail in its Responses to the ExA’s Written Questions-Landscape and Visual (LV.2) [REP6-030]. Regarding the ‘ring ditch along the ridge to the SW might be deliberately sited on the alignment of the Long Barrow’ – see response H above. Regarding the ‘three small potentially segmented or hengiform ring ditches identified from cropmarks and/or geophysics (one within the main compound) which appear to be aligned on the SW end of the Long Barrow and on the line of a subsidiary ridge to the west’, the Applicant is unsure precisely which monuments the CBA are referring to, but would point out, as the CBA know, that many Asset Groups follow ridgelines. The Applicant has not just looked within the WHS boundary, or just used previous Asset Group interpretations, but has included Asset Groups beyond the WHS boundary in the HIA [APP-195] and developed its own outlines for the Asset Groups, based on looking at the evidence, and in consultation with HMAG.

(v) The Applicant has responded to the Second Written Question LV.2.1 (v) in detail in its Responses to the ExA’s Written Questions-Landscape and Visual (LV.2) [REP6-030]. With regards to the openness of the landscape during the period when the monuments were constructed and their inter-visibility, that is why we have used a bare earth model (also see response G above).

(vi) The Applicant has responded to the Second Written Question LV.2.1 (vi) in detail in its Responses to the ExA’s Written Questions-Landscape and Visual (LV.2) [REP6-030]. The Applicant has also previously responded [in REP-013] to the Written Representation by the CBA [REP2a-005].

were not part of the approved static grouping of monuments agreed with consultees. Another possible alignment worth noting is that of three small potentially segmented or hengiform ring ditches identified from cropmarks and/or geophysics (one within the main compound) which appear to be aligned on the SW end of the Long Barrow and on the line of a subsidiary ridge to the west. Neither of these is especially convincing but they follow ridges and both the Normanton Down and King Barrow Ridge cemeteries exhibit rows of monuments roughly at right angles to the main linear cluster.

Part of this challenge is not just to look beyond the WHS boundary (and static interpretive constructs) but to ignore it and to look at the evidence.

iv.

We agree this aspect of setting would be assisted by use of individual view sheds for monuments – and in view of the complexity of monument clusters, the number these might reasonably have been done by selecting the main examples of different types and periods covering the full area of such clusters and outliers. It is clear that linear (and other) barrow cemeteries developed through time and those in the Stonehenge WHS all exhibit long periods of development in which changes of orientation of alignments seems to be evident.

While intervisibility is not the only for assessing the setting of such monuments, their siting and spatial arrangements do suggest that this was important, and for some areas there is palaeo-environmental evidence of a relatively clear landscape, as explained in Historic England's report on King Barrow Ridge:

Environmental evidence suggests that large natural clearings or glades of grassland, scrub and some trees were a natural part of an extensive open forest which stretched across the southern English chalklands in the early post-glacial period (Allen & Scaife 2007, 25). This openness, with the opportunities for

	<p><i>hunting and gathering it provided, attracted Mesolithic communities who constructed what is perhaps the first monument in the Stonehenge landscape: the post holes in what was later to become the Stonehenge car park (Vatcher & Vatcher 1973; Young et al 2009, 155).</i></p> <p><i>It may also be a contributing factor to the density of later, Neolithic and Bronze Age monuments. Soils buried beneath Amesbury 42 probably supported grassland for some time prior to construction of the long barrow (Richards 1990, 98). The buried soils along the Ridge indicate a predominantly open landscape by the later Neolithic, probably lightly grazed or browsed and including some shrubs (Cleal & Allen 1994, 82). Some shade or woodland is also suggested by molluscan evidence from the Coneybury henge (Richards 1990, 157). The large number of round barrows constructed in an open established downland landscape indicates that any remaining woodland was probably cleared by around 2000BC (Allen & Scaife 2007). The degree of land-use on the Ridge appears to have intensified during the Early Bronze Age, when molluscan evidence suggests more control of stock within a managed grazing regime (Cleal & Allen 1994, 82).</i></p> <p>(Sharon Bishop (2011) <i>Stonehenge World Heritage Site Landscape Project: King Barrow Ridge</i> Historic England Research Dept Rept 83-2011, p5)</p> <p>v.</p> <p>The CBA entirely agrees with these observations – and would draw the ExA’s attention to our submissions that have highlighted this (eg [REP2a-205]).</p>	
2.1.32	<p>LV.2.2</p> <p>Agreed: there are several aspects of landscape that would be substantially changed:</p> <ul style="list-style-type: none"> • Massively increased overall footprint of the proposed junction as compared with the present 	<p>Question LV.2.2 is regarding the proposed Longbarrow junction.</p> <p>The Applicant has set out within the Landscape and Visual Impact Assessment [APP-045] that Longbarrow junction would be “large scale infrastructure” [APP-227, page 15] and whilst the Junction would be of an increased footprint, it would be at an increased distance from the WHS than the existing roundabout and without the lighting, such that these aspects must</p>

	<ul style="list-style-type: none"> • Introduction of large structures into the landscape • Changes to topography from the cuttings • Introduction of new uncharacteristic alignments of fields in between the arms of the junction losing the existing field pattern over a very large area <p>Introduction of numerous hedges and tree plantings transforming the openness of the landscape</p>	<p>be balanced with the increased size of the junction. However, the siting of Junction is within a part of the landscape which is already characterised by a geometric pattern of the A303 and the A360, albeit of a smaller scale, such that the Junction is being introduced into a part of the landscape which is already characterised by road infrastructure.</p> <p>The Applicant also acknowledges that there would be changes to topography from the cutting [APP-227 page 15] but OEMP [AS-085] P-PWS06 requires the landscape earthworks at the new Longbarrow junction to sympathetically integrate the junction with the existing rolling landform. The field pattern is 20th century and represents an already reorganised landscape. With reference to the Cultural Heritage Assessment [APP-217] significant effects are not predicted to the historic landscape covering Longbarrow junction.</p> <p>The proposed hedges and trees are not uncharacteristic of the landscape, with the existing A303 on the approach to Longbarrow roundabout being bordered by hedgerows and trees, as well as woodland (adjacent the A360 and to the north of the A303). Whilst an open landscape overall, it is still one with vegetation cover and the Scheme design, as indicated on the Environmental Masterplan [APP-059], reflects and responds positively to the existing vegetation cover, to integrate the Scheme.</p>
<p>2.1.33</p>	<p>LV.2.3</p> <p>By my rough calculation, at Chainage 7200, the cutting is 35m wide and 11m deep, with a width of 60m across the embankment tops. At that point, the ex A303 is only 20m from the permanent fence line and the edge of the embankment, and only 35m from the edge of the cutting.</p> <p>These questions and observations highlight the substantial intrusion of alien new structures into the WHS on a completely unprecedented scale. The green bridge may be designed to limit visual intrusion through planting but it is likely to have little or no effect on noise intrusion, and no consideration has been given to air quality emissions at the tunnel portals or along the retained cuttings</p>	<p>Green Bridge no.4 within the WHS has been designed to limit visual intrusion by its siting and position within the landscape, such that OEMP [AS-085] reference D-CH23 requires the finished ground level of Green Bridge no.4 to replicate existing ground levels, subject to the limits of deviation and that the environmental masterplan indicates extensive new chalk grassland along both sides of the western approach cutting and Green Bridge no.4e.</p> <p>In terms of noise intrusion, Green Bridge no. 4 is specifically part of the mitigation incorporated within the design to mitigate traffic noise from the Scheme through the WHS, as set out in paragraph 9.9.80 of the ES [APP-047]. This is in addition to the mitigation measures committed to in the OEMP: D-NOI6 requiring the use a noise absorbent finish at the entrances/exits of the tunnel and Green Bridge Four; and D-NOI5 requiring the surface finish of the retaining walls at the approaches to the tunnel portals to be designed to reduce the reflection of noise.</p>

		<p>As set out in paragraph 5.9.45 seq. of APP-043 (ES Chapter 5): Air Quality, the consideration of tunnel portals within the air quality assessment (scoping report paragraphs 6.1.54) relates to how pollutants (i.e. nitrogen dioxide (NO₂) and particulates (PM₁₀)) are dispersed in ambient air outside the tunnel. As there are no relevant air quality receptors (i.e. locations where air quality objectives apply) in the immediate vicinity outside the tunnel portals then tunnel portal modelling is not required. The closest relevant receptors are located approximately 2km at the western end of the tunnel and 400m at the eastern portal. This approach was discussed with Wiltshire Council on 24th November 2017 and further on 11th September 2018. To put these distances into context, relevant receptors are not considered at distances of more than 200m from roads as concentrations trend towards background concentrations without notable contributions from roads (e.g.DMRB air quality guidance). The DMRB distance of 200m also applies to tunnel portals with research findings identifying that the impact of portal emissions typically only extends up to about 100 to 200m (e.g. Ref 5.30 of the ES). Even if receptors were closer to the tunnel portals, this type of additional portal modelling is only important in areas of potentially poor air quality. The locations of the tunnel portals are not located in areas of poor air quality. The emissions of air pollutants from the Scheme tunnel portals are therefore not considered to be potentially significant for air quality sensitive receptors outside the tunnel.</p>
<p>2.1.34</p>	<p>These points apply in relation to both the construction and operational phases of the Scheme.</p> <p>The CBA would add a more general comment that the approach to assessment has focussed on receptor-specific locations, based on standard DMRB approaches, not a landscape-based approach to the concept of tranquillity as a key example of EIA impact interactions operating at an area scale of kinetic movement through the landscape, not point by point receptors.</p> <p>One of the effects of the scheme would be to open up larger areas of the WHS to public access which is an objective of the WHS Management Plan. It is obvious that relative to the scheme some parts of the WHS would gain in tranquillity but others would not, and</p>	<p>The landscape and visual impact assessment has assessed tranquillity in respect of landscape character areas, both large and local scale extents within APP-227, and as such a landscape based approach has been undertaken.</p> <p>As discussed with The Inspectorate at a post-Scoping Opinion meeting on January 30 2018, the consideration of tunnel portals within the air quality assessment (scoping report paragraphs 6.1.54) relates to how pollutants (i.e. nitrogen dioxide (NO₂) and particulates (PM₁₀)) are dispersed in ambient air outside the tunnel. As there are no relevant air quality receptors (i.e. locations where air quality objectives apply) in the immediate vicinity outside the tunnel portals then tunnel portal modelling is not required. To confirm this is the case the closest relevant receptors are located approximately 2km at the western end of the tunnel and 400m at the eastern portal. This approach was discussed with Wiltshire Council on 24th November 2017 and further on 11th</p>

	<p>some would be reduced.</p> <p>We would also draw attention to the broadness of the concept of tranquillity, and while we accept that noise, visual busyness, light interference etc are all contributory, other senses need to be considered as well, and there remains no mapping of air quality changes – especially at the tunnel portals, retained cuttings and green bridges which are within a short distance of several important visitable monuments.</p>	<p>September 2018. Paragraph 5.9.45 seq. of APP-043: Air Quality, sets out that the emissions of air pollutants from the Scheme tunnel portals are not considered to be potentially significant for air quality sensitive receptors outside the tunnel. This is also the case for the retained cuttings and green bridges which are not located in the vicinity of relevant receptors for air quality.</p>
2.1.35	<p>LV.2.6</p> <p>The CBA would support approval by Wiltshire and Historic England</p>	<p>The Applicant considers approval of the landscaping scheme by the Secretary of State, in consultation with Wiltshire Council and Historic England as provided for in Requirement 8, Schedule 2 of the dDCO [REP6-005] (and as explained in response to written question LV.2.6 [REP6-030]) is appropriate.</p> <p>In addition, the Applicant has set out in section 4.5 of the OEMP [REP6-011] those who will be consulted upon and that the Authority will establish a Stakeholder Design Consultation Group (SDCG), which includes Wiltshire and Historic England. The SDCG will be consulted on the detailed design of elements of the Scheme within the WHS as set out in 4.5.3 seq. and this is considered appropriate for the delivery of the Scheme.</p>
2.1.36	<p>NS.2.1</p> <p>Stonehenge is by far the most heavily visited stone circle in the UK and is constantly bustling with tourists and buggies for the less abled etc. On this count alone the majority if not all other stone circles are more tranquil; many of them far more so. Stonehenge is also far from being the only well-visited stone circle or henge monument adjacent to roads.</p> <p>The CBA would suggest that this question can only be properly considered relative to public experience at Stonehenge and other prehistoric monument complexes, especially stone circles and henges – not only (most obviously) Avebury, but also many others. While not being a systematic sample of all visitors (many do not engage with online reviews) a quick examination of the number of</p>	<p>The Applicant has not reviewed Google, Facebook nor TripAdvisor as part of its assessment on tranquillity, but instead looked at published sources of information on tranquillity as well as the Applicant's own field work during winter and summer conditions as set out in paragraph 7.6.75 seq. of APP-045.</p> <p>The WHS Management Plan page 156 (included in the Applicant's review) notes in relation to roads and traffic that "they have a negative impact on the setting of monuments and the character of the wider landscape through loss of tranquillity."</p> <p>Please see Highways England's response to Written Question Ns.2.1 [REP6-031] which explains that with regard to the Stones, and their immediate vicinity, it is agreed that tourists are an important noise source which would have an impact in terms of the level of tranquillity experienced at this location.</p>

'Google' online review scores and a rapid examination of the nature of comments – especially low scoring ones – gives some indication of how heavily different monuments are visited and the nature of concerns that relate to tranquillity – especially as a whole experience (ie what contributes to or detracts from a sense of calm peacefulness remoteness etc)

- Stonehenge stands c.175 metres from the A303, scoring 4.5 from 26,000 Google reviews
- Avebury with a moderately busy local 'B' road bisecting the monument scores 4.6 from 4,000 reviews
- The Ring of Brodgar 30m from a quiet B road scores 4.6 from 860 reviews
- The Rollright Stones Kings Men stands within c. 8m of a busy C road and is well visited with a score of 4.5 from 626 reviews.
- The Stanton Drew stone circles and cove, c380m from a moderately busy B road has a score of 4.5 from 236 reviews
- Arbor Low stone circle henge c. 1km from a fairly quiet A road scores 4.5 from 223 reviews
- The impressive Mayburgh henge within 40m of the M6 at Penrith scores 4.1 from 80 reviews
- Durrington Walls henge (within the Stonehenge WHS) which is bisected by a moderately used B road scores 4.8 from 16 reviews

What is most striking is that a small non-random sample of the more negative as well as more positive reviews suggests that traffic intrusion is not a big issue for ANY of these monuments. For Stonehenge overcrowding, cost of entry and lack of access into the Stones (ie the general intrusiveness of do's and don'ts and visitor pressure) are by far the major concerns related to overall

As a result, the improvement in tranquillity due to the major reduction in traffic noise at the Stones and in their immediate vicinity as a result of traffic using the existing A303 being redirected into the tunnel, will be less than at locations in the wider WHS where traffic noise from the A303 is dominant. Nevertheless, the major reduction in road traffic noise, combined with the removal of the sight of road traffic due to the tunnel (given that tranquillity levels are based on not just noise, but other factors such as landscape and visual impacts), cannot have anything other than a beneficial effect on tranquillity at the Stones and their immediate vicinity.

Reviews of heritage sites and in particular comments about tranquillity at these sites demonstrate that tranquillity matters to visitors and may indicate a willingness to incur some cost or inconvenience to visit at more tranquil moments. The lack of reference to traffic intrusion in these reviews in no way negates the finding that visitors and non-visitors alike would be willing to pay to remove the road from a section of the WHS.

The valuation survey was designed to provide impartial evidence-based advice on the Value for Money of removing the road from a section of the world heritage site, and so constructed a valuation question based upon that scenario. It was essential that the survey focussed explicitly on this change in the nature of the WHS, and not on the value (or tranquillity) of the WHS in general, to ensure it remained relevant to the investment decision and avoided valuing the WHS in general.

To ensure the survey asked respondents to consider appropriate attributes of this change, evidence was gathered from the consultation, focus group, scoping, piloting and ex-post testing undertaken for the 1998 survey by Maddison and Mourato. A pilot was also run of a draft survey, which included in-depth de-briefing on all parts of the survey. This confirmed it was appropriate to include changes to tranquillity of the site as part of the valuation exercise.

tranquillity; and of the more positive comments, many make reference to visiting at times when the site is least busy with visitors. It is noticeable that these and other scores for stone circles and henges are all very similar whether or not they are close to roads, and other factors predominate. The relatively low score for Mayburgh henge has nothing to do with the nearby M6, but is mainly due to a number of visitors thinking that it only consisted of the central standing stone, not the truly remarkable enormous bank of collected river cobbles surrounding it.

It appears no attempt has been made by the Applicant to interrogate or sample the 26,000 review posts on Google or the larger numbers on Facebook or others on Tripadvisor etc to establish the extent to which either visitor crowding or the A303 is a major problem for tranquillity of Stonehenge (or its surroundings): superficially, it appears that crowds and queues – and recommendations to avoid them

– are far more common comments than the intrusion of the A303 (including an instance commenting on quietness and tranquillity first thing in the morning before the main bulk of tourists arrive).

Although the Contingent Valuation study was validated by independent assessors, this was done on the inherent premise of a 2.9km A303 tunnel past the Stones and its effects, NOT an independent question about the importance of tranquillity as part of the heritage and landscape qualities of Stonehenge or the wider WHS, or how tranquillity compares in importance with other factors affecting visitor experience.

While the study report (eg para) may have been taken to remove a range of biases and standard problems associated with Contingent Valuation studies, it did not address – and was not intended or designed to address – the biases and assumptions that are inherent in the basic hypothetical scenario that it sought to examine:

The construction of a dual carriageway between Amesbury

and Berwick Down, including a 2.9km tunnel underneath the WHS with both portals located within the WHS but out of sight from the stone circle. By removing the road from the central portion of the World Heritage Site, those using the road will no longer be able to see Stonehenge while driving and those visiting the site will no longer be affected by the road. To either side of the tunnel itself, widening the road and constructing tunnel portals will have adverse impacts on other monuments (e.g. burial sites) within the WHS.

Some inherent biases arise from the wording of this hypothetical scenario:

- The first sentence referred to the stone circle, but not to the existence of other monuments in the central portion of the WHS
- The second sentence was ambiguous in referring to 'those visiting the site' meaning Stonehenge not the World Heritage Site;
- The final sentence was erroneous and highly biased in referring to
 - 'widening the road' (as if just adding a lane to the A303);
 - 'either side of the tunnel itself' not at each end;
 - not referring to the width and length of cuttings involved;
 - not mentioning the grade-separated junctions within the setting of the WHS;
 - nor indicating the nature or scale of 'impacts on other monuments' or that this included not only impacts on their setting, but also loss of

significant known and unknown archaeology.

More serious problems arise from the deeply entrenched bias towards the whole scenario. It is stated (para) that:

“This assessment focuses exclusively on the cultural heritage impacts of removing the A303 from its current location within the WHS, in terms of noise reduction, increased tranquillity, visual amenity and reduced landscape severance.”

But this is misleading: as far as respondents were concerned, the scenario presented to them was one particular scheme (as noted above) which was taken as a given, with no option for **entirely removing the A303 from its current location within the WHS**. Not surprisingly, the results were equally inherently steered towards and used for justifying that particular vision, not any alternative scenario or any wider considerations within which to situate the hypothesised scenario.

Thus respondents were NOT asked:

- How significant a sense of tranquillity is to the character, significance and amenity of the Stonehenge WHS (as visitors to Stonehenge, to the wider WHS; or amongst the wider public how important a consideration it should be)?
- What they felt most contributed to or detracted from tranquillity at Stonehenge and in the WHS?
- What significance traffic intrusion had for them relative to other forms of intrusion on tranquillity?
- How they rated traffic intrusion relative to tranquillity at different places within the whole WHS?
- How they would rate alternative means of removing A303 traffic intrusion (including the options of either adopting a

	<p>longer, more expensive tunnel or a much cheaper surface route outside the WHS and not affecting a nationally or internationally protected landscape)?</p> <ul style="list-style-type: none"> • What they would be willing to pay (or expect to be paid) for adopting a route adding a range of extra distances/times to their journeys • How they would rate removal of traffic intrusion relative to other objectives of the WHS Management Plan, inclusion retaining its archaeological integrity • To consider, as tax payers, what a substantial saving on the £1.7bn price tag might best be spent on: a) to relieve traffic and improve transport infrastructure or more generally? OR b) for any other purpose. <p>nd Even s beyoong n so l derived from the equivalent number of enbrr as A303 users proportional to the a subset of as a s ro four [sic] “a given amount of th e scheme is justifiable (any alternative put forward, including 14 people suggesting a longer tunnel, not being a reply to a question was treated as a ‘protest’ response. While the inherent harm to the WHS was alluded to (see above) the scheme is test and it was simply a question of whether it might be justified without reference to any inherent harm involved. (respondents a If borne out by a more systematic analysis, this would support the view that it is crowding by tourists that is the main factor detracting from tranquillity and ambience, not the A303. It certainly suggests that tranquillity would not be achieved as a result of the scheme.</p>	
<p>2.1.37</p>	<p>NOTE: Although the effects may be rather different, the issues of vibration and settlement relative to archaeology raise much the same broad principles of archaeological sensitivity and risk assessment and management parameters. The following observations broadly apply to both Ns.2.7 and Ns.2.8 and for the</p>	<p>As set out in the Applicant’s response to Written Questions Ns.2.7 and Ns 2.8 [REP6-031], it is agreed that there are no standard thresholds for construction vibration levels or tunnelling induced settlement levels significantly affecting archaeological assets. There is also agreement between the Applicant and CBA that sensitivity of archaeological assets will vary and therefore protection of assets needs to be considered on a case-by-case basis. This approach is</p>

sake of space we have not sought to repeat them for each question

The levels at which significant effects might occur depend on the archaeological remains affected, including objects as well as structures and deposits. This in turn relates to their condition in the ground. Their sensitivity and vulnerability to vibration and settlement effects will obviously differ both according to their inherent character and the specific ground conditions in which they survive.

So far as the CBA is aware, there are no general standards for judging the degree of either vibration or settlement would be considered 'significant,' and so far as there have been previous studies they almost all relate to urban structures and deposits in relation to railway or metro tunnels with complex overlying mixed geology and made ground.

Some technical studies of earthquake effects may also be relevant, but again they are not specific to or provide any direct read-across to the situation of this scheme.

For both vibration and settlement effects the engineering profession has developed standard and often sophisticated predictive modelling techniques (including 3D computerised modelling) that could and should be applied to map in three dimensions the likely effects (of other submissions). Broadly this would address three key factors:

- The hydro-geological, physical and geo-chemical composition of the geological strata being bored (including susceptibility to fracturing, compression or other movement)
- The scale, form and 3D location of the structures concerned
- The method of their installation and the physical and other forces that they exert on the geological strata being bored

The potential impacts on archaeology depend on the predicted magnitude of any effects within a 3D zone above and/or adjacent to the structures concerned, out to the limits of any influence. The

set out in MW-NOI5 of the Outline Environmental Management Plan (OEMP) [REP6-011] which requires the main works contractor, in consultation with the members of HMAG to, identify any potential sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. Should assets be identified, actions to control or mitigate impacts (including monitoring) shall be consulted upon with HMAG and implemented as appropriate.

Regarding the need for a 3D model at this stage, please see the Applicant's response at item 6.4.17 in the Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-021] and also notes that this has not been considered necessary at the pre-consents stage of comparable major tunnelling infrastructure projects, (Crossrail, Silvertown Tunnel, Thames Tideway Tunnel) including in locations with chalk.

The Applicant has responded previously regarding the sensitivity of the archaeological remains above the tunnel at ISH5 (as summarised in Written Summaries of oral submission at Issue Specific Hearings - Noise and Vibration [REP4-033; agenda item 6 (iii)]), including in respect of barrows that have been completely or partially excavated in antiquity and modern times and other disturbance during WWI, by animal burrowing and by modern agricultural practices.

significance of any effects depends not only on the scale, duration and character of any movement, but also the sensitivity and vulnerability of any archaeology affected (including as yet undiscovered remains). The methods of monitoring and thresholds for any measures to take protective action need to be attuned to the most sensitive/ vulnerable remains of significance liable to be affected.

There are no established standards for what is judged as 'significant' and so far as there are recorded instances, any lessons need to be adapted to the specific circumstances of this scheme. This is fundamentally a matter of risk assessment, and the CBA suggests that the context of such an assessment must take account of the broad parameters of accuracy to which archaeologists excavate and record remains – especially those that are delicate intricate and complex – and examples of worst case scenarios in terms of sensitivity of deposits, structures and objects to being distorted moved or displaced.

Excavation and recording tolerances

The range of tools that archaeologists use for controlled excavation, aiming at achieving accuracies ranging from a few centimetres to less than a millimetre, range from

- large excavators working with toothless buckets used for stripping topsoil, normally controlled for exposing final surface to around 1-3cm accuracy
- large hand tools (mattocks, shovels etc) for rapid hand digging normally controlled to similar levels of accuracy
- the ubiquitous pointing trowel for general purpose careful excavation controlled to around 0.2- 0.5cm accuracy
- small specialist delicate tools (eg plasterer's leaves, paint brushes, etc) for delicate field or coarse laboratory

excavation working to c.1-5mm accuracy

- smallest specialist delicate tools (eg scalpels, dentists' probes and drills, air pressure tools etc) for careful laboratory excavation to c.0.1-1mm accuracy.
- the finest detail 'excavation' is undertaken microscopic level to expose fine detail of objects or clean encrusted dirt from objects using other specialist conservation tools working to even finer accuracies.

Paragraphs 6.3.48 and 6.7.14 of the revised draft DAMS specify that all recording will be levelled to Ordnance Datum metres to two decimal places. Within that general-purpose control applicable to all deposits recording is often to sub-centimetre accuracy and where especially fine detail is needed may be down to millimetric accuracy. In some cases such accuracy is achieved by photogrammetric, laser and other forms of scanning. In others blocks of material are extracted for careful excavation in the laboratory.

Examples of potentially vulnerable deposits and objects

This needs detailed consideration, but in the current scheme could for example include burials with delicate grave goods that might be displaced; timber lined or coffin graves (typical of some Beaker burials where a coffin or timber-lined cist that held the burial subsequently collapsed or partially collapsed leaving extremely loose unconsolidated fill and even voids. In this and some other scenarios of deposits exhibiting highly variable degrees of consolidation movement could in principle include transposition of small objects from one position or stratum to another. Remains potentially especially sensitive to these effects are objects such as whole but cracked pots; and high status composite objects originally composed of a mixture of materials, some of which survive (eg metal, stone, ceramic, bone, antler) and others do not

	<p>(eg wood horn, leather, string, hair, hide, wicker etc). This also applies to relationships between objects relative to decayed containers (eg arrows in a quiver or just arrowheads in a bag?) and decayed bodies.</p> <p>In some cases the exact original form of objects is ONLY evident in the distribution of surviving parts of them in the ground – a classic example being early bronze age rivetted daggers, where the exact position of the rivets relative to the blade reveals the size, position and likely form of the decayed horn or wooden hilt and (for example) antler pommel, including in some cases the decorative use of rivets. Such objects are more common around Stonehenge than in most areas. The remarkable Bush Barrow burial on Normanton Down included some quite extraordinary grave goods – three bronze daggers plus rivets, two exceptionally large; the smallest with 140,000 gold studs 0.2mm diameter (evidence of child jewel-smithing); two very thin sheet gold plaques; an exotic stone mace, of which the decayed handle had been decorated with carved zig-zag bone rings.</p> <p>Unmarked by any barrow ditch or mound, the grave of the “Amesbury Archer” contained <i>“the richest array of items ever found from this period. Around 100 objects were found, including the complete skeleton of a man, three copper knives, two small gold hair tresses, two sandstone wristguards to protect his wrists from the bow string, 16 flint arrowheads and five pots. This makes the grave the richest Bronze Age find in Britain - there are ten times the usual number of finds from other graves.”</i> https://www.wessexarch.co.uk/our-work/amesbury-archer</p>	
2.1.38	<p>NS.2.7.</p> <p>NOTE: The CBA is not directly involved in discussions and is only in a position to make general comments on this is a highly technical matter, as below.</p> <p>i.</p>	<p>i. It is noted that the CBA, in comments above state that <i>‘The levels at which significant effects might occur depend on the archaeological remains affected, including objects as well as structures and deposits. This in turn relates to their condition in the ground. Their sensitivity and vulnerability to vibration and settlement effects will obviously differ both</i></p>

Any methodology needs to be applied to predict what degree of movement might occur in relation to relevant construction activities. These include:

- Piling for retaining walls, cut and cover tunnels, green bridges, bridges
- Tunnelling
- Machinery operating over haul roads and construction compounds where vibration and resonant forms of loading (eg from the speed of loaded vehicles) is likely to be linked to compression effects

This is a highly technical matter on which the CBA is not directly involved and is only in a position to make general comments. It is one of several matters on which there is little or no evidence that the Applicant has examined relevant technical research into archaeology and vibration. This includes research related to piling but also other relevant literature may include the effects of soil movement relative to cultivation and vibrations arising naturally in earthquake zones. Other than specific piling and tunnelling studies, we have previously highlighted resources such as the quinquennial proceedings of the international PARIS conferences, DEFRA research into soil disturbance and archaeology etc.

However, much relevant literature relates to urban archaeology and built structures, and any literature review needs to focus on such resources mainly to the extent that they provide a sound generic basis for reading across to the primary factors at play for this scheme, especially in relation to defining the need to obtain a full understanding of the geology as well as the types of archaeological remains potentially affected. Historic England's recently revised guidance on piling (historicengland.org.uk/images-books/publications/piling-and-archaeology/heag270-piling-and-archaeology/ March 2019) provides useful guidance on the possible

according to their inherent character and the specific ground conditions in which they survive.

So far as the CBA is aware, there are no general standards for judging the degree of either vibration or settlement would be considered 'significant,' and so far as there have been previous studies they almost all relate to urban structures and deposits in relation to railway or metro tunnels with complex overlying mixed geology and made ground'.

As set out in Highways England's response to Written Question Ns 2.7 [REP6-031], the Applicant is in agreement with this.

Although question Ns.2.7 from the ExA relates to measurement and monitoring of vibration levels, the response from CBA refers to predicted levels of vibration and therefore Highways England has considered this point in our response (please also see Highways England's response to SWQ Ns.2.7 in REP6-031). The Noise and Vibration assessment set out in Chapter 9 of the Environmental Statement (ES) [APP-047] (paragraphs 9.9.14 – 9.9.15) vibration levels have been calculated with the procedure set out in BS 5228-2 Table E.1 for vibration from the Tunnel Boring Machine (TBM) and pavement works, namely vibratory rollers and compactors.

As detailed in para 9.3.12 of the ES, based on the proposed piling method for the scheme vibration impacts from piling were scoped out of the assessment.

As detailed in the response to round 1 written question Ch.1.3 [REP2-025], haulage and compound activities are not anticipated to be a significant source of vibration. The surface of the haul roads and site compounds will be maintained in good condition as stated in the OEMP (MW-AIR2) [REP6-011]. The draft DAMS identifies a number of locations where suitable fill material on top of a protective barrier membrane will be used to bury sensitive archaeological remains to ensure that they are not disturbed during construction and to preserve them for future generations. These include areas at the Winterbourne Stoke and Countess compounds. Site specific Method Statements will be developed by the contractor which will set out suitable methodologies for filling areas without disturbing or impacting sensitive archaeological remains, and also for removing the fill at the end of construction. The Method Statements will be prepared in consultation with members of HMAG and approved by Wiltshire Council as set out in MW-CH5

effects of different piling techniques (though not on other sources of ground vibration) and concludes

Unfortunately, in England, there has been no clear requirement for archaeologists to collect piling data from redevelopment sites in any rigorous way. In many instances, evaluations have consciously avoided areas adjacent to piles because they are likely to be disturbed (Davies 2004). This results in vital opportunities to understand the past impacts of construction being missed. It is good practice for this to be a basic requirement on any excavation where previous foundations are encountered because it provides a better understanding of site conditions and the likely future potential impacts of proposed new piles.

ii.

There is much relevant technical literature on how low frequency vibration transposes into physical movement, and parameters of the generating source and receiving ground conditions (structurally and hydrologically) that largely dictate the scale of effect.

We note and support the concerns voiced by others that it is fundamental that adequate predictive modelling can only be understood with a full consideration of how vibration would be propagated the geology of the areas affected. Overall, the assessment to date has not provided the necessary predictive modelling to address this issue; even so, there is likely to be significant uncertainty.

iii.

Monitoring can only forewarn about problems arising, establish whether levels of vibration might be damaging relative to predictions and/or check that any measures to protect archaeology are effective.

of the OEMP. Toolbox talks will be undertaken to inform construction supervision staff and site operatives of the relevant procedures.

The prediction methodology for tunnelling in BS5228-2 is conservative as it is derived from worst case source data for tunnelling in rock using a hydraulic hammer. Source data for TBM works and chalk ground conditions indicates lower levels of vibration are likely to be generated.

The Applicant disagrees with the statement that no examination of relevant technical research into archaeology and vibration has been carried out. BS5228-2, the prediction methodology used in the assessment, has been approved by the Secretary of State as being suitable for the purposes of providing guidance on appropriate methods for minimising noise and vibration from construction sites. BS 5228 has been subject to independent British Standard Institute (BSI) processes which has included industry representation on the technical committee and public consultations, and independent review commissioned by DEFRA. Further literature review of its suitability is therefore not required. As set out in the Applicant's response to Ns 2.7 and Ns2.8 [REP6-031], it is agreed that there are no standard thresholds for construction vibration levels or tunnelling induced settlement levels significantly affecting archaeological assets. There is also agreement between the Applicant and CBA that sensitivity of archaeological assets will vary and therefore protection of assets needs to be considered on a case-by-case basis. Therefore, a further literature review is not required.

- ii. The Applicant disagrees with the statement from CBA that the assessment to date has not provided the necessary predictive modelling to address the issue [the level at which significant effects on archaeology might occur]. As detailed above the assessment of vibration effects from tunnelling as reported in the ES is conservative. As set out in Highways England's response to Written Question Ns.2.6 [REP6-031] vibration impacts on heritage assets are reported in Appendix 6.1 Heritage Impact Assessment [APP-195]. Supplementary detail was provided at the Issue Specific Hearings as reported in the written summary of oral submissions made at that hearing [REP4-033] 6 iii. In summary;
- the identified barrows along the route of the tunnel that could be subject to vibration effects (where the tunnel is close to the surface)

Methods will need to measure both vertical and lateral vibrations.

iv.

As above, two separate issues arise here:

- a) the positions chosen must be effective in addressing the issues and achieving standards indicated under points i) to iii) above;
- b) the need for appropriate mechanisms for protection and avoidance or reduction of the risk of damage, which should be based BOTH on a choice of techniques that are likely to minimise damage in the first place; AND on their having potential to be modified in the method of application to reduce and if possible prevent the risk of damage occurring.

These are technical issues requiring specialist analysis, and different solutions are likely to be needed for the different scenarios in which vibration effects may arise.

It is fairly obvious that as the highest risks will arise close to the source of vibration, and therefore monitoring should be focussed on transects passing close to monuments and sites of potential vulnerability, including where little archaeology is currently known but could exist. It should be noted in particular that burials have already been discovered in the general vicinity of the western tunnel approach retained cutting, cut and cover tunnel and green bridge.

Perhaps the simplest is for piling, the principle being that the need for prior archaeological investigation and recording extending to the limit of potential vibration damage, not just the limit of physical disturbance. For other sources of potential harm different solutions for enhanced protection (methods of operation and improved buffering) would be relevant. In respect of the proposed twin bore

have already been excavated, either completely or in part, and backfilled removing potentially sensitive burials and artefacts;

- The identified barrows are unlikely to contain void and have settled to their current position over approx. 5000 years;
 - Disturbance from previous/current activities including World War One airfield operations, agricultural ploughing and/or animal burrowing has occurred; and
 - Individual artefacts in the soil are usually fragmented. They are supported by the soil matrix, not surrounded by voids and therefore are much less sensitive to vibration than artefacts in the open air, display cases or with voids around them.
- iii. Please see Applicant's response to Written Question Ns.2.7 [REP6-031]. In summary, the precise details of the vibration monitoring methodology will be set out in the Noise and Vibration Management Plan required by MW-NOI3 of the Outline Environmental Management Plan (OEMP) [REP6-011]. The Noise and Vibration Management Plan will set out specific details of the vibration monitoring methodology in terms of the choice of transducers, method of coupling, measurement locations, measurement duration etc., having regard to the requirements of the relevant British Standards (BS 7385: 1993 ISO 4866:2010, and BS 5228:2009+A1: 2014). At this stage, before detailed design is complete, a commitment has been made to monitoring at the Stonehenge monument when the TBM is within 250m of the monument (MW-NOI6), due to the level of interest in the Stones. Additional vibration monitoring locations at potentially sensitive heritage assets, including barrows, will be based on the further analysis required by MW-NOI5 of the OEMP to identify any potentially vibration sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. MW-NOI5 requires the main works contractor, in consultation with the members of HMAg to, identify any potential sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. Should assets be identified, actions to control or mitigate impacts (including

	<p>tunnel, combined monitoring points for both subsidence and vibration could be considered, though the specific requirements for vibration monitoring are likely to be different to those for settlement.</p>	<p>monitoring) shall be consulted upon with HMAG and implemented as appropriate.</p> <p>See response above. In addition, as detailed in Highways England's response to Written Question Ns.2.7 the decision to implement a bored tunnel rather than a cut and cover tunnel was a deliberate design decision taken in order to preserve surface archaeology and avoid damage and disturbance as far as possible to archaeological sites, including those that contribute to the Outstanding Universal Value of the World Heritage Site. There is also mitigation embodied within the selection of the tunnel boring machine with the use of a closed-face TBM for the main tunnel construction to control excavation induced ground movement and vibration. In accordance with OEMP MW-NOI5 [AS-085], the contractor shall develop contingencies using a suite of tool box items from further investigation, assessment and monitoring during construction to identify measures to ensure the protection of heritage assets. This could range from simply slowing down the TBM to instigating ground stabilisation measures including grouting.</p>
<p>2.1.39</p>	<p>NS.2.8</p> <p>NOTE: The CBA is not directly involved in discussions and is only in a position to make general comments on this highly technical matter.</p> <p>i.</p> <p>Until there is a proper 3D predictive model of the anticipated settlement is developed (as is standard practice for many tunnelling schemes) it is hardly possible to arrive at any decision about measuring settlement and what standards should be applied; as others have argued, this in turn cannot be done without more detailed understanding of the structural qualities of the Phosphatic Chalk through which the tunnel would be driven.</p> <p>Some general points of principle can be suggested:</p> <p>a) Greater clarity about the geological and hydrogeological properties of the strata through which the tunnel would be driven, focussing specifically on those characteristics that are contributory factors to settlement risk, including how these vary along and across the limits of deviation</p>	<p>The Applicant has responded previously regarding the sensitivity of the archaeological remains above the tunnel at ISH5 Written Summaries of oral submission at Issue Specific Hearings - Noise and Vibration [REP4-033; agenda item 6 (iii)], including barrows that have been completely or partially excavated in antiquity and modern times and other disturbance during WWI, by animal burrowing and by modern agricultural practices. The Applicant has also given a response to various points raised here by CBA with respect to monitoring and impact on archaeology in response to written question Ns.2.8 [REP6-031].</p> <p>In responding to the point raised by CBA in terms of the '3D predictive model of the anticipated settlement' it is important to distinguish between the ground movement as reported in the Land Instability Risk Assessment and the separate argument that has been made about the requirement for a 3D Geology model.</p> <p>We do not agree that a proper predictive model of the anticipated settlement has not been done. The predicted effects of excavation induced ground settlement have been considered as part of a staged assessment used in tunnelling to determine the zone of influence and potential structures and</p>

of the proposed tunnel

- b) 3D spatial modelling of the predicted risk of settlement along the length of the tunnel and extending beyond the worst case limit of settlement risk for any alignment within the limits of deviation
- c) Consideration needs to be given to worst case scenarios of potential damage to archaeological remains (see below for the example of composite organic and non-organic artefacts)
- d) A monitoring regime should be adopted to meet (at a minimum) the following needs:
 - Sufficiently dense transects or grid of monitoring points to test the 3D predictive model to millimetric tolerances of settlement movement along the full length of the tunnel bores
 - Monitoring points placed sufficiently *far from* known monuments to give forewarning of any need to modify TBM progress and/or adoption other preventative measures
 - Monitoring points placed sufficiently *close to* known monuments to monitor actual settlement movement and (where applicable) the effectiveness of any prevention or reduction of impact
 - Sufficiently dense transects or grid of monitoring points to record actual settlement to millimetric tolerances along and across the length of the tunnel bores to ensure future understanding any settlement in relation to other forms of possible post-depositional changes for both known and as yet undiscovered archaeological resources that may be affected

ii.

archaeology affected during construction (see Environmental Statement Appendix 10.6 - Land Instability Risk Assessment [APP-278, Section 6.4]). The initial Greenfield Assessment was based on 2-D sections at 100m centres along the tunnel that have been interpolated to provide the zone of influence of tunnelling. This was further supported by a series of Finite Element Modelling sections at 200m centres to refine the modelling to represent the specific parameters defining the geology at these locations. Having looked at the data for the Phosphatic Chalk encountered in the Phase 6 and Early Phase 7 GI (2018), it would be our conclusion that the Phosphatic Chalk is not significantly weaker nor more variable in terms of weathering than the 'conventional' chalk encountered in the boreholes. The chalk parameters used for ground settlement assessment are conservative for the Chalk and are not inappropriate or unreasonable for the Phosphatic Chalk. We therefore do not agree that the 'current assumptions do not seem to be based on a full understanding of the geology'. Our approach is conservative, follows best practice in tunnelling and allows the 2D results to be interpolated to provide a 3D assessment of settlement.

Regarding tunnel movement monitoring stations and their installation, the draft DAMS as submitted at Deadline 7 has been revised [REP7-019; see paras. 5.2.7 – 5.2.9]. The installation of monitoring equipment and programme of monitoring to monitor ground movement above the tunnel will be included as part of the Heritage Management Plan required by item PW-CH1 and MW-CH1 of the Outline Environmental Management Plan. The Ground Movement Monitoring Strategy will be developed in accordance with best practice including the British Tunnelling Society¹ and International Tunnel Association² as part of the risk management of the works. This will include a detailed consideration of the location of monitoring with respects to the archaeology.

We do not agree that 3D Geology Modelling is necessary to understand the zone of influence of tunnelling settlement. This is not standard practice in tunnelling and has been refuted in our various responses including: the Written Summary of the Oral Submission Issue Specific Hearing (ISH) 2&3 Cultural Heritage item 7iii Detailed Archaeological Mitigation Strategy [REP4-030]; ISH 4 regarding Flood risk, Groundwater, Geology and Water under item 5.1 [REP4-032]; the response to Stonehenge Alliance at Deadline 5 [REP5-003] items 11.1.1 and 11.2.56, in our response to Second Written

The greatest risk is likely to be where the TBM would be working close to archaeological sites and monuments, especially at its shallowest levels. The current estimates of up to 2-3cm of movement is well above basic tolerances for archaeological recording outlined above; far above tolerances applied to the most significant and vulnerable objects and deposits, and those so fragile that they are lifted as consolidated blocks for laboratory excavation. It is also clear that the kinds of situation in which such considerations occur (notably burials, including richly furnished burials not marked by barrows) are an important feature of the Stonehenge WHS and the surrounding area.

Currently it seems clear that if potentially vulnerable remains were affected, significant damage could occur; but as others have noted, the current assumptions do not seem to be based on a full understanding of geology, and no 3-D modelling has been done to predict the spatial occurrence of settlement impacts relative to archaeological remains.

The proposed tunnel passes beneath or close to several scheduled monuments and other sites (it is not clear if these included full results from recent surveys) – see revised draft DAMS site 23, pp 232-7.

This includes burial mounds which have been excavated to different degrees with burials of different periods including Beaker and Early Bronze Age for which rich grave goods and objects of composite materials are relatively common. Some mounds are known to have contained multiple burials of this kind; others may contain burials yet to be discovered.

The occurrence of ‘flat graves’ not marked by barrows is also possible, and as illustrated by the evaluations these can readily occur close to in between or at some distance from known barrows.

Question under Fg.2.5 [REP6-028], and in item 6.4.17 in the Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-021]. This confirms the Applicant’s view that the information presented in the Environmental Statement is more than sufficient at this stage of the consents process and that a 3D model is not required and that:

- a. The Applicant considers that a proportionate approach has been taken to characterise the variable nature of the geology employing experts in this field, including Professor Rory Mortimore, and does not agree that a 3D model is necessary at this stage.
- b. In developing the preliminary design provided in support of the draft Development Consent Order (dDCO), the Applicant has followed best practice as embodied in the Association of British Insurers/British Tunnelling Society Joint Code of Practice for the Risk Management of Tunnel Works (ACOP) to:
 - i. Undertake hazard identification and the management of risk to ensure their reduction to a level ‘as low as reasonably practicable’ as an integral consideration in the design, procurement and construction of the tunnel works.
 - ii. Promote and secure best practice for the minimisation and management of risk as part of the Insurance of the works.
 - iii. Undertaken suitable and sufficient site investigation phased appropriately to the pertaining physical and geological environments.

Furthermore, 3D Geology models have not been provided at the consents stage for major infrastructure projects including Crossrail, Thames Tideway Tunnel and Silvertown Tunnel. Whilst the Applicant recognises the risks associated with the geology and hydrogeology at Stonehenge and the unique nature of the archaeology within the WHS, a 3D ground model is not considered necessary at this stage as it will not change the choice of a closed-face Tunnel Boring Machine as part of the risk management of the project.

Because they are so much harder to find than barrows (even with modern geophysics) they are also almost certain not to have been found by early antiquaries and archaeologists and represent a major as yet under-recorded resource, potentially more intact as a record of funerary practice than the upstanding monuments. That such unmarked graves can be richly furnished was demonstrated by the discovery of the 'Amesbury Archer' and his companion a few years ago.

iii.

See suggested general requirements above: monitoring should be carried out before, during and after the passage of the TBM along each bore of the tunnel. The monitoring of both bores should include the whole width of the monitoring area for both bores so that cumulative effects can be established. After completion of the tunnel should continue at decreasingly frequent intervals until all movement has stopped with final checks at longer intervals to confirm stability.

As indicated above all results should be archived with archaeological records with summary information deposited in the HER for future reference.

Paragraph 5.2.8 of the revised draft DAMS states that

“The requirement for these will be scoped to minimise the number of installations required. The locations of these installations will be selected to avoid known archaeological remains. Targeted archaeological mitigation at these locations will include ploughzone artefact collection, archaeological excavation and recording and/ or archaeological topographic survey, as relevant.”

This is not an adequate provision – see general principles suggested above.

1 Monitoring Underground Construction: A best practice guide: British Tunnelling Society.

2 ITAtech Guideline on Monitoring Frequencies in Urban Tunnelling: ITAtech Report No3 V2 May 2015.

	<ul style="list-style-type: none"> □ The requirement for the number of stations required should be scoped to ensure robust and accurate monitoring, with spacing sufficiently close to pick up variations in effects: NOT to 'minimise' the number of installations. □ The locations should ensure that they include locations close to or surrounding sites and monuments that could be affected, as well as providing forewarning of potential problems and recording actual movement for both known and as yet undiscovered remains. □ The installations as proposed (revised draft DAMS para 5.2.6 to 5.2.7) represent minimal intrusions whose exact locations could easily be chosen to avoid known or unknown archaeological features and located within approx. 1m of a planned point the precise position being chosen to be in a 'blank' area of chalk subsoil. Full recording of the ploughzone archaeology would be needed, but any need for excavation would normally be obviated by adjusting the precise location of the installation. • As indicated above, the timing of monitoring must be made clear. <p>As a general point, one of the problems of defining what should be put in place is the lack of previous technical monitoring. If this scheme is top proceed it should be seen as an opportunity to carry out research into the effects of tunnelling beneath rural monuments.</p>	
<p>2.1.40</p>	<p>The mapping of noise level change seems to indicate that any improvement will not last [fig 9.5 differs] and is less further away from the cutting (presumably due to effective vertical walls. It is not clear if effects of reverberation and echo have been taken into account and how far the finish of the retaining walls would make a difference.</p>	<p>It is noted that Figure 9.4 Environmental Statement (ES) [APP-167] relates to the short term change in traffic noise level i.e. the change from the 2024 Do-Minimum scenario to the 2024 Do-Something scenario, and the scale uses the Design Manual for Roads and Bridges (DMRB) short term change criteria (0<1 dB negligible, 1<3 dB minor, 3<5 dB moderate and ≥ 5 dB major). Figure 9.5 of the ES [APP-168] relates to the long term change in road traffic noise</p>

between the 2024 Do-Minimum scenario and the 2041 Do-Something scenario, therefore this includes the anticipated growth in traffic from 2024 to 2041 which would occur with or without the scheme. The noise change scale on Figure 9.5 is different to Figure 9.4 as it uses the DMRB long term change criteria (0<3 dB negligible, 3<5 dB minor, 5<10 dB moderate and ≥10 dB major). Therefore, the traffic noise change maps do not indicate that the improvement in the WHS in the opening year does not last, simply that the change criteria differs when considering short term and long term change.

The maximum reduction in road traffic noise levels in the WHS occurs along the route of the existing A303 where the scheme is in tunnel or the new A303 is relocated off the current route. The cuttings included in the scheme design through the WHS act like a barrier in reducing road traffic noise levels, compared to the situation if the road was at ground level, therefore the greatest benefit is achieved close to the cutting.

Tunnel portals can be a source of reverberant noise, this effect is included in the traffic noise predictions. As detailed in para 9.8.14 of Chapter 9 of the ES the use of a noise absorbent finish at the entrance/exit of the tunnel and green bridge 4 is included as an essential embedded mitigation measure and is therefore included in the traffic noise predictions to minimise this effect. This is secured by D-NOI6 in the Outline Environmental Management Plan [REP6-011]. As detailed in para 9.8.15 of the ES the design of the surface finish of the retaining walls at the approaches to the tunnel portals to reduce the reflection of noise is included as an enhancement measure, rather than essential mitigation. This is because the magnitude and extent of the potential benefit is limited. Based on the advice in DMRB to adopt a cautious approach to the benefit of absorptive surfaces on barriers, this small potential additional benefit has not been included in the results reported in the ES, which are therefore conservative in this regard. However, a surface finish to the retaining walls at the approaches to the tunnel portals designed to reduce the reflection of noise will be included in the scheme design, and is secured by D-NOI5 in the OEMP, in order to minimise the impact of the scheme in the WHS.

2.1.41

The CBA agrees that proper scrutiny of the economic case as set out in paragraph 4.5 NPSNN is essential. Furthermore, we note that this has to be done in the context of the previous two paragraphs which (with added emphasis) state:

“ 4.3 In considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account:

- *its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long-term or wider benefits;*
- *its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.*

4.4 In this context, environmental, safety, social and economic benefits and diverse impacts, should be considered at national, regional and local levels. These may be identified in this NPS, or elsewhere.

As noted above, the CBA remains convinced that RIS 1 should have been, and RIS 2 should be subject to SEA to address paragraph 4.4, especially when read in conjunction with paragraph 2.10, *The Examining Authority and the Secretary of State should therefore start their assessment of applications for infrastructure covered by this NPS on [the] basis ... ofa compelling need for development of the national networks – both as individual networks and as an integrated system..*

But in the absence of an SEA (of either RIS as a whole or the 8 schemes that contribute to improving the A303/A353 route SW route), the overall effects of the scheme in relation to *environmental, safety, social and economic benefits and diverse impacts.... both as individual networks and as an integrated system*

As noted above, Road Investment Strategies do not require Strategic Environmental Assessments (SEA). The current DCO relates to a single scheme and not a programme of schemes.

The Applicant has clarified in other responses that what was valued in the CVR reflects removal of the road from a part, but not all, of the WHS.

Questions asked in the survey ensured only people who actually drive on the A303 through the WHS were included in results of the road user survey, so it is fair to expect the value of the view from the road of the stones was adequately captured.

The CBA refers to “whether the harm caused to the WHS at either end of the tunnel was made sufficiently clear”. The survey very explicitly stated that the tunnel portals and some sections of road would remain inside the WHS. At the time the survey was undertaken, the precise alignment of the road was unknown so the survey could not present the risk to archaeological deposits under the route. Once route options were clearly defined, these risks were captured in the Heritage Impact Assessment and used alongside the other monetised and non-monetised costs and benefits to reach a view of the proposal’s overall Value for Money.

CBA lists 5 factors that it believes might lead WTP to be significantly higher for a scheme that completely removed the road from the WHS. The Applicant does not believe these factors would make a material difference to the overall WTP. Taking each in turn:

In terms of CBA’s comment which states that “the substantial focus on Stonehenge itself, where other intrusions are greatest so tranquility gains are arguably least significant”. The Applicant assumes this refers to the presence of large numbers of visitors at the Stonehenge monument, which is a factor relevant to other visitors but not to road users or the general population. Given visitors make up only around 2% of the aggregate value of improving cultural heritage, this is not a material concern.

Similarly, CBA’s comments which states “Other parts of the WHS where other intrusions are less and proximity to the A303 is greater, so intrusion may be worse and its removal more valued, but in significant cases this would not be

still need to be assessed, at least in relation to high level considerations, especially those where:

- a) environmental effects – most notably carbon emissions and climate change – are so generic and cumulatively insidious that assessing their characteristics and the effectiveness of any *measures to avoid, reduce or compensate for any adverse impacts* can ONLY be considered on the basis of *individual networks and as an integrated system* not just individual projects
- b) the economic case for development is only truly robust if all (or at least several) of the schemes within the route corridor are delivered in a timely manner – and conversely the exceptional scale, complexity cost and environmental sensitivity of the Amesbury to Bewrick Down scheme could threaten or significantly delay delivery of other schemes, thereby merely shunting traffic congestion and safety problems down the road while falling significantly short of achieving the full economic benefit of a free-flowing network (cf Public Accounts Committee concerns)
- d) enhanced environmental benefits can be delivered by a substantially cheaper alternative (such as an optimised F010 route) the adverse impacts of which can be adequately *avoided, reduced or compensated for*; AND as a result economic and social costs can be delivered with greater confidence and less risk of stymying other schemes, thereby maximising economic, social and environmental benefits while more effectively limiting harm
- e) the exceptional cost of the project is not actually required to maximise environmental, social and economic benefits (because this can be achieved in other ways), but by virtue of its scale going ahead with the project would deprive

alleviated by the chosen scenario”. For the same reasons to the first factor, this is not a material concern.

In terms of CBA’s comment concerning “*the lack of clarity about nature and scale of impact beyond the ends of the tunnel, not just a bit of extra intrusion*”, the precise alignment of the tunnel was not known at the time the survey was conducted so impacts on the WHS from the surface routes were captured in the HIA and qualitatively factored into the overall assessment of value for money.

In response to CBA’s comment that “*the lack of consideration of harm to the WHS through substantial development in its setting*”, as above, the CVR is not the only source of evidence factored into the investment decision – all relevant impacts have been captured either qualitatively or quantitatively. The CVR did describe the presence of tunnel portals and the surface route within the WHS.

In response to CBA’s comment that “*the failure to present respondents with any alternative scenarios that might be obviously more effective*”, it is not clear to the Applicant why presenting alternative options would change a respondent’s WTP, except by introducing an opportunity for “strategic bias” – seeking to influence the investment decision by artificially inflating or depressing their stated willingness to pay.

The 3 year payment period is consistent with best-practice and existing evidence that results of WTP surveys more accurately reflect actual preferences when people are asked for an up-front payment compared to an on-going payment. This is a widely accepted approach and was endorsed by the independent peer reviewer. If the intention had been to reflect WTP as though it were an on-going payment, the valuation question would have been phrased differently, leading to a different figure for annual WTP. If such a survey could have been administered in an unbiased way, there is no reason to expect the results to differ from the present study.

The results of the CVR were used as part of the options appraisal and were applied to those options that removed the road from part or all of the WHS, i.e. the tunnelled options and the case for options that avoided around the WHS altogether (this approach is justified in the responses to CBA’s comments above). Differences in these options, for instance arising from

other schemes of substantial expenditure needed to address otherwise unavoidable environmental harm – especially in respect of nationally and internationally protected landscapes.

As part of the Green Book approach to testing the economic case for the proposed scheme, the Applicant chose (uniquely) to apply a contingent valuation study to try to monetise the net heritage benefit of removing the A303 from the central part of the WHS by burying it in a 2.9km tunnel at the cost of dualling it in cuttings at either end. The whole approach – and its use as a contribution to justifying the exceptional expenditure proposed was predicated on the assumption that the proposed tunnel would be a major benefit and was the only option on offer. It sought to establish a Willingness to Pay for the 2.9km tunnel and other works from three groups: UK visitors to Stonehenge; users of the A303; and the general population. While the first and last groups were questioned by direct polling, the road user group was not based on collecting the views of actual users of the road but a road user subset of the general population. These results indicated a *Willingness To Pay* scenario of payment through national taxation of c.£24 per household per year for three years by UK visitors; c.£21 for road users; and c.

£14 general population. The report noted that

“The net present value (NPV) of the three years’ worth of WTP payments therefore represents the overall individual WTP for the road removal”

and from this it was extrapolated that

*“The **aggregate net benefit** of moving the A303 road into a tunnel to **visitors** is **£24.50m**, for **road users** it is **£49.15m**, and for the **general population** it is **£1.20 billion.**”*

tunnel portals and surface sections, were captured qualitatively as part of the overall assessment of the Value for Money of each option. Value for Money was not the decisive factor in ruling out these other options.

The Applicant believes the CVR is neither an over-estimate or an under-estimate, and it is not appropriate to consider the results a “minimum baseline”.

The use of contingent valuation in cost-benefit analysis, for the purposes of comparing impacts in a common unit of account, is standard practice when spending public money, as set out in the Green Book. Its application to cultural heritage is novel but not unique: the Department for Digital, Culture, Media and Sport have undertaken a number of similar studies to help make the case for investment in relation to cultural and heritage assets.

The Applicant considers that the translation of cultural heritage impacts into monetary values has proved helpful for informing a robust and informed investment decision, and Government policy is permissive on this point. It is not required for the planning process; costs and benefits can be considered without recourse to monetisation, so the question of an explicit Government Policy advocating monetisation of the historic environment does not arise.

By applying the results of the CVR equally to options that went around the WHS as to tunnel options, and by complementing this with qualitative analysis of differences between these options, Highways England undertook a balanced and systematic analysis of the VfM of all options. The CVR has not been used to skew the analysis in favour of any one solution over another.

However, these statements do not accurately state what was actually valued, which in fact was the WTP for the 2.9km tunnel and surface enlargement at either end, NOT the removal of the road from the WHS. It is also questionable whether the indirect approach to looking at the value to road users based on a subset of the general population adequately covered the loss of the 'view from the road' and whether the harm caused to the WHS at either end of the tunnel was made sufficiently clear.

Nonetheless this is a substantial figure, and in so far as it has any validity, it may be surmised that in principle, given the reference to harm in the hypothetical scenario, that the WTP for complete removal of the scheme from the WHS might be significantly higher. How much higher is difficult to judge, but could be substantially so bearing in mind other factors:

- The substantial focus on Stonehenge itself, where other intrusions are greatest so tranquillity gains are arguably least significant (see above)
- Other parts of the WHS where other intrusions are less and proximity to the A303 is greater, so intrusion may be worse and its removal more valued, but in significant cases this would not be alleviated by the chosen scenario
- The lack of clarity about nature and scale of impact beyond the ends of the tunnel, not just a bit of extra intrusion
- The lack of consideration of harm to the WHS through substantial development in its setting
- The failure to present respondents with any alternative scenarios that might be obviously more effective.

A further problem arises because the overall NPV has been calculated as if the value gained is only for the current generation

over an extremely short period (not even beyond the time it would take to deliver the project!!). The actual potential forms of financing applicable to the scheme have very different time frames: private finance arrangements (as originally intended for this scheme) are typically paid back over 30 years or more; the RIS structure is based on a 5-year cycle that can be carried over into the next period. By any measure the 3 year NPV period is extremely short, and spread over ten, twenty or thirty years at a far lower annual rate, the overall WTP might well have proved much higher.

From this it is reasonable to conclude that

1. The public do put a very large value on removing the A303 from the Stonehenge WHS, but what this amounts to is far less clear than this study purports to show
3. Because the hypothetical scenario was predicated on a specific 2.9km tunnel with harm at either end, the extrapolated NPV cannot be supposed to be the upper limit for any scheme, but rather represents a minimum baseline for improvement. If ANY weight is to be given to this (see below) it must be applied equally to any alternative that would more effectively remove the A303 from the WHS – especially any that also removes main roads from its setting
4. On the basis of the hypothetical scenario presented being a minimum baseline NPV, it should be assumed that it would be significantly higher for a scenario with significantly greater net benefit. While the study provides no basis for estimating this, it is reasonable to suppose that small incremental steps in increasing benefit over harm might not greatly enlarge the NPV, a substantial premium might well be attached to a scenario (such as might be achieved with an optimised option F010 or a tunnel extending beyond the setting of the WHS) that achieved complete removal of main roads from the WHS

and its setting without causing any harm.

BUT there are also much more fundamental problems:

1. The whole principle of monetising the historic environment is very poorly established and not remotely generally accepted as a core approach to heritage management by ANY sector of the wide spectrum of interests that CBA's institutional and individual membership reflects. This includes
 - a. national agencies, museums, heritage NGOs, universities, professional bodies, heritage consultancies and contractors, learned societies, environmental and educational bodies
 - b. county council heritage services, authorities, historical, archaeological and architectural societies and umbrella bodies, museums, local heritage consultancies and contractors
 - c. individual local societies, preservation trusts, museums, consultancies
 - d. individuals across the amateur, official, professional and academic spectrum
2. The principle (let alone any established practice) for monetising the historic environment is NOT an established part of Government policy, but to put this in its wider context consideration needs to be given to the work of the Natural Capital Committee over the last 6-7 years (see <https://www.gov.uk/government/groups/natural-capital-committee> *passim*)
 - a. So far as monetising environmental capital has begun to become policy, it only applies to Natural Capital

- b. So far as Natural Capital includes aspects of the historic environment, this only reflects how heritage contributes to Natural Capital, NOT the intrinsic value of cultural capital in its own right
 - c. So far as monetisation methods have begun to be explored for Natural Capital, this has not included any studies for heritage aspects
 - d. So far as Natural Capital exemplifies how environmental monetisation might be developed as a useful instrument of policy, it demonstrates the need for a very cautious step-by- step approach carefully examining options within an overall conceptual and practical framework that can consider how a consistent approach might be developed that would be applicable to many different scenarios
 - e. Despite the work done under official policy by the Natural Capital Committee, the applicability of any methods for monetising environmental capital has NOT been incorporated into Highways England's procedures.
3. The principle of monetising the historic environment (OR landscape OR biodiversity) is not an established part of WebTag or DMRB processes
4. So far as it is within the leeway for additional studies of valuation to be applied as an addition to such approaches in exceptional circumstances, those procedures require a balanced systematic basis for comparison across alternative means of delivering environmental benefits or avoiding harm, NOT to heavily skew the comparison towards one solution over others (whether more or less

	<p>costly) OR through the narrowness of the methodology constrain the valuation to only one scenario, thereby artificially limiting the full valuation of more costly, but more effective solutions.</p> <p>When seen within the context of NSPNN paragraphs 2.1 and 4.3 to 4.5 and the Public Accounts Committee and National Audit Office reports, these considerations are even more telling, demonstrating how this the flawed application of this study has not only badly skewed consideration of how best the problems of the A303 in the Stonehenge WHS might best be resolved, but also how this has skewed prospects for delivery of the whole A303/A353 route, AND as CBA has indicated, having a major knock- on effect relative to how far, within the overall budget allocation for RIS major avoidable or unavoidable effects on internationally and nationally protected landscapes can be addressed.</p>	
<p>2.1.42</p>	<p>The proposals for all off-line embankments and landscape mounding involve <i>in situ</i> burial of existing topsoil undisturbed, in order both to preserve ploughzone archaeology and subsoil remains in those areas. The retained cuttings cut and cover tunnels and green bridges limit the amount of topsoil available from the main line works, and the area of topsoil thus excavated is not given.</p> <p>To comply with the archaeological mitigation proposed, all the topsoil needed for landscaping purposes would be derived from the main road line and cuttings (and possibly structural embankments) only.</p> <p>A further commitment is made in the draft DAMS (para 5.2.11 p.) that the Soil Handling Strategy <i>ensure that topsoil excavated from inside the WHS is stockpiled separately and re-used within the WHS as close as practicable to the area from which it was</i></p>	<p>The requirements for topsoil stripping under road embankments and areas of landscaping are as set out in Appendix D of the draft DAMS [REP7-019].</p> <p>Regarding the spreading of topsoil, as stated within paragraph 25.3.5 and 40.3.33 of Comments on Written Representations [REP3-013], the objectives of the habitat creation within the WHS will be to create a mosaic of early-successional habitats ranging from bare ground to species-rich low nutrient swards. In order to achieve these objectives, minimal amounts of topsoil (limited to a scattering of soil) would be required to provide the nutrient poor conditions suitable for these habitats and prevent the dominance by undesirable vigorous grass species. As such, spreading the topsoil thinner than that of the existing soils would be beneficial in the creation of the target nutrient poor habitats and would not be a limitation to achieving the objectives of the habitat creation within the WHS.</p> <p>The strategy for the Handling, storage and placement of excavated topsoil is as set out in the DAMS as submitted at Deadline 8, paragraphs 5.2.17 – 5.2.19. This states the following:</p> <p><i>‘The Soils Handling Strategy will include consideration of the stockpiling, handling and use of topsoil (including topsoil that has been sieved, where the</i></p>

	<p><i>derived</i>. This presumably means that soils excavated from the areas of cut-and-cover tunnel sections and green bridges will be reused on top of them, and small amounts may be used for un retained cuttings and embankment sides; but at both ends of the tunnel a significant surplus would be left from the retained cuttings not available outside the WHS.</p> <p>It seems likely that a significant shortfall would arise that (presumably) would be made up for by spreading the topsoil over tunnel arisings much thinner than the existing soils in those areas. This would have knock-on implications not only for ecological habitat creation but also for meeting the proposed Soil Handling Strategy requirement that “<i>the origin and placement of topsoil that could contain archaeological artefacts to be mapped and for this information to be lodged with the WSHER</i>”.</p>	<p><i>soil matrix and stone components have been separated) in relation to areas where preservation of archaeological remains in situ is proposed. This will include controls to:</i></p> <ul style="list-style-type: none"> <i>ensure that topsoil excavated from inside the WHS is stockpiled separately and screened to remove any remaining artefacts before re-use within the WHS; and</i> <i>require the origin and placement of topsoil to be mapped and for this information to be lodged with the WSHER.</i> <p><i>The method for mapping and placement of topsoil will be set out in a Method Statement to be prepared by the MW Contractor, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG, for approval by Wiltshire Council (in consultation with Historic England). Implementation of the Method Statement will be monitored by the ACoW.’</i></p> <p>This updated wording in the DAMS will ensure that there are no ‘knock-on implications’ with regards to the meeting the proposed Soil Handling Strategy with regards to the origin and placement of topsoil.</p>
2.1.43	<p>As previously noted both in writing and orally, a vital consideration for the method of soil placement is whether – and exactly how <i>in situ</i> preservation of topsoil beneath the landscape mounding, both at Parsonage Down and all other areas of such mounding would be achieved.</p> <p>As we have previously advised, an outline methodology IS required and in the CBA’s view must show in particular:</p> <ul style="list-style-type: none"> • What the likely structural capabilities of the emplaced material is likely to be (especially as between tunnel arisings and directly excavated subsoil and chalk from cuttings) • How it would be ensured that the plant required (dumper trucks bulldozers etc) would not run directly on the existing topsoil but only on already emplaced 	<p>The Applicant restates that the draft DAMS is a strategy document. It has been revised and updated at Deadline 7 [REP7-019] and has undergone further revision for submission at deadline 8. The detailed information that the CBA says is required now will not be known until the detailed design stage. The DAMS requires the preparation of a Heritage Management Plan and Method Statement by the Archaeological Contractor in relation to preservation in situ [REP7-019, paragraphs 5.1.19 – 5.1.23; paragraphs 6.1.6 – 6.1.10; section 6.2, Preservation in situ]. The technical details to be included in the Method Statement are set out in the DAMS at paragraph 5.2.15, and details regarding the handling, storage and placement of excavated topsoil are set out in paragraphs 5.2.18 and following].</p> <ul style="list-style-type: none"> • The Outline Environmental Management Plan (OEMP) (a revised version of which is submitted at deadline 8) notes that the preliminary works contractor (archaeology) shall produce a Heritage Management Plan based on the Detailed Archaeological Mitigation Strategy, indicating how the historic environment (relevant to the

material

- What thickness of such material would be required to prevent rutting and compression impacts on the buried top soil.
- How far this thickness would need to vary as between tunnel arisings and other sources of material
- What thickness and volume of topsoil would be needed and to what extent these areas would be left as bare (or almost bare) chalk to minimise creation of 'false' archaeology, ecological problems associated with over-fertile soils
- How the methodology will be reconciled with DEFRA's guidance on the handling of soils in construction and BSI standards for soils and subsoil, noting that much of this is contrary to such guidance and standards

An outstanding problem, raised by CBA in both written and oral submissions, but not clarified by the latest draft DAMS, is that there is still no explicit mechanism by which conflicting standards for *in situ* preservation of archaeology and the DEFRA guidance and BSI Standards are to be resolved.

If as indicated Wiltshire County Council is the body with the relevant expertise on both aspects (and any ecological or other considerations) to act as the objective authority on this matter it is one where agreement should be required, not just consultation. The mechanism must demonstrate how coordination of specialists and local authority officials will work and how this will be built into all relevant legally binding commitments under the DAMS, soil handling methods statement and other mitigation commitments.–

scope of works) is to be protected in a consistent and integrated manner, coordinated with all other relevant environmental topics. The HMP shall be prepared in consultation with the members of the Heritage Monitoring and Advisory Group (HMAG) and Wiltshire Council Archaeological Services (WCAS). The preliminary works contractor (ecology, utilities, roads and ground investigation) shall identify within their CEMP how works are to be carried out in accordance with the Heritage Management Plan. The OEMP details that the plan must include. [item PW-CH1]

- The OEMP states that where potentially sensitive archaeological remains are required to be buried or sealed beneath fill material to ensure they are not disturbed during construction, the main works contractor shall prepare a **Method Statement** after consultation with Wiltshire Council and Historic England and, for sites within the WHS, the members of HMAG, prior to the start of the work. The OEMP details that the Method Statement must include. [item MW-CH5].
- The OEMP requires a **Soils Management Strategy** and details the requirements [PW-GEO3]. An outline Soils Management Strategy is attached to the OEMP which sets out what details that strategy must include [Annex A.3].

Preservation in situ is both feasible and deliverable. The Applicant notes that DMRB Volume 10 Section 6 Part 1 states at paragraph 2.2.1 that with regards to "*archaeological sites and remains ... that there is a presumption in favour of their physical preservation*" and also at paragraph 2.9 "*Preservation in situ is therefore preferable, and preservation by record should only be considered after other design solutions have been fully considered.*"

With regard to conflict with the DEFRA Code of Practice, this was discussed at ISH8 in response to comments made by CBA (see the Applicant's written summary of oral submissions made at that hearing, with respect to Agenda Item 5.1(v), submitted at Deadline 8), and the Applicant confirmed that the DEFRA Code would not override the detailed considerations in the DAMS, given the DAMS is a very detailed and specific framework to be applied to a very specific heritage context. The OEMP has been amended at Deadline 8 to provide clarity on this matter providing that the Applicant must have regard to the Code of Practice rather than 'following' it.

		<p>The Applicant notes CBA’s comment on agreement. This is addressed within the revised DAMS as submitted at Deadline 7 [REP7-019; paras. 1.3.2 – 1.3.5; Section 8.1 and Appendix A].</p> <p>In addition,</p> <ul style="list-style-type: none"> • The Heritage Management Plan will be prepared in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG, and approved by Wiltshire Council (in consultation with Historic England) prior to the relevant works commencing. [OEMP (revised for deadline 8) PW-CH1 and provisions in the DAMS]. • Consultation on Method Statements / SWSIs will be undertaken with Wiltshire Council and Historic England and, for sites within the WHS, HMAG, and they will be subject to approval from Wiltshire Council (in consultation with Historic England) [OEMP PWCH4 and provisions in the DAMS] <p>The Soils Management Strategy will be subject to approval by the Secretary of State, in consultation with Wiltshire Council and The Environment Agency in respect of matters relevant to their function and, for works inside the WHS, the members of HMAG [OEMP PW-GEO3].</p>
<p>2.1.44</p>	<p>WM.2.10</p> <p>It is also relevant to know where such deposition would occur relative to archaeological resources and the nature of such ancillary works.</p> <p>is not clear from the draft DAMS if these areas have been identified and whether or not preservation <i>in situ</i> of any known and unknown archaeology would definitely be achieved, or would be subject to recording (or contingency for recording).</p>	<p>The Applicant has responded to the Second Written Question WM.2.10 in detail in its Responses to the ExA's Written Questions Waste and Materials Management [REP6-033].</p> <p>Provisions are made in the draft DAMS, submitted at Deadline 7 [REP7-019; Appendix D] for each Action Area and the proposed archaeological methods to be utilised in each area.</p> <p>The Applicant has responded previously to the CBA’s comments regarding whether preservation in situ can be achieved. Please see response at items 13.1.2, 13.1.6, 13.1.8, 13.1.10 & 13.1.16 of the Applicant’s response to submissions made at deadline 3 [REP4-036]. It is the Applicant’s view that preservation in situ is feasible and deliverable (for both known and presently unknown heritage assets).</p>

3 National Trust (REP7-047)

3.1	Comments on draft Detailed Archaeological Mitigation Strategy (REP6-014)	
	Matter Raised	Highways England's Response
3.1.1	These comments and suggestions include our concern that para 6.3.42 of the D6 DAMS requires revision to make it plain that within the WHS 100% of any linears will be excavated.	Within the WHS, 100% of each linear feature will be excavated. This is now stated at paragraph 6.3.42 in the Draft Detailed Mitigation Strategy, submitted at deadline 7 [REP7-019].
3.1.2	And additionally that 5.3.24 which in the D6 DAMS references the use of 'Strip Map and Record' within the WHS requires revision to ensure consistency with commitments elsewhere in the DAMS that 'Archaeological Excavation and Recording' will be the preferred method of mitigation within the WHS.	Archaeological Excavation and Recording (AER) will be the main method to be deployed where the archaeological evaluation results support targeting of defined areas, such as activity foci, or where the assessed significance of the archaeological remains requires a more detailed excavation strategy to be determined in advance. Please see paragraph 5.3.22 in the Draft Detailed Mitigation Strategy submitted at deadline 7 [REP7-019].
3.1.3	We are also concerned to encourage the Applicant to ensure consistency of consultation with HMAG, and clarity in the flow of consultation and approvals processes within the DAMS.	See Highways England's response to Written Questions Draft Development Consent Order (dDCO), specifically DCO.22 [REP6-027] and response to item 20.8.7 in the Comments on Written Representations [REP3-013]. Draft DAMS Section 8, Communications, Monitoring, Sign-off of Archaeological Works and Approval of Documents by Wiltshire Council [REP7-019] describes the consultation and approvals process for the SSWSIs, Heritage Management Plans and Method Statements. Appendix A Flowcharts in the Draft Detailed Mitigation Strategy submitted at deadline 7 [REP7-019] set out the reporting lines and approvals process, including the role of HMAG.

3.1	Comments on Outline Environmental Management Plan (REP6-012)	
	Matter Raised	Highways England's Response
3.1.1	<p>Our overarching approach so far has been to encourage the Applicant to progress the articulation of what the format of consultation with HMAG and the SDCG will be, ensuring the matters consulted upon are appropriate, and the processes are clear and robust.</p>	<p>The Applicant is grateful for the National Trust's engagement with the Scheme to date.</p> <p>The Outline Environmental Management Plan (OEMP) submitted at Deadline 6 [REP6-011] and amended in the version submitted on 19 August [AS-085] provides clarity on the role of the HMAG and SDCG. A further update has been submitted at deadline 8.</p>

4 Wiltshire Council (REP7-041 to REP7-044)

4.1	Comments on Second Written Question responses	
	Matter Raised	Highways England's Response
4.1.1	<p>Ag.2.5 / CA.2.43</p> <p>Wiltshire Council is still awaiting further information from Highways England (HE) on the precise route proposed for combine harvester access across National Trust land, and whether or not the route makes use of public rights of way. The Council reserves the opportunity to comment further when this additional information is made available.</p>	<p>Discussion with all interested parties are ongoing and a decision on the precise route is yet to be agreed. Once Highways England has further information this will be shared with Wiltshire Council.</p> <p>Please also refer to the Applicant's response to the Examining Authority's Second Written Question Ag.2.5 [REP6-019] which outlines that this issue was discussed at the compulsory acquisition hearing, the Applicant's submissions are set out in its written summary [REP5-002] on pages 2-31 and 2-32.</p> <p>The Applicant considers that access to West Amesbury Farm and Park Farm for all agricultural and heavy goods vehicles, with the exception of combine harvesters, can be achieved using the existing road network and without the need for establishing an alternative route. This has been concluded following an analysis of vehicle movements of types required by Mrs Sandell and Mr Sawkill for Park Farm and West Amesbury Farm respectively. The Applicant is thus satisfied that the existing highway alignment through Amesbury is satisfactory to facilitate all existing movements except for a combine harvester with a towed header unit.</p>
4.1.2	<p>De.2.4</p> <p>The Council welcomes HE's commitment to consult with the Council on the external finishes of the green bridges. However, Wiltshire Council's ecologists will also require the opportunity to comment on the function for biodiversity of the green bridges, throughout the design and construction processes.</p>	<p>Highways England welcomes Wiltshire Council's comments. As stated within MW-LAN1 of the OEMP [AS-085], Wiltshire Council will be consulted during the production of the LEMP. The LEMP will include the biodiversity principles (including the target habitat and commentary on functionality) to be incorporated in the landscaping implemented at the green bridges. It should also be noted that, as set out by Highways England at the Issue Specific Hearings on (i) cultural heritage (including the draft DAMS and hydrological/hydrogeological implications for Blick Mead) and (ii) landscape</p>

		and visual effects and design that took place on 21 August 2019, and the DCO that took place on 30 August 2019 (summaries of Highways England's submissions made at these hearings have been submitted at deadline 8), Highways England considers that it is appropriate for the Construction and Environmental Management Plan, and its subsidiary plans (including the LEMP), to be subject to approval by the Secretary of State, in consultation with the local planning authority. This approach is reflected in the latest draft of the DCO submitted into the examination [AS-095].
4.1.3	<p>De.2.5</p> <p>Highways England appear to have concentrated their response to this question on the trunk road aspects of the Scheme. However, responsibility for the remaining vehicular roads, byways open to all traffic and non-motorised user public rights of way will pass to, or remain with Wiltshire Council as the local authority, so the final decision on the detailed design of those aspects should rest with the Council.</p>	<p>The Applicant's response to DCO.2.5 focussed on the trunk road elements of the Scheme because Wiltshire Council's interest in the local roads for which it will become highways authority has been acknowledged by the Applicant and reflected in the drafting of the DCO, from the outset. Article 9 of the DCO acknowledges that the maintenance liability for local roads will not pass to Wiltshire Council unless the works carried out are to its reasonable satisfaction.</p> <p>Highways England and Wiltshire Council are making good progress on the draft legal agreement between the parties relating to highways matters. Only a small number of items remain outstanding and both parties confirm that they expect the legal agreement to have been signed by deadline 9.</p> <p>When concluded, the legal agreement provided to Wiltshire Council, which contains detailed provision around how the detailed design of those parts of the Scheme that will pass to Wiltshire Council will be finalised (with ultimate approval by the Council), provides satisfactory assurance.</p>
4.1.4	<p>CA.2.39</p> <p>Wiltshire Council notes that HE considers that it has the support of the Council to stop up the existing byway open to all traffic and to replace it with a public footpath over the same route. However, this is not an accurate statement of Wiltshire Council's position on this matter. Correctly stated, the Council's position is that it does <i>not object</i> to the stopping up of the byway open to all traffic and its replacement with a public footpath over the same route.</p>	<p>Thank you, your position is noted.</p>

4.1.5	<p>DCO.2.5</p> <p>Wiltshire Council agrees with HE's response, that the wording would not significantly prejudice its ability to maintain the Scheme and welcomes the addition of the wording to the draft DCO. However, it is unclear why, if the works are to be inspected, then such an inspection would not be recorded for later action / reference.</p>	<p>This change was made to the definition of "maintain" in revision 5 of the DCO [AS-096] submitted on 27 August 2019.</p>
4.1.6	<p>DCO.2.7</p> <p>The Council notes HE's response. Following discussions with HE, it has been agreed that Wiltshire Council will be referred to as "planning authority" which is defined as Wiltshire Council. HE have agreed to amend the dDCO and OEMP to ensure that this is consistently adopted across the whole suite of documents. This will also include ensuring that all references are to the Council as a corporate body, rather than its numerous functions or service areas. Where references to function are applied, the Council considers that the wording in MW-G7 is the most appropriate as it states, "in respect of matters relevant to their function".</p>	<p>The Applicant has made changes in revisions 4, 5 and 6 of the DCO to address this point and understands that the Council is now content with how it and its functions are referred to in the DCO.</p>
4.1.7	<p>DCO 2.34</p> <p>Wiltshire Council considers that it is entirely appropriate and necessary that the Environment Agency (EA) is consulted by the Secretary of State when considering whether to approve any departure from the plans specified in the Requirement. The EA are the authority with the relevant expertise to comment on the potential impacts to the environment as a result of any such departures, not least the effects on the Rivers Till and Avon, which are both part of the River Avon SAC.</p>	<p>The Secretary of State will be able to consult the EA as and when necessary pursuant to the wording of Requirement 3 as at deadline 6. This is additional to the EA's ability to approve detailed design matters under the protective provisions. Any amendment is therefore unnecessary.</p>
4.1.8	<p>DCO.2.42</p> <p>The Council considers that "In accordance with" is the normal planning permission terminology, but in order to secure all</p>	<p>The Applicant has considered the point further and will be amending requirement 3 in revision 6 of the DCO to be submitted at deadline 8 to adopt a formulation using "in accordance with" subject to the limits of deviation.</p>

	<p>biodiversity features the phrase "In strict accordance with" is typically used. An alternative wording to include the phrase "compatible with" is not strong enough to ensure that all necessary elements of the Scheme, particularly ecological mitigation and enhancement, are delivered. The Council considers that a change of wording may be appropriate, including reference to the Limits of Deviation (LoD) but retaining 'in accordance with'. For example: "Having regard for the LoD described in (ref), the scheme will be constructed in accordance with the detailed design approved".</p>	
4.1.9	<p>DCO.2.44</p> <p>The Council has considered HE's response. However, the Council notes that HE is only The Authority and approving body if the ExA agree that this is appropriate.</p> <p>The Council maintains its position that it considers this inappropriate.</p> <p>HE's response does not provide any safeguard to the underlying principle that nobody should be a judge in their own cause (actual bias) nor should any decision maker be put in the position <i>whether a fair minded and informed observer would conclude there was a real possibility that the decision maker was biased</i> (apparent bias). (Test for the principle taken from Porter v Magill [2011] UKHL 67 and subsequent line of cases).</p> <p>In earlier submissions HE tried to make a distinction between the contractor and HE but the contractor is carrying out the project for and on behalf of HE and therefore under HE's proposal, it would still be the decision maker for its own project.</p> <p>Whilst it is acknowledged that HE is a public body that does have some statutory duties, it is also the proponent and sponsor for the Scheme and therefore is in exactly the same situation as a private developer when it comes to being a judge in its own cause. HE is also faced with the potential conflicts of risk of delay, cost and failure of the Scheme, therefore actual and / or apparent bias is not</p>	<p>As submitted to the Examining Authority at the issue specific hearing dealing with matters relating to (i) cultural heritage (including the draft DAMS and hydrological/hydrogeological implications for Blick Mead) and (ii) landscape and visual effects and design, and the issue specific hearing dealing with the DCO, having reflected further on the current mechanisms for approvals of the plans required to be produced by the OEMP, having had regard to comments and queries from interested parties and the ExA, Highways England has amended the DCO to provide that the CEMP, and the various subsidiary plans under it (excluding those approved by Wiltshire Council) be subject to Secretary of State approval.</p> <p>Revision 5 of the DCO [AS-096] reflects this position, with amendments made to Requirement 4. This now provides that, in addition to the authorised development needing to be carried out in accordance with the OEMP, a CEMP must be submitted to the Secretary of State for approval, which contains the various subsidiary plans.</p> <p>A revised version of the OEMP is submitted at deadline 8, to reflect this new approval structure.</p> <p>It is understood that Wiltshire Council are supportive of this approach and are not seeking approval of any documents over and above those where such approval has already been confirmed (i.e. the HMPs, SSWSIs and method statements) in the OEMP and DAMS.</p>

addressed. As there are viable alternatives which remove the risk the Council considers it inappropriate for HE to be the approving body.

The Council notes that HE have attempted to draw an analogy to that deployed by local authorities. However, the Council considers that there is a clear distinction between the arrangements under Local Government law and this situation. In Local Government law there are no viable alternatives and therefore additional checks have been put in place (Secretary of State's powers to call in, use of Public enquiry with recommendation on fact finding etc.).

As there is a clear alternative in this case (either the Secretary of State or the Local Planning Authority, the Council considers it would be inappropriate for the panel to recommend to the Secretary of State that HE be the judge in its own cause.

The Council notes HE's references to previous DCO's. The examples given all relate to non HE schemes where there is a separation between District Council as Local Planning Authority (LPA) and County Council as Highway Authority (HA) or in respect of a Unitary authority, there is statutory separation between the Executive functions as HA and Council functions as LPA.

There is recognised process for such separation, a democratic process of decision making and likely to be call in provisions by the Secretary of State. Furthermore, each application has to be determined on its own merits and just because a process has been adopted in another application does not necessarily mean it is best practice.

This application has to be considered in accordance with sound legal principles of administrative law and having regard to the nature of the proposal (a two-mile tunnel and work within a WHS with OUV). The Council considers it appropriate that the approver be other than the project proponent and sponsor to ensure maintenance of the public's confidence in the DCO process. Additionally, whilst it is recognised that HE have knowledge as a roading authority, it has limited

knowledge of applying the quasi-judicial functions necessary to consider the planning merits of the Wiltshire Core Strategy, the WHS Management Plan and the community's community needs.

DCO.2.47

Please read in conjunction with comments on DCO.2.44 above.

In respect of HE's comments on this Scheme being a NSIP, the Council considers that this and the Council's recognised expertise is a significant reason why HE should not be the decision maker. Furthermore, there is power within the NPPF for Monitoring costs to be covered in exceptional circumstances and a NSIP of this nature, would justify HE as proponent and sponsor of the Scheme, contributing to such monitoring costs rather than retaining these costs in-house. The Council considers that the burdensome element is more properly addressed via contribution by HE to the exceptional monitoring costs that HE are acknowledging.

In respect of the references to HE and Wiltshire Council's expertise, the Council considers that HE's expertise would not be lost because as Applicant, proponent and sponsor of the Scheme, the underlying documents will be provided to the decision maker. The decision maker in making the decision has to assess the merits of the application based on the information provided to it. This is exactly the expertise that the Council has developed over many years. By the Applicant and the decision maker being one and the same, there is unlikely to be sufficient safeguards to ensure robust decision making can be evidenced notwithstanding any consultation undertaken.

For clarity, Wiltshire Council's position is that it is inappropriate for HE to be the decision maker on a number of documents and that should the Panel determine that it is unnecessary to be referred to the Secretary of State for approval, then it is more appropriate that there be a separate decision maker, such as the Council. If this is

	<p>being considered, then as anticipated by HE, the cost of such monitoring and approval will need to be considered and provided for.</p>	
4.1.10	<p>DCO.2.65</p> <p>In response to question DCO.2.65, HE make reference to those additional Requirements sought by the Council. The Council is currently in discussion with HE with a view to seeking the withdrawal of two of the additional Requirements, namely:</p> <ul style="list-style-type: none"> - Highway Lighting Scheme, and - Traffic Management during Tunnel Closures <p>In regards to the Highway Lighting Scheme, the Council accepts that HE, as a responsible government-owned company, will not seek to undermine the spirit of the DCO at a later date through the introduction of new street lighting which might affect the Scheme. However, it is concerned that the lighting of the crossover points near Countess and Longbarrow Junctions has the potential to cause unwanted repercussions in relation to the WHS, dark sky impacts, local residents and users of the highway. Therefore, there is a need for such lighting to be subject to a degree of control beyond that of the (at this time unknown) maintenance contractor(s) undertaking maintenance, recovery work etc. which requires tunnel closures.</p> <p>With regards to traffic management during tunnel closures, the Council accepts that there is potential to have such lighting controlled under the provisions of the proposed Tunnel Closure Management Plan (as closure is when the crossovers will be in use), currently accommodated in the OEMP. The Council also accepts that, given its understanding that the tunnel contractor will be retained for 5-7 years following the opening of the tunnels, to engage with tunnel operations, it is more acceptable than previously anticipated that the contractor be involved in the preparation and execution of the TCMP. The Council therefore accepts that there is an opportunity to concede</p>	<p>Following the DCO Issue Specific Hearing on 30 August 2019, it is understood that the position on lighting and traffic management is agreed between the parties – no separate requirements will be necessary and item MW-TRA32 of the OEMP has been updated at deadline 8 to reflect the Council's requirements.</p> <p>In respect of the FRA requirement, please see the summary of case of the DCO Hearing which confirms that Wiltshire no longer seeks this requirement.</p>

to HE that the OEMP is an appropriate place (At Table 3.2b MW-TRA12) to retain the requirement of the TCMP. As indicated above, the Council is discussing with HE the possibility of amending the existing text in the OEMP to bring it more into line with the suggested Requirement text, and to include reference to the need for it to address lane cross-over point lighting in connection with any maintenance or other such works in the tunnel area.

Regarding the Requirement sought in relation to Traffic Monitoring and Mitigation, the Council does not concur with some of the views expressed by HE.

HE states "The Applicant's Transport Assessment [APP-247] assesses the Scheme's operational effects which are summarised in paragraph 6.14.1. In short, no mitigation or monitoring is assessed as being required." However, subsequent to the DCO submission, HE have submitted further assessment work in response to concerns raised prior to submission by the Council, about impacts within Amesbury Town Centre and at the Allington Track junction with the A338. This work clearly demonstrated that adverse impacts within Amesbury (A345 / London Road junction) that impact mitigation would be required. This is currently being addressed through the side agreement, currently in travelling draft form. It is currently envisaged that this work will be addressed following the completion of the Countess Junction works, when the potential for interaction between Scheme works and Amesbury A345 junction works would likely be less severe. The detailed design will need to be addressed on the basis of current information, but there will need to be adjustments (e.g. to signals timings) as and when the Scheme is completed, and the inevitable rat-running via the A345 route has been removed following Scheme opening.

The Council considers that there are other areas of uncertainty requiring traffic monitoring, namely those which have been included in the draft side agreement as potential sites for intervention by way of traffic regulation orders at a later stage, when monitoring results

can be considered in the context of a need for such interventions. Examples include the amount and nature of traffic on Allington Track, parking issues on Stonehenge Road, etc. It is unreasonable to expect the Council to undertake monitoring to inform consideration of measures which HE might be agreeing to fund to address any necessary intervention.

The Council accepts that, if HE is willing, there is potential to include such arrangements in a side agreement. However, there has been, to date, no firm commitment to include such measures in the side agreement, so the Council maintains its position that the Requirement should be included in the DCO.

Regarding the timing aspect (prior to the commencement of the authorised development), the Council does not share HE's apparent concerns that this is an unreasonable trigger, as agreement to an acceptable monitoring scheme, in itself, is not considered to be a particularly onerous measure to be secured.

Following a request from HE, the Council re-considered whether an additional requirement for flood risk assessment (FRA) was necessary or whether the OEMP could be amended instead. The Council considers that a separate, additional requirement relating to the FRA is still required as Requirement 10 is a pre-commencement requirement, whereas the proposed FRA requirement is a compliance requirement specifically for the FRA. The Council considers that due to the flood risk sensitivity from multiple sources (river, surface water and flood risk), it is appropriate to elevate this to the DCO as a requirement. Furthermore, the need to comply with the FRA is not explicitly stated in the FRA or OEMP. The Council considers that a precedent has been set by including this requirement in the A14 DCO in addition to a drainage requirement similar to Requirement 10.

4.1.11	<p>Fg.2.4</p> <p>The Council considers that the actions from the peer review have now been agreed with HE. It is important that the Flood Risk Assessment (Appendix 11.5 of the Environmental Statement) is updated with the additional information provided as part of agreeing the actions, so that the party undertaking the detailed design fully understands the risks and requirements.</p>	<p>It has been agreed with Wiltshire Council that the Flood Risk Assessment will not be updated as a result of the peer review. This is as a result of the peer review providing clarifications and assurances over the process taken by HE. The outcome of the peer review demonstrates that there are no changes to the outcome of the Flood Risk Assessment conclusions and outcomes. The peer review comments shall be provided to the future contracting party in the interest of sharing all knowledge of the process to date. The parties continue to discuss this matter.</p>
4.2	Comments on dDAMS (REP6-014)	
	Matter Raised	Highways England's Response
4.2.1	<p>Deposition of Tunnel Arisings at Parsonage Down East</p> <p>The Scheme proposes to deposit the arisings from the tunnel boring within this section of the landscape outside the WHS and creation of a chalk grassland habitat. The archaeological mitigation proposed for this area is a combination of excavation and preservation in situ of known archaeological remains.</p> <p>The strategy proposed in the dDAMS is for areas of fill more than 2 metres deep, there will be archaeological excavation in advance. In areas proposed for fill less than 2 metres deep, any archaeological remains will be preserved under fill. This also applies to other areas of the Scheme not just Parsonage Down East. Wiltshire Council has already agreed that some areas of known archaeological remains will be excavated rather than buried.</p> <p>Wiltshire Council has recently been forwarded a further assessment of the archaeological remains in this area. The Council has not yet been able to fully take this into account. It is likely that the Council will require further field evaluation (trenching and geophysical survey) and / or mitigation than currently proposed. The strategy for the mitigation of archaeological features prior to deposition of tunnel</p>	<p>The Applicant has discussed and consulted on the archaeological mitigation strategy in relation to Parsonage Down East with Wiltshire Council. The DAMS as submitted at deadline 8 takes account of this consultation.</p> <p>The Detailed Archaeological Mitigation Strategy (dDAMS) submitted at deadline 8 notes that <i>“North of the embankment, land within the DCO boundary at Parsonage Down East would be re-profiled to accommodate deposition of excavated material and drainage area one. Existing topsoil would be removed in areas where the depth of deposited material would be greater than 1m. Drainage of the filled area would be accommodated within the fill. The re-profiled filled area would be managed as chalk grassland with occasional area of shrub planting. Drainage Area One would be located within the central part of the filled area.”</i> [the DAMS submitted at deadline 8, para. 3.3.13; see also paras. 3.3.14 – 21; for a plan of the outline drainage see the Environmental Masterplan].</p> <p>Preservation in situ of Site 6: Chalk tunnel arisings deposition area at Parsonage Down is described in the dDAMS. The existing topsoil will be retained and covered with an appropriate membrane and the imported fill material comprising chalk tunnel arisings will be placed onto the membrane to ensure that archaeological remains are protected. The existing landform</p>

<p>arisings on Parsonage Down East is therefore still under discussion. Highways England (HE) still need to demonstrate that preservation in situ of archaeological remains can be fully achieved in line with Historic England’s relevant guidelines.</p> <p>The method to be used to manufacture and distribute the chalk slurry to be deposited on Parsonage Down East has been discussed with HE over the last few weeks. Some of the details of the method are still unclear, as are the implications for any preservation of archaeological remains that will be buried, and so decision-making on the archaeological mitigation will have to be made at a later stage. It is imperative that the DAMS sets out what the criteria and parameters will be for decision making in relation to this area.</p>	<p>character will be maintained within the permanent deposition area to create a chalk grassland [the DAMS submitted at deadline 8, pp. 230-231].</p> <p>The dDAMS notes that for landscape fill and excavated material deposition areas, the Contractor will prepare a Method Statement, setting out how it intends to preserve in situ sensitive archaeological remains and prevent deformation of topsoil/ subsoil horizons (including no-dig solutions), for approval by Wiltshire Council (in consultation with Historic England,). The Method Statement will be prepared with reference to Historic England published guidance (Historic England, 2016 [Preserving Archaeological Remains. Decision-taking for Sites under Development. Historic England, London https://historicengland.org.uk/imagesbooks/publications/preserving-archaeological-remains/]).</p> <p>The strategy for Preservation Beneath Fill is set out in the DAMS [the DAMS submitted at deadline 8, paras. 6.2.4 – 6]. The Contractor will include in the Construction Environmental Management Plan (CEMP) methods that they intend to use to protect sensitive buried archaeological remains. The Preliminary Works (PW) or Main Works (MW) Contractor (as relevant) will describe in a Method Statement the site-specific protective measures, including the extent of the area to be protected, the depth of fill required and the type of fill.</p> <p>As noted in the August 2019 Revision 4 version of the Outline Environmental Management Plan (OEMP) [AS-085] (updated revised version is submitted at deadline 8):</p> <ul style="list-style-type: none"> – The preparation of Method Statements by the PW contractor (all) shall set out the procedures to address environmental issues in method statements prepared as part of their works. The method statements shall define any specific environmental control measures, to be implemented to meet the requirements of their CEMP [AS-085, PW-G5]. – The preparation of Method Statements by the MW contractor shall set out the procedures to address environmental issues in method statements prepared as part of the construction process. The method statements shall define any specific environmental control measures, and any relevant topic specific Management Plans, Method Statements and Strategies. [AS-085, MW-G8].
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		<ul style="list-style-type: none"> - Where potentially sensitive archaeological remains are required to be buried or sealed beneath fill material to ensure they are not disturbed during construction, the main works contractor shall prepare a Method Statement after consultation with Wiltshire Council and Historic England and, for sites within the WHS, the members of HMAG [Heritage Monitoring and Advisory Group], prior to the start of the work. This will be subject to approval by Wiltshire Council (in consultation with Historic England) prior to the relevant works commencing. <i>“The Method Statement will address:</i> <ul style="list-style-type: none"> <i>a) how the main works contractor intends to preserve in situ sensitive archaeological remains and prevent deformation of topsoil / subsoil horizons (including no-dig solutions);</i> <i>b) measures for monitoring continued protection of in situ archaeological remains; and</i> <i>c) where appropriate, how the measures would be reversed following the end of construction, e.g. at compound locations, the ground and the surface returned to its original shape and condition.”</i> [AS-085, MW-CH5]. <p>Highways England considers that the measures outlined above provide sufficient comfort for Wiltshire Council to understand the parameters and criteria that will be used for decision making regarding these matters. As they are contained within the OEMP and dDAMS, they are secured through the relevant dDCO requirements contained in Schedule 2 of the DCO[REP6-003].</p> <p>The Applicant also considers that preservation in situ of archaeological remains below fill areas can be achieved in line with Historic England’s relevant guidelines.</p>
<p>4.2.2</p>	<p>Mitigation of Main Road Line Outside the WHS</p> <p>The Council acknowledges that further mitigation areas have been included in this revised version of the DAMS. However, this is still not extensive enough. The Council notes that there seems to be three areas of the road line (West of site 13.1, East of sites 13.3 and 15.1), as indicated on figure 12.11b where no mitigation is currently proposed. In consideration of this important prehistoric landscape,</p>	<p>The updated dDAMS submitted at deadline 7 [REP7-019] covers all areas within red line boundary. The three areas noted now comprise Site 59, Stockpile area adjacent to Satellite Compound, B3083, and parts of mainline east of River Till.</p> <ul style="list-style-type: none"> - West of Site 13.1, this gap is now covered as 59.1, to be subject to geo-archaeological investigation, strip, map and record

	<p>the Council require that the whole of the road line outside of the WHS (including junctions and slip roads) should be subject to some form of mitigation and this needs to be reflected in Appendix D, fieldwork action areas.</p>	<ul style="list-style-type: none"> – East of Site 13.3, this gap is now covered as 59.2, to be subject to strip, map and record <p>East of Site 15.1, this gap is now covered as 59.3, to be subject to strip, map and record [REP7-019, Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas, pp. 370-371 and REP7-019, Figure 12.1B Archaeological Mitigation Areas].</p>
4.2.3	<p>Approval of documents by Wiltshire Council</p> <p>The Council notes that a new section has been inserted at 8.5.</p> <p>Whilst the Council does not have an issue with including a “deeming provision” within the DAMS approval process to avoid unnecessary delay. However, it does have an issue with the current wording as it leaves open the risk to both the project and the approval process whereby sub-standard documentation is submitted and there is insufficient time for appropriate consideration of the issues by the decision maker and the deeming provision(s) then do not protect the issues that the DAMS has been put in place to address.</p> <p>Therefore, the Council proposes some minor amendments to Clause 8.5 of the DAMS by the insertion of an additional clause immediately following clause 8.5.1 as set out below and minor amendment to current clauses 8.5.2 and 8.5.3 to reflect a validation date.</p> <p>The Council is still considering whether HE proposed time for consideration of the application once validated (currently proposed as 28 days) will be sufficient.</p>	<p>The DAMS submitted at deadline 8 includes amendments to sections 8.5, 8.6 and 8.7 of the DAMS in response to Wiltshire Council’s comments.</p>
4.2.4	<p>Detailed Principles</p> <p>The Council’s archaeology service is largely content with these. However, regarding point 2.3.1, the third principle is not required.</p>	<p>The Applicant disagrees: the third principle, “<i>Assess and undertake any necessary confirmatory or more detailed archaeological investigation across the Scheme, whether temporary or permanent</i>”, is considered to be a necessary safeguard [REP7-019, para. 2.3.1]. This is in order to ensure that any proposed detailed mitigation measures will be informed by an appropriate level of assessment at the four sites where access for detailed and/or confirmatory assessment was denied prior to Examination [REP7-019, para. 5.3.5]. This is also required in areas where the assessed significance of the</p>

		archaeological remains requires a more detailed excavation strategy to be determined in advance [REP7-019, para. 5.3.22], and where selected key features/structures need to be subject to more detailed excavation and sample recovery to address the research objectives of the archaeological programme [REP7-019, para. 6.3.6].
4.2.5	Chronological Scheme There appears to be some errors in the period dates as set out in this section.	The chronology has been revised in the updated dDAMS [REP7-019, Chronological Scheme, para. 4.1.8 & and subsequent chronological elements.]
4.2.6	Human Remains 6.3.76 implies that some human remains may be reinterred. This should not be the case and will not be agreed by the Council.	The Applicant notes Wiltshire Council's concerns. The dDAMS Strategy for the Recovery of Human Remains [REP7-019, para. 6.3.78] is worded to tie it in with the formal wording of the DCO [REP6-005, Article 16]. The wording for the Strategy for the Recovery of Human Remains has been updated for submission at Deadline 8, following the comments from Wiltshire Council and other HMAG members comments [DAMS submitted at deadline 8, paragraphs 6.3.75-6.3.88].
4.2.7	Top Soil Sampling Approach A robust methodology still needs to be agreed for further assessment and mitigation of artefacts in the topsoil in areas to be mitigated. Further information on the nature and extent of lithics from the evaluation phase has been provided by HE to help inform the decision making on this issue, a further statistical information has now been requested. This issue is still under discussion.	The Applicant has set out a robust decision-making process related to topsoil sampling in the dDAMS [submitted at deadline 8, Ploughzone Artefact Collection, paras. 6.3.11 – 19 & paras. 5.3.29 – 31]. Further statistical analysis will not be undertaken at this stage. As noted in the dDAMS: <i>"a reflexive strategy for further recovery sampling of the ploughzone will be developed as an iterative process at site consultation meeting(s) between the Archaeological Contractor, Wiltshire Council and Historic England, the TPA [Technical Partner's Archaeologist] and, for sites within the WHS, HMAG. This will examine lithic material concentrations and areas which the distribution plots suggest may be transitional between areas of activity. Statistical analysis of the distribution of the artefacts recovered in the 1% evaluation test pit sample, combined with the trial trench ploughzone samples and fieldwalking results (where available) will be developed to inform the identification of a representative sample size and distribution, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG."</i> (submitted at deadline 8, para. 6.3.16). The Applicant has agreed this approach in consultation with HMAG.

4.2.8	<p>Sampling Approach to Excavation of Features</p> <p>The level of sampling of features referred to in section 6.3 needs to be agreed and approved. A minimum percentage of sampling for all likely feature types should be set out in the DAMS. In addition, a strategy for the sampling of any prehistoric roundhouses needs to be included in this section.</p>	<p>A minimum percentage of sampling for all likely feature types is set out in the updated dDAMS submitted at Deadline 8, comprising:</p> <ul style="list-style-type: none"> – Linear features within WHS: at least 50% and up to 100% of each linear feature in consultation with Wiltshire Council, Historic England and HMAG [DAMS submitted at deadline 8, paras. 6.3.41] – Linear features outside WHS: minimum of 20% of each linear feature will be excavated (increasing to 40% for enclosure ditches and 100% for smaller curvilinear features). Linear features identified as of later prehistoric (Middle Bronze Age to Iron Age) date from spot-dating material content or stratigraphically will be considered for up to 100% excavation. [The revised DAMS is submitted at deadline 8, paras. 6.3.41] – Discrete features within the WHS: 100% excavation (unless otherwise agreed in consultation with Wiltshire Council, Historic England and, for sites within the WHS, HMAG). [DAMS Submitted at Deadline 8, para. 6.3.42] – Discrete features outside WHS: normally be completely (100%) excavated (unless otherwise agreed in consultation with Wiltshire Council, Historic England and, for sites within the WHS, HMAG); half-sectioning of features may be adopted, in consultation with Wiltshire Council, subject to the significance of the remains and the research questions identified in the SSWSIs [DAMS Submitted at Deadline 8, para. 6.3.42]. – Buried ground surfaces, floor surfaces, hearths: normally 100% excavation. As appropriate. Grid sampling and bulk sampling for palaeoenvironmental remains and scientific dating samples. [DAMS submitted at deadline 8, para. 6.3.43] – Animal Bone Groups or other structured deposits: tailored sampling strategy to be developed following Historic England guidance and in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG and the Historic England Science Advisor (South West). [DAMS submitted at deadline 8, para. 6.3.44]
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		<ul style="list-style-type: none"> - Structures: tailored sampling strategy will be developed as an iterative process, as above. [DAMS submitted at deadline 8, paras. 6.3.45 – 47] - Burials: 100% (un-urned cremations); 100% block lift [urned cremations). For inhumations, 100%, subject to the following: “In general, excavation of human remains will not extend beyond the limits of the investigation work area; however, if the burial is osteologically or archaeologically important it may be followed under the baulk so that it may be lifted in its entirety, provided this will not result in disturbance of further burials, or extend beyond the DCO boundary.” [DAMS submitted at deadline 8, paras. 6.3.48; Strategy for the Recovery of Human Remains: 6.3.75 – 88] - Tree hollows: A representative sample (but no less than 12.5% of the confirmed tree hollows) will be identified for 100% excavation. The strategy will adopt a reflexive approach such that the sample size may be revised in response to the results of the systematic sampling, in order to ensure the sample remains representative and areas of high potential for meaningful interpretation are maximised. The agreement of the tree hollow sample excavation requirements will be sought through the consultation meetings. [DAMS submitted at deadline 8, paras. 6.3.49 – 51] <p>A strategy for the sampling of prehistoric roundhouses is set out in the updated DAMS Excavation Sampling Strategy. This notes sampling strategies for structures [DAMS submitted at deadline 8, para. 6.3.45 – 47] and buried ground surfaces, floor surfaces and hearths [DAMS submitted at deadline 8, para. 6.3.43] as well as structured deposits [DAMS submitted at deadline 8, para. 6.3.44].</p>
<p>4.2.9</p>	<p>Interruptions and Delays</p> <p>Section 6.1.21 sets out circumstances where work on site may have to be suspended if conditions on site are poor and continued works activity may lead to damage to archaeological remains. It is important to note here that the Council, as lead curator, must not only be consulted if this is the case, but will be able to monitor site conditions</p>	<p>This issue was discussed at Issue Specific Hearing 8 on 21 August 2019, as recorded in the Applicant’s written summary (submitted at deadline 8) in relation to Agenda Item 5.2(ii).</p> <p>The revised DAMS submitted at deadline 8 states in paragraphs 6.1.22 – 6.1.23:</p> <p><i>“Archaeological remains and the information that they contain or convey will be treated in an ethical manner, in accordance with current ClfA standards</i></p>

	<p>but will have the ability to require works to cease. This needs to be made explicit.</p>	<p><i>(ClfA, 2014f). The mitigation works will likely extend over different seasons of the year and from time to time it may be necessary to temporarily suspend archaeological work or activities at a site, in order to preserve archaeological remains or to prevent potential damage until conditions improve (for example, as a consequence of episodes of heavy and persistent rain or prolonged wet weather); or to comply with environmental guidelines for the handling of material such as topsoil; or to comply with animal disease control; or for health & safety reasons. The PW's HMP shall address how these issues will be treated.'</i></p> <p><i>'Day-to-day decisions regarding site conditions will fall to the Archaeological Contractor, in consultation with the ACoW. Where extreme conditions arise requiring an immediate decision on site as to whether work should be suspended for a prolonged (more than 24 hours) period, the Archaeological Contractor will liaise directly with the ACoW and the PW or MW Contractor (as relevant). The TPA will be informed of which sites are affected and the reason(s) and likely duration of the interruption and delay, and whether any remedial actions are necessary or are planned (e.g. use of protective shelters or covers to protect exposed archaeological remains during episodes of wet weather, frost etc.). The TPA will inform Wiltshire Council and Historic England and, for sites within the WHS, HMAG, of the circumstances of any interruptions and delays. Resumption of work in such circumstances will be subject to consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. Nothing in this clause is intended to prevent Wiltshire Council (in consultation with Historic England and for sites within the WHS, HMAG) making representations regarding cessation or resumption of work, through the monitoring provisions described in section 8 of the Strategy.'</i></p>
4.2.10	<p>Temporary Roads and Haul Roads</p> <p>The Council notes that a temporary road is proposed to be installed at grade at site 48. The Council previously advised that all temporary and haul roads should not have a permanent impact on the topsoil. As with the other similar proposed roads, the Council strongly advise that this one is built up and the underlying spoil is protected.</p>	<p>The Applicant acknowledges Wiltshire Council's concerns. The position of the bridge and temporary diversion route for the A360 is not yet fixed and would be the subject of detailed design. The Main Works Contractor will be required to limit direct physical impacts on archaeological remains from the construction of the temporary road diversion for the A360 as far as practicable in this location via the Archaeological Method Statements, which address all haul roads and traffic diversions, as set out in the OEMP [AS-085, MW-CH5]. Some topsoil will, however, necessarily need to be removed as</p>

		<p>the level at which each end of the temporary road diversion would tie in with the level of the existing road is fixed. The northern end of this temporary road diversion would tie into the existing roundabout and the southern end would tie into the existing A360. The diversion would be kept as short as practicable and is likely to be of insufficient length to achieve the height required to retain topsoil in situ. For mitigation purposes, it has therefore been assumed that the topsoil would need to be removed as a worst case.</p>
<p>4.2.11</p>	<p>Detailed Mitigation Measures by Scheme Area</p> <p>The Council needs to assess, agree and approve the detail contained in Appendix D - preservation areas, and Appendix E - proposed archaeological fieldwork areas.</p> <p>Whilst most of the mitigation work will take place in the Preliminary Works phase, the Council notes that Section 5.1.7 refers to some potential overlap with Main Works phase. There needs to be a mechanism for managing any overlap, especially if different archaeological contractors are employed for each phase. Wiltshire Council would like some input into the documentation and tender process in terms of selecting appropriate archaeological contractors as referred to in 5.1.9.</p>	<p>Highways England continues to engage with HMAG members, Wiltshire Council and Historic England with a view to agreeing all aspects of the dDAMS. The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS. The Applicant has taken into account Wiltshire Council’s substantive comments to date and would expect only minor textual edits to result from further consultation with regards to the DAMS submitted at deadline 8.</p> <p>As noted in the Applicant’s Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 3.3.9], <i>“Highways England acknowledges that the transition between the Preliminary Works and the Main Works phases is important to the delivery of the DAMS and an appropriate mechanism for this has been included in the draft DAMS as submitted at deadline 7”</i> [see REP7-019, Archaeological Contractor. paras. 5.1.9-5.1.12 & REP7-019, Handover Environmental Management Plans, para. 5.1.24].</p> <p>As noted in the Applicant’s Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 3.3.9], <i>“Regarding the tendering process, documentation, and selection of archaeological contractors, this is a matter for Highways England, and involvement from Wiltshire Council is not considered appropriate or justified. The archaeological contractors will be required to comply with the terms of the DAMS and the plans and statements sitting under it, which Wiltshire Council will have been consulted on or will have approved.”</i></p>

4.2.12	<p>Digital Data and Management Plan</p> <p>It is good to see this section (6.9) included in the draft DAMS. However, further detail needs to be added to confirm the timeframe for its approval and that this will be developed and approved before start of the mitigation phase for both Preliminary Works and Main Works stages. There also needs to be confirmation that the local authority will be able to approve the final version of the management plan referred to in 6.9.9.</p>	<p>Highways England acknowledges Wiltshire Council's comments.</p> <p>As noted in the Applicant's Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 3.3.10], Highways England can confirm that the Digital Data Management Plan will be prepared by the Archaeological Contractor and that they shall plan for the digital archive at the start of the investigations and throughout the project lifecycle (DAMS submitted at deadline 8, para. 6.9.8). The Digital Data Management Plan will be developed in consultation with the Wiltshire & Swindon Historic Environment Record which is maintained by Wiltshire Council and Historic England (as necessary) and will be approved by Highways England as the body responsible for the commissioning of archaeological works that may generate archaeological digital data and ensuring that that data is maintained and kept secure through all phases of the project. The requirements as set out in the DAMS for managing digital data, have been developed following consultation with Wiltshire Council, Historic England and members of HMAG, and are sufficiently detailed to enable the securing of this aspect of the strategy at this stage.</p>
4.2.13	<p>Public Archaeology and Community Engagement</p> <p>The Council welcomes the inclusion of this section (5.4) and the additional information requested in the draft DAMS and the Strategy (Appendix E) which aims to deliver a legacy from the archaeological investigations undertaken for the Scheme. The key section the Council think is missing now is one on implementation and approval. The final version of the DAMS needs to include an Action Plan for delivery for the strategy and an agreed timetable, which needs to state that the delivery will start before the archaeological mitigation works commence.</p> <p>There needs to be confirmation of which organisation(s) will approve and sign off on the delivery of the actions.</p>	<p>Highways England acknowledges Wiltshire Council's comments.</p> <p>See the Applicant's Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 3.3.11].</p> <p>An action plan for the Public Archaeology and Community Engagement (PACE) strategy [REP7-019, Appendix E.2, Action Plan], has been developed and is included within the updated DAMS as submitted at Deadline 8.</p> <p>Highways England can confirm that the PACE strategy will start to be implemented in advance of the Preliminary Works phase [DAMS submitted at deadline 8, Appendix A.10, Indicative time line for implementation of PW and MW stage archaeological works]. The DAMS indicates that "<i>The PACE strategy, programme and resourcing will be required to be in place at the beginning of the PW stage. Accordingly, the scoping and consultation stage will be completed in advance of commencement of the PW stage.</i>" [DAMS submitted at deadline 8, Appendix E, paragraph E.1.6.2]</p> <p>The PACE Strategy is part of Highways England's legacy and benefits programme and will be developed, implemented and approved by the</p>

		<p>Applicant. With regards to consultation on the PACE strategy as it is taken forward, this is as stated in Appendix E, para. E.14.6.1:</p> <p><i>‘The PACE programme will be developed in close consultation with HMAG and ASHRG [Avebury and Stonehenge Archaeological and Historical Research Group], and the Stonehenge and Avebury World Heritage Site Steering Committees and WHS Partnership Panel. Other potential consultees may include representatives of museums, Wiltshire Council Arts and Community Services, community networks, civic fora and local archaeology and history groups.’</i>”</p>
4.2.14	<p>Approval and Sign-Off of Archaeological Mitigation Works and Related Documentation</p> <p>Wiltshire Council is pleased to see the further development of the Communication Strategy in section 2 and Appendix A setting out the organisations involved in the sign-off process. However, the Council thinks more detail is needed to further clarify roles inside and outside the WHS and in particular the role of the Scientific Committee.</p> <p>Throughout the document e.g. 8.1.5 – 8.1.14 and the Executive Summary, it needs to be made explicit that Wiltshire Council’s archaeology service will be approving the SSWSIs. This also applies to the monitoring of mitigation fieldwork and approval of the sign-off of specific areas. Sections 1.3.4 and</p> <p>8.1.7 and 8.1.8 need amending in this respect to reflect the statutory roles of Wiltshire Council and Historic England. The other member of HMAG can be invited to some of the visits where appropriate but are not required to enable areas to be signed off. A clear distinction needs to be made between the advisory role of HMAG members the statutory role of approving bodies, Wiltshire Council and Historic England. For example, in 6.1.18, in the case of decisions which need to be made about any unexpected finds, this falls to Wiltshire Council / Historic England only.</p>	<p>Please see the Applicant’s Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 3.3.12].</p> <p>Highways England has updated Section 8 of the draft DAMS [DAMS submitted at deadline 8, Section 8, Communications, Monitoring, Sign-off of Archaeological Works and Approval of Documents by Wiltshire Council] to provide further detail of the proposed approval of SSWSIs, Heritage Management Plans and Method Statements. Wording in the deadline 8 version of the DAMS has been revised following consultation with Wiltshire Council, Historic England and members of HMAG.</p> <p>Regarding the signing-off of archaeological works, the revised DAMS, as submitted at deadline 8, includes updated text on the validation of completion statements by Wiltshire Council, (in consultation with Historic England), to confirm that the relevant works have been completed in compliance with the relevant Site Specific Written Scheme(s) of Investigation [DAMS submitted at deadline 8, para. 8.4.2].</p>

4.3	Comments on updated OEMP (REP6-012)	
	Matter Raised	Highways England's Response
4.3.1	<p>The Council notes the consultation specified in MW-G7 “if the plans are materially updated”. The Council considers that it should be notified and consulted on all changes to the plans and it would be for the Council, and other consultees, to determine whether the changes are material.</p>	<p>The Applicant does not consider that this is necessary as it would create an overly bureaucratic approach to matters that may require only minor changes - in the midst of a construction scheme, the contractor will need to be able to nimble to deal with minor issues, rather than waiting for stakeholders to agree that they are indeed minor.</p>
4.3.2	<p>MW-G11 states, “<i>the main works contractor will prepare a final version of the CEMP for the operational and maintenance phase of the Scheme, in the form of a Handover Environmental Management Plan (HEMP), again subject to The Authority approval, in consultation with the relevant stakeholders as set out in this OEMP.</i>” Whilst Wiltshire Council is a relevant stakeholder and therefore will be consulted, the Council wishes to make clear that it must approve the section of the HEMP which cover assets for which it will become the maintenance authority</p>	<p>Highways England notes this comment. Amendment has been made to item MW-G11 of the OEMP submitted at deadline 8 to include for Wiltshire Council approval of elements of the HEMP which cover assets for which Wiltshire Council will become the maintenance authority.</p>
4.3.3	<p>The Council welcomes the confirmation of use of closed face tunnelling techniques for the bored section of the tunnel at D-CH32. The Council requires the HE specify an approach to construction of the tunnel that minimises the need for dewatering, does not increase flood risk and is supported by a comprehensive flood risk assessment to be agreed with both Wiltshire Council and the Environment Agency. This is due to the flood risk that dewatering could introduce in an area with known flood risk.</p>	<p>Closed face tunnelling is an approach which minimises the need for dewatering and reduces the increase in flood risk in comparison to other tunnel construction techniques. This technique has been considered within the FRA undertaken for the Scheme. As identified within Items MW-WAT10 and MW-WAT12 of the OEMP [AS-085], the contractor will produce a Groundwater Management Plan (which includes an update to the Groundwater Risk Assessment for the final design and construction plan) and Flood Risk Management Plan. Both of these plans are to be developed in consultation with Wiltshire Council and the Environment agency (where relevant to their functions).</p>

		<p>Minimising the need for dewatering is already secured through item MW-WAT8 of the OEMP. Flood risk provisions are also set out at item MW-WAT13.</p> <p>Furthermore, item MW-WAT12 (d) sets out that the Flood Risk Management Plan must include "any flood risk management or mitigation measures implemented, or to be implemented, in support of temporary and permanent works proposals".</p> <p>Such 'proposals' would include any dewatering that is deemed necessary. As such, the OEMP provisions already provide for the EA and Wiltshire Council to consider such matters. These provisions in the OEMP have now been agreed with the Council.</p>
4.3.4	<p>D-LAN5 refers to, "The non-motorised user crossing of the A360 and the detrunked A303 at Longbarrow shall be a Pegasus Crossing". It is unclear why there is a reference to "and the detrunked A303", because there is only one crossing proposed as a Pegasus type, and that is on the A360. There is no de-trunked A303 within about 600-700m of Longbarrow.</p>	<p>Amendment has been made to item D-LAN5 within the OEMP [AS-085]:</p> <p><i>'The non-motorised user crossing of the realigned A360 and the existing A303 (to be re-classified as the C507 under the DCO) at the Longbarrow Junction southern roundabout shall be a Pegasus Crossing.'</i></p>
4.3.5	<p>The Council welcomes the addition of consultation with Wiltshire Council in MW-WAT2. However, the restriction of this consultation "in so far as relevant to its functions as lead local flood authority" is inappropriate as the Council's public health and protection teams would also need to be consulted from a water quality / contamination / private water supply perspective. Reference to Wiltshire Council as the corporate body should instead be made here due to its multi-faceted functions and statutory roles.</p>	<p>Highways England notes this comment. Amendment has been made to item MW-WAT2 of the OEMP submitted at deadline 8 to remove reference to its functions as LLFA.</p>
4.3.6	<p>The Council requires that point c) of MW-WAT10 is amended to capture the telemetry requirement. Therefore, it would now state, "c) <i>The groundwater level and water quality monitoring / telemetry and reporting programme.</i>"</p>	<p>Highways England notes this comment. Amendment has been made to item MW-WAT2 of the OEMP submitted at deadline 8 to include this amendment.</p>

4.3.7	With regard to point b) of MW-WAT12, the Council requires that the text is amended to state: "...pursuant to the Environment Agency's and Wiltshire Council's protective provisions in the DCO,...".	Highways England notes this comment. Amendment has been made to item MW-WAT12 of the OEMP submitted at deadline 8 to include this amendment.
4.3.8	Following discussions with the Environment Agency, Wiltshire Council require the following addition to MW-WAT13 to capture its warn and inform requirement. The Council suggests that the following paragraph is added to this section. " Highways England shall investigate how the groundwater and fluvial modelling / monitoring will help to "warn and inform" parishes within the catchment, by setting appropriate thresholds and triggers for all sources of water within communities that may be affected by the implementation of the Scheme."	<p>Providing a flood warning service is the statutory responsibility of the Environment Agency, and Highways England understands that they launched an enhanced Groundwater flood warning service for Wiltshire earlier this year. The setting of alert triggers is solely an Environment Agency role, in consultation with Wiltshire Council for surface and ground water flooding. As such, Highways England does not propose to take on this role.</p> <p>Highways England has provided all flood modelling outputs to the Environment Agency and Wiltshire Council for them to enable them to update their flood maps and is not aware of any obstacles to their use on flood warning.</p> <p>Furthermore, the assessment of flood risk undertaken for the Scheme found no communities are affected by flood risk.</p> <p>However, further to discussions with Wiltshire Council of the information that they wish to see, amends have been made to MW-WAT15 to provide for the sharing of monitoring data.</p>
4.3.9	With respect of MW-TRA11, the Council suggests the following minor drafting amendment so that the phrase "to The Authority and Wiltshire Council" would follow the words "provide information to". For clarity point c) should read: "The main works contractor shall endeavour to assist the traffic authorities in relation to their network management duties insofar as the works affect traffic movement on the local roads, and provide information to The Authority and Wiltshire Council regarding any foreseen potential delays to traffic or public transport services due to construction works to The Authority and Wiltshire Council. "	Highways England notes this comment. Amendment has been made to item MW-WAT12 of the OEMP submitted at deadline 8 to include this amendment.
4.3.10	Following discussions with HE, the Council would withdraw its request for an additional Requirement in relation to street lighting (accepting that HE will take a responsible approach in future	Highways England notes this comment. Amendment has been made to MW-TRA12 of the OEMP submitted at deadline 8, with the exception of the penultimate sentence where 'the Undertaker' is replaced with 'the Authority'.

<p>regarding any permanent lighting arrangements, and that the Council's focus should be on cross-over lighting during maintenance and other tunnel closures. The Council would also withdraw the request for an additional Requirement relating to the Tunnel Closure Management Plan, provided the following amendments were made to MW-TRA12 within the OEMP. The revised item would read:</p> <p>"The main works contractor shall, prior to the handover of the works to The Authority, prepare, in consultation with Wiltshire Council, a Tunnel Closure Management Plan (TCMP) setting out, inter alia, the following:</p> <p>Procedures to be followed for the planned closure of a single bore, including use of temporary or part-time signing, and advance information proposals.</p> <p>Procedures to be followed for unplanned closures of a single or both tunnel bores, either during or outside a planned closure, with particular reference to:</p> <p>Method of control of access to the eastbound or westbound or both merge slips at Longbarrow or Countess junctions respectively.</p> <p>Signage to be employed at the start of, and on the approved diversion route.</p> <p>Measures to be taken at a local / regional / sub national level to alert drivers of A303 delays.</p> <p>Requirements to liaise with Wiltshire Council's Streetworks Team and the police in relation to the operation of the procedures embodied in the TCMP and in relation to any future changes to the approved TCMP.</p> <p>The operation and temporary (during tunnel closures) lighting arrangements of the eastbound / westbound lane crossover points in the vicinity of the Longbarrow and Countess junctions.</p>	
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	<p>The main works contractor and the Undertaker, as appropriate, shall comply with the approved TCMP.</p> <p>Reporting Criteria:</p> <p>Approval of the Authority in consultation with Wiltshire Council and Wiltshire Police.”</p>	
4.3.11	<p>The Council welcomes the additions in Section 4, which set out the Design Vision for the Scheme and identifies key Design Principles that will inform the detailed design of the Scheme. It also sets out a number of Design Commitments and procedures for involvement of key stakeholders. The Council has greater assurance that the detailed design will conform with the overall vision, aims and objectives of the Stonehenge and Avebury World Heritage Site Management Plan (2015) and sustain the Outstanding Universal Value of the WHS. The Council considers that it can be improved through further development of a suite of visualisations and guidance to append the OEMP. The Council reserves the opportunity to make further representations as more information becomes available through the discussions of the multi-interest stakeholder working group.</p>	<p>Highways England notes this comment and that since it was made constructive and useful discussions have been held, resulting in further development of section 4 in the updated OEMP submitted at deadline 8. Images and accompanying guidance reference to Design Principles and Commitments have been provided within Annex A.4 of the OEMP (refer to the OEMP issued at deadline 8).</p>
4.3.12	<p>The Council also notes that there appears to be a general inconsistency within Chapter 4 between the use of the words “Authority” and “Undertaker” through the chapter. There should be a consistent reference throughout the OEMP.</p>	<p>Highways England notes that illustrated examples of how the design vision, principles and commitments could look were submitted at Deadline 7 [REP7-024] and have been incorporated within the main OEMP document at deadline 8.</p> <p>There are no references to the ‘undertaker’ within Chapter 4, therefore Highways England does not believe that there is an inconsistency.</p>
4.3.13	<p>With respect to the consultation provisions set out within Section 4.5, the Council wishes to make it abundantly clear that regarding decisions made by HE on the final design, materials to be used etc. in the provision of new public rights of way, Wiltshire Council will only accept the maintenance liability once it has confirmed that they have</p>	<p>The 'sign off' of those aspects of the highway and public rights of way network that are to be the responsibility of Wiltshire Council is dealt with in the side agreement between the parties.</p>

	been provided to acceptable standards and has formally certified that.	
4.3.14	With regard to 4.5.3 c), equestrian usage should be added to user provision. The Council suggests that the amended wording should be, “Public rights of way, including pedestrian, cycling, equestrian and non-motorised user provision....”.	Highways England notes this comment. Amendment has been made to section 4.5.3 c) of the OEMP submitted at deadline 8 to include this amendment.
4.3.15	Within paragraph 4.5.4 there is a reference to consulting on “Signing and lighting at the new Longbarrow junction (Work No.1c(ii));”. Given HE’s insistence that there shall be no lighting at Longbarrow junction, and there is text elsewhere in the OEMP to this effect, it seems wrong to even mention the possibility of consulting on such lighting.	Highways England recognised this inconsistency and has amended 4.5.3 a) to state: Signing and signalling at the new Longbarrow junction (Work No.1C(ii) Refer to the OEMP issued at deadline 8.
4.3.16	With regard to P-SLO4 within table 4.1, the Council suggests that special mention should be afforded in relation to the fencing to protect the public from accessing that land near the portals or cutting where falls could result in fatal outcomes.	Highways England considers that this is an unnecessary provision as the fencing design in these locations shall be reviewed under Road Safety Audits which are mandatory under HD 19/03 of Volume 5 of the Design Manual for Roads and Bridges. These ensure that the road safety implications of all highway improvement schemes are fully considered by a team independent of the design team. The safety measures at the cutting and portals will therefore be subject to independent audit as part of this exercise. However, the Applicant has, at deadline 8, included an additional design principle in this regard, which states that 'The design of the Scheme shall be cognisant of public safety at the cuttings within the WHS'.
4.3.17	Within P-PROW4 within Table 4.1: Design development principles it states that pedestrian gates would be installed on footpaths. The Council notes that these would need to be disabled access gates to provide for wheelchair (motorised) access.	Highways England notes this comment. Amendment has been made to P-PROW4 of the OEMP submitted at Deadline 8 as follows: ‘to accommodate users with restricted mobility and authorised users as necessary’.

4.3.18	The Council welcomes the inclusion of an outline Soil Management Strategy at Annex A.3. With regard to section 2.1.3, the Council considers that an additional bullet point is required to state, " h) the drainage characteristic (permeability, conveyance etc.) of each soil horizon ".	Highways England notes this comment. Amendment has been made to section 2.1.3 of Annex A.3 of the OEMP submitted at deadline 8 to include this amendment at point g) rather than the suggested point h).
4.3.19	In section 3.1.3 of Annex A.3., the Council recommends that the following additional wording is included so that it would read: "...This will be determined on a case-by-case basis, but for avoidance of doubt will include any activity associated with implementing the authorised development , and will be informed by:...". Furthermore, the Council requires that an additional point d) is added to this paragraph which states, " d) the drainage characteristics of the soil both above and below ground. "	The 'determined on a case by case basis' refers to the details of the method statements, not whether one is required or not. As stated within 3.1.1, 'the Contractor shall prepare a Soil Handling Strategy for each land parcel where there is the potential for the disturbance of soil resources'. This therefore incorporates any activity associated with the authorised development which has the potential to disturb soil and, as such, no amendment is required. Following discussion at the Issue Specific Hearing 10 on 29 August 2019, it has been agreed that a change will be made to 3.1.2 to ensure it is not a closed list, which the Applicant understands was the Council's concern. Amendment has been made to section 3.1.3 of Annex A.3 of the OEMP submitted at deadline 8 to include the proposed new point d).
4.3.20	In section 3.1.4 of Annex A.3., the Council requires that an additional point is added to this paragraph which states, " n) the methods to be used to maintain the existing drainage characteristics of each land parcel (infiltration, conveyance etc.) and manage the risk of compaction that may affect the drainage characteristics. "	Amendment has been made to section 3.1.4 of Annex A.3 of the OEMP submitted at deadline 8 to include the proposed new point n).
4.3.21	With regard to section 3.19 of Annex A.3., the Council considers that the following scheme wide principle should also be emphasized and included here. " Water flows from sites will be limited during construction to existing runoff rates, unless otherwise agreed with Wiltshire Council and the Environment Agency in accordance with relevant legislation " (PW-WAT3 and MW-WAT3 (provided alternative drafting is accepted)).	This change has been made to the OEMP at deadline 8.

4.4 Comments on REP6-034 (Responses to comments received regarding OEMP)		
	Matter Raised	Highways England's Response
4.4.1	<p>Item 2.1.2</p> <p>Whilst it is recognised that the Scheme is both within and outside of the WHS, the Council considers that the principles set out in the WHS Management Plan for the WHS and its setting, are currently not prominent enough within the documentation. The Council requires that HE revisit this and make appropriate amendments.</p>	<p>Highways England considers that the Design Commitments, Vision and Principles set out in the OEMP have been developed in full cognisance of the WHS and its setting and that, given the detailed references to the WHS and its setting and the matters relevant to their protection there and in the OEMP and the DAMS, no further statements are required.</p>
4.4.2	<p>Item 2.1.3</p> <p>For the avoidance of doubt, the Council requires approval of all plans / elements of design previously specified.</p>	<p>It has been agreed that Wiltshire Council will approve the Heritage Management Plan, Site Specific Written Schemes of Investigation and archaeological method statements. All other plans, policies and strategies identified within Item MW-G7 of the OEMP shall be approved by the Secretary of State, as detailed within the OEMP issued at deadline 8. The 'sign off' of those aspects of the highway and public rights of way network that are to be the responsibility of Wiltshire Council is dealt with in the side agreement between the parties as well as the draft DCO.</p>
4.4.3	<p>Item 2.1.4</p> <p>The Council welcomes these comments, however notes that reference to the Council should be to the corporate body. Whilst the Council does not consider it appropriate to limit its involvement in all circumstances, where HE are adamant this is required, the wording in MW-G7 is most appropriate and should therefore be consistently applied across the whole document.</p>	<p>The OEMP has been updated at deadline 8 to provide clarity on when Wiltshire Council will be consulted - the focus being that this will be when it relates to matters relevant to their functions having regard to their statutory roles and responsibilities.</p>
4.4.4	<p>Item 2.1.10</p>	<p>As Highways England has previously stated, all contractors will be required to comply with relevant legislation – the OEMP does not facilitate any breaches of such legislation.</p>

	The Council accepts HE's rationale, however notes that there are possible inconsistencies with the Traffic Signs Regulations and General Directions (TSRGD) referenced elsewhere.	
4.4.5	<p>Item 2.1.13</p> <p>The Council would generally prefer the use of "shall" as it provides additional assurance. It is a recognised word used in many legal documents to make plain to the person carrying out the action that they have a mandatory requirement which they must carry out.</p> <p>Whilst the word "will" carries a similar intention it is focussed on the action being carried out rather than the person's obligation to carry it out.</p> <p>Should HE not wish to make this minor amendment, the Council does not insist on it being done.</p>	Highways England notes this comment.
4.4.6	<p>Item 2.1.14</p> <p>The Council considers that the approval of method statements by The Authority is now inconsistent with the provisions for approval by Wiltshire Council within the DAMS (Rev 2).</p>	The method statements referred to in this item are not the same as the archaeological method statements required by the DAMS and OEMP (e.g. PW-CH4). This item is referring to generic contractor method statements which are essentially contractual in nature. It is therefore appropriate for approval of them to be retained by the Authority. Archaeological method statements are dealt with in a separate item PW-CH7 and MW-CH5 in the updated OEMP submitted at deadline 8.
4.4.7	<p>Item 2.1.18</p> <p>Please note that this was incorrectly referenced in HE's response.</p> <p>Wiltshire Council looks forward to receiving the phase 7 surveys and associated documentation.</p>	Highways England notes this comment.
4.4.8	<p>Item 2.1.19</p> <p>The Council requires amendments to this section to state: "...water levels and quality. The plan shall include measures for the monitoring and protection of private water supplies used for</p>	Highways England notes this comment, however, given the scale and nature of the preliminary works, considers that the provisions for protection of the water environment contained within items PW-WAT1 to PW-WAT3 are sufficient to mitigate the risks to private water supplies.

	<p>human consumption, such as to ensure drinking water quality is maintained. This will be completed having regard to industry guidance. Wiltshire Council to be consulted on the development of said plan.</p> <p>The Council has reviewed HE's response but notes that it references main works undertakings. The Council's comments were in relation to the preliminary works.</p>	
4.4.9	<p>Item 2.1.30</p> <p>HE's comment is noted, but not agreed. HE should use terms for highways which are clear in their meaning. The Council considers that the use of the correct terminology will avoid any possible confusion over the intended legal status of the cycle tracks. HE's earlier failure to use the correct terminology for public rights of way in consultation documents caused uncertainty and was amended to provide the required degree of clarity, so it seems strange that HE appears not to see the advantages in this respect.</p> <p>Furthermore, in the event that the non-material change proposal for the proposed pedestrian and cycle link between Longbarrow and the Stonehenge Visitor Centre is accepted, by the ExA the term "cycle track" should be included as it will be referred to in one of the schedules of the DCO. "Cycle tracks" should therefore be included within the DCO definitions alongside footways, footpaths, bridleways, restricted byways and byways open to all traffic.</p>	<p>Please see the response to paragraph 4.6.3 below – the same definition applies to the OEMP.</p>
4.4.10	<p>Item 2.1.31</p> <p>The Council notes these comments, and believes this should be considered in the context of the possible revisions to OEMP Table 3.2b MW- TRA12 currently being discussed between the parties.</p>	<p>Highways England notes this comment and the ongoing discussions between parties regarding MW-TRA12 that have now been resolved with Wiltshire's preferred wording being included in the OEMP submitted at deadline 8. Please refer to the response to paragraph 4.3.10 above.</p>

4.4.11	<p>Item 2.1.34</p> <p>The Council notes HE's response. Accepting that relevant controls will be included within the Council's protective provisions (once agreed), the Council requires that our previously requested wording be replaced with the following: "...and for applications pursuant to Wiltshire Council's protective provisions in the DCO...".</p>	<p>Highways England notes this comment. Amendment has been made to MW-WAT3 of the OEMP submitted at deadline 8,</p>
4.4.12	<p>Item 2.1.35</p> <p>The Council welcomes this amendment. However, the Council requires that the text is amended to state: "Wiltshire Council and the Environment Agency" as Wiltshire Council is the statutory authority leading on surface water flood risk management, so the EA cannot speak on the Council's behalf.</p> <p>The Council notes that this text has been accepted by HE for the new PW-WAT3.</p>	<p>Highways England notes this comment. Amendment has been made to MW-WAT3 of the OEMP submitted at deadline 8,</p>
4.4.13	<p>Item 2.1.36</p> <p>The Council welcomes these amendments, and especially the inclusion of groundwater flood risk. However, the restriction of the consultation with Wiltshire Council "in so far as relevant to its functions as lead local flood authority" is inappropriate as the Council's public health and protection teams would also need to be consulted from a water quality / contamination / private water supplies perspective. Reference to Wiltshire Council as the corporate body should instead be made here due to its multi- faceted functions and statutory roles.</p> <p>The Council notes that MW-G7 states "on those aspects of the plans that are relevant to their functions". If a distinction must be made, this seems more appropriate than specifying a function, as some of the Council's functions are closely aligned e.g. drainage, archaeology and public protection / health on groundwater issues.</p>	<p>Refer to the responses to paragraphs 4.3.5, 4.3.6 and 4.4.3 above.</p>

	<p>With regard to the requested text to specify the monitoring programme, the Council has agreed with HE that the monitoring programme will be agreed as part of the GMP, therefore its requested text at point c) is no longer required. However, the Council requires an additional amendment to include telemetry as outlined in paragraph 4.7 [paragraph 4.3.6 in this document].</p>	
4.4.14	<p>Item 2.1.38</p> <p>The Council does not agree. The additional wording is still required by the Council to be included here.</p> <p>The Council considers this is similar to MW- WAT13 Flood Risk – General Provisions which secures certain general provisions and does not rely entirely on Requirement 10. These design provisions clearly set out what the detailed design needs to achieve.</p> <p>The Council considers there is a precedent for including this type of detail within a DCO (or lower tier document) as it's been included in Requirement 13 surface water drainage for the Sparkford to Ilchester DCO.</p>	<p>Please see discussion of this point in the Summary of oral submissions at ISH10 submitted at Deadline 8 (item 3.1ii), where the Applicant confirms that it considers that these matters are not appropriate or necessary to be included in the OEMP.</p>
4.4.15	<p>Item 2.1.39</p> <p>The Council welcomes confirmation that water samples are compared to drinking water standard. This did not come across at the public inquiry hearing during evidence from HE's Hydrologist. The Council also welcomes the amendment to provide for Wiltshire Council to be consulted on the development of the 'Water Quality Monitoring and Reporting Programme'.</p> <p>Wiltshire Council is aware of its duties and responsibilities under the terms of private water supply legislation. However, potential for the Scheme to impact on drinking water supplies should be acknowledged and dealt with on proactive rather reactive basis and that is what the Council has sought to secure reassurance on.</p>	<p>The points of agreement are noted. Highways England confirms that no significant impacts on drinking water supplies (quality and quantity) are predicted, as set out in the ES. Nevertheless, monitoring is in place and will continue. Monitoring and further risk assessment is secured by the DCO through the OEMP Ground Water Management Plan.</p>

	The Council looks forward to receiving the draft Ground Water Management Plan and particularly the proposed Water Quality Monitoring and Reporting Programme.	
4.4.16	<p>Item 2.1.42</p> <p>The Council notes HE's comment but does not agree. The word "networks" could be interpreted widely; the use of the words "Scheme works" limits interpretation.</p>	This change has been made for the deadline 8 submission of the OEMP.
4.4.17	<p>4.2.4 Wiltshire Council notes that HE did not respond to all of the Council's comments made in previous representations relating to the OEMP and therefore, the Council maintains its position that these changes are necessary unless indicated above.</p>	<p>The Applicant has considered all of the Council's previous submissions and considers that, with the exception of one item, their comments have been dealt with either with a specific response, or in the more general responses provided by the Applicant in regard to Wiltshire's role as a consultee or approver of documents or matters under the OEMP.</p> <p>The exception relates to paragraph 2.28 of REP4-039 where Wiltshire sought an addition to item MW-G13 so that it states: "...variations to site specific working hours will be included within the CEMP and agreed in-consultation with Wiltshire Council.</p> <p>This change is not agreed – Wiltshire Council will be consulted on this matter as part of the development of the CEMP; however, this will ultimately be approved by the Secretary of State, further to the latest versions of the DCO and the OEMP.</p>
4.5	Comments on dDCO (REP6-006)	
	Matter Raised	Highways England's Response
4.5.1	The Council suggests that page numbers for each section are added to the Contents, as per the Sparkford to Ilchester dDCO. Navigating the document is quite cumbersome without them.	The Applicant has added page numbers to the contents page for revisions 5 and 6 of the DCO and will continue to do so in further iterations of the DCO.

4.5.2	<p>With regard to paragraph (6) of Article 13, the Council considers that the following amendment is required: <i>“Nothing in this article overrides the requirement for an environmental permit under regulation 12...2016 or the need for any application pursuant to Wiltshire Council’s protective provisions in Schedule 11 Part 3 of this DCO.”</i> The making of this change would enable the DCO to point to all the permissions needed for the discharge of water, in a manner consistent with the way it already points to environmental permitting.</p>	<p>The Applicant accepts that article 13 does not take precedence over the application of the protective provisions but the Applicant is concerned that the making of this amendment would introduce ambiguity when previously there was none.</p> <p>The Order, including all of the protective provisions which are given effect by article 55, must be read as a whole. This principle is well understood. The Applicant’s concern is that nowhere else does the DCO make any particular provision subject to any particular protective provision. If one were to be inserted here as sought by Wiltshire Council, it would give rise to a question of interpretation – whether other protective provisions not referred to are trumped by the terms of the Order - which would not otherwise exist. This could only be remedied by peppering the Order with references to the protective provisions but that would not aid legibility or clarity. The reference in article 13(6) to regulation 12 of the Environment Permitting (England and Wales) Regulations 2016 is included because those regulations extrinsic to the Order, which is not the case with the protective provisions, and to reflect the equivalent powers under the Highways Act 1980.</p> <p>Please see also the summary of oral submissions in respect of the DCO ISH on 30 August 2019, submitted at deadline 8, which also considers this issue.</p>
4.5.3	<p>The Council notes that point (f) of Work No. 4 within Schedule 1 will have to be reviewed in the context of the proposed changes set out at NMC06 in the July consultation by HE, which seeks to replace the restricted byway with a cycle track contiguous with A360 and C506, except in the vicinity of the dew pond. Further comments are made in respect of this change in the Council’s consultation response.</p>	<p>The Applicant notes the comment and will consider it further should NMC-06 be accepted into the application in the light of which, if any, of options A or B are taken forward.</p>
4.5.4	<p>It is noted that a revised definition for the OEMP is included within Schedule 2. The Council considers this amended definition confusing as the authorised development would be carried out in accordance with the CEMP, and not the OEMP. Similarly, the HEMP would be based on the CEMP and not the OEMP. Furthermore, the Council maintains its position that HE should not be the approving body for the CEMP.</p>	<p>The Applicant has significantly amended requirement 4 in revision 5 of the DCO [AS-096] to include additional definitions needed to reflect Secretary of State approval of the CEMPS and clarify the progression from OEMP, to CEMP, to HEMP.</p>

4.5.5	<p>Reference U within Schedule 3, Part 1, will need to be reviewed as the HE consultation on non- material changes proposes a replacement of restricted byway with a cycle track. The Council considers that HE should revisit Wiltshire Council's previous comments in relation to use of the words "cycleway and "cycle path" instead of the correct term "cycle track". If "cycle track" is used here to replace "restricted byway" then it should, as previously indicated, also be included alongside "byway open to all traffic", "restricted byway", "bridleway", "footway" and "footpath", "carriageway" etc. in DCO Part 1 – Preliminary and 2-Interpretation.</p>	<p>The Applicant notes the Council's comments on the DCO drafting and will consider them further should its proposed non material change NMC-06 be accepted for examination in the light of which, if any, of options A or B are taken forward.</p>
4.5.6	<p>As HE's consultation on non-material changes proposes a replacement of restricted byway with a cycle track, Reference UA within Schedule 3, Part 1, should be reviewed.</p> <p>The Council requests that HE explain why they consider the Allington Track Diversion is not a substitute road and why this item in Schedule 3, Part 2, is not included within Part 1 above.</p> <p>The Council notes that Part 3 of Schedule 3 will also need to be reviewed in the context of HE's July consultation on non-material changes. For example, Allington Track and Byway 1 accesses to Earls Down land in ownership of Lincoln College.</p> <p>Wiltshire Council queries the use of the word "improved" at Reference 38 within Schedule 3, Part 3. The Council questions whether it should refer to "existing junction" as there will be no junction with the improved A303.</p> <p>The Council believes that the measures within the South-western link to new Longbarrow junction in Schedule 9, Part 3 should be checked, as they appear to be incorrect. It states 610m length of new road, but it merges at a point 705m west of the new southern roundabout.</p> <p>With respect to Schedule 9, Part 7, paragraph 20, it states "... (new number to be confirmed)". The Council has provided this previously and it has been included in Part 3 – 9 above and should be included</p>	<p>The Applicant notes the comment and will consider it further should NMC-06 be accepted for examination in the light of which, if any, of options A or B are taken forward.</p> <p>The Applicant understands the query to relate to the extent of stopping up of the Allington Track described in Part 2 of Schedule 3 a "a length from its junction with the existing A303 for a distance of 410 metres in a generally south-easterly direction." It is listed in Part 2 because that specific link is to be stopped up and not replaced. The new link between Allington Track and Equinox Drive is shown on sheet 11 of the Rights of Way and Access Plans [APP-009] reference M and is a substitute for bridleway AMES29 and byway AMES 1.</p> <p>The Applicant notes that it included a mark-up of the DCO with its Proposed Changes Application [AS-067]. Schedule 3 of that version of the DCO includes the new private means of access. Should the Applicant's proposed changes be accepted into the examination, the DCO would be updated appropriately.</p> <p>The Applicant considers the use of "improved" to be appropriate. The Rights of Way and Access Plans show the relevant part of the A303 hatched in such a fashion as to indicate works of improvement, which the closure of the junction with would constitute. The Applicant notes that the junction would be</p>

	<p>here. Furthermore, the Council has previously highlighted an error in relation to this paragraph, which has been dismissed by HE. The Google Maps image below [see original submission REP7-043] shows that a 1.24km length of road from B3086 junction does NOT end at the junction with new roundabout.</p> <p>In paragraph 21 of Part 8 of Schedule 9, “drive” should be capitalised as it refers to “Equinox Drive”.</p>	<p>closed, but the convention adopted in the drafting of the schedule is so far as possible, to rely on existing features.</p> <p>The Applicant has undertaken a thorough review of the measurements in Schedules 3, 9 and 10 the results of which are reflected in Revision 6 of the DCO submitted at deadline 8. With respect paragraph 9, the Applicant is grateful for the Council's comments. The measurement that was in paragraph 20 is accurate, marking the point at which the new alignment departs from the existing A303 alignment, but the textual description was incorrect. This has been rectified in Revision 6 of the DCO. It should also be noted that the new alignment of the link road to the new Longbarrow junction is described in paragraph 9 of Schedule 9. The amendment in respect of the numerical identifier to paragraph 20, part 7 of Schedule 9 and the capitalisation of "Equinox Drive" was made in revision 5 of the DCO [AS-096].</p>
4.5.7	<p>The Council suggests that the measures in paragraph 22 of Part 8 of Schedule 9 should be checked as they do not appear to be correct. Furthermore, the dDCO must include a reference here to the Countess Junction circulatory carriageway and part of verge, if NMC02 is approved. Both of the aforementioned references should refer to the appropriate drawing(s).</p> <p>As a general note, the Council would strongly urge HE to undertake a check of the measurements included within the dDCO as each time it is reviewed, officers seem to find extra discrepancies in measurements.</p> <p>The Council notes that Part 3 of Schedule 11 will require updating once the amended protective provisions have been agreed with HE.</p>	<p>The Applicant has undertaken a thorough review of the measurements in Schedules 3, 9 and 10 the results of which are reflected in Revision 6 of the DCO submitted for Deadline 8.</p> <p>The Council's comments in connection with the verge of Countess Roundabout and NMC-02 are noted. If NMC-02 is accepted into the examination the Applicant will supply the required plans and will take into account the Councils comments.</p> <p>The protective provisions agreed with the Council will also be included.</p>

4.6	Comments on REP6-035 (Responses to comments received regarding dDCO)	
	Matter Raised	Highways England's Response
4.6.1	<p>Item 15 ISH 1 Article 2, para 1.2.1</p> <p>The Council notes HE's response and in respect of all activities apart from "receipt and erection of construction plant and equipment", the Council accepts HE's explanations as to how these activities would be controlled and regulated and do not need to be further regulated.</p> <p>In respect of the activity "receipt and erection of construction plant and equipment" the Council notes that HE's explanation only relates to receipt (construction equipment arriving on the site) and notwithstanding HE's explanation may constitute development by way of storage of the equipment on the land pending construction starting.</p> <p>The Council notes that HE's explanation does not address the term "erection of equipment". The Council is of the view that erection of plant equipment on the site would constitute development and should be subject to appropriate controls.</p>	<p>As discussed at the DCO Issue Specific Hearing, the Applicant notes that this particular definition is well precedented as detailed in the Applicant's responses to questions DCO.1.8(vi) [REP2-030] which identifies precedents for the matters excluded from the Applicant's definition of "commence". The particular exclusion of "receipt and erection of construction plant and equipment" has been accepted across the spectrum of development consent orders, in recent decisions such as the Millbrook Gas Fired Generating Station Order 2019, the Port of Tilbury (Expansion) Order 2019, Silvertown Tunnel Order 2018 and older decisions such as in the White Moss Landfill Order 2015 and the East Northamptonshire Resource Management Facility Order 2013. The reason for the wide adoption of the exclusion of "receipt and erection of construction plant and equipment" is that in almost all cases such an activity would not hit the thresholds for development set out in case law, because of the size, mobility and impermanence of the plant and equipment.</p> <p>The exclusion for the receipt and erection of construction plant and equipment from the definition of "commence" is required by the Applicant for the expedient implementation of Nationally Significant Infrastructure Projects. The activity would not be material due to the nature of the works and equipment and, even were it to be material, the impacts would be limited and temporary in any event. That was the reason that the various precedents for the use of this carve out – all of which could also have resulted in erection of the type of construction plant and equipment that Wiltshire Council claim require regulation – were not subject to exclusion for material works. The core justification is the expediency of being able to do these restricted site set-up activities without having to discharge pre-commencement requirements and the fact that the impacts will necessarily be limited and temporary pending the commencement and full regulation of the development proper that the plant and equipment is designed to serve.</p>

4.6.2	<p>Item 48 Response to Highways England's Comments to Deadline 3 Submissions, paragraph 2.6</p> <p>The Council notes that these comments were erroneously attributed to Article 31 in HE's response.</p> <p>There is no explanation as to why this change, or an alternative change to the satisfaction of the Council is considered by HE to be inappropriate.</p> <p>The Council takes the view that it is inappropriate that Article 47(6), as currently drafted, allows HE to decide the date of de-trunking and handover to the Council unilaterally and with no requirement on the face of the DCO as to the condition of the de-trunked roads at handover.</p> <p>It is only reasonable that there should be further safeguards for the inheriting authority, especially when no side agreement has been concluded / finalised. For the same reasons an addition of a tailpiece clause which has the words "unless otherwise agreed" may be unlawful and in any event provides no assurance in the absence of a concluded / finalised agreement and if there is a finalised agreement why shouldn't that agreement be specifically referred to.</p>	<p>The Applicant and Wiltshire Council are very close to finalising the legal agreement between them, which once concluded would address these concerns.</p> <p>The Applicant notes the comments in relation to "tailpieces" but observes that the principle derives from case law relating to conditions under planning permission. The rule exists to ensure that planning permissions cannot be fundamentally altered through the use of side letters that have not been considered through the statutory processes for changing a planning permission. The rule is of little assistance when construing a statutory instrument, as article 47(6) would be if the DCO is made. Article 47(6) does not regulate development; it is concerned with the timing of de-trunking. The Order, if made, establishes the principle of the de-trunking. It is sensible and entirely appropriate that the highway authorities concerned should be permitted to reach agreement on when that occurs, which is the intention of the wording.</p> <p>The Applicant's position is clear, the words "unless otherwise agreed in writing with the local highway authority" is essential wording that ensures that the terms of the side agreement could not be overridden by the exercise of article 47(6). The Applicant continues to discuss this provision with Wiltshire Council, alongside negotiations on the legal agreement, which are progressing well.</p>
4.6.3	<p>Item 53 Comments on the DCO, section 2.3 in respect of "ancillary works"</p> <p>The Council maintains that the references to "cycleway" should be changed to "cycle track" as cycleway is without meaning in law, see Highways Act 1980 section 329.</p> <p>The Council also considers that the reference to both cycle tracks and cycleways in b(ii) are misleading, as this suggests that there is a difference between the two categories.</p>	<p>The Applicant included a definition of "cycleway" in revision 5 of the DCO [AS-096].</p>

4.6.4	<p>Item 64 Response to Highways England's Comments on Deadline 3 Submission, paragraphs 2.12 and 2.13</p> <p>The Council has considered HE's response. However, the Council notes that HE is only The Authority and approving body if the ExA agree that this is appropriate.</p> <p>The Council maintains its position that it considers this inappropriate.</p> <p>HE's response does not provide any safeguard to the underlying principle that nobody should be a judge in their own cause (actual bias) nor should any decision maker be put in the position <i>whether a fair minded and informed observer would conclude there was a real possibility that the decision maker was biased</i> (apparent bias). (Test for the principle taken from Porter v Magill [2011] UKHL 67 and subsequent line of cases).</p> <p>In earlier submissions HE tried to make a distinction between the contractor and HE but the contractor is carrying out the project for and on behalf of HE and therefore under HE's proposal, it would still be the decision maker for its own project.</p> <p>Whilst it is acknowledged that HE is a public body that does have some statutory duties, it is also the proponent and sponsor for the Scheme and therefore is in exactly the same situation as a private developer when it comes to being a judge in its own cause. HE is also faced with the potential conflicts of risk of delay, cost and failure of the Scheme, therefore actual and / or apparent bias is not addressed. As there are viable alternatives which remove the risk the Council considers it inappropriate for HE to be the approving body.</p> <p>The Council notes that HE have attempted to draw an analogy to that deployed by local authorities. However, the Council considers that there is a clear distinction between the arrangements under Local Government law and this situation. In Local Government law there are no viable alternatives and therefore additional checks have been put</p>	<p>As submitted to the Examining Authority at the issue specific hearing dealing with matters relating to (i) cultural heritage (including the draft DAMS and hydrological/hydrogeological implications for Blick Mead) and (ii) landscape and visual effects and design, and the issue specific hearing dealing with the DCO, having reflected further on the current mechanisms for approvals of the plans required to be produced by the OEMP, having had regard to comments and queries from interested parties and the ExA, Highways England has amended the DCO to provide that the CEMP, and the various subsidiary plans under it (including those specified above) be subject to Secretary of State approval.</p> <p>Revision 5 of the DCO [AS-096] reflects this position, with amendments made to Requirement 4. This now provides that, in addition to the authorised development needing to be carried out in accordance with the OEMP, a CEMP must be submitted to the Secretary of State for approval, which contains the various subsidiary plans.</p> <p>A revised version of the OEMP is submitted at deadline 8, to reflect this new approval structure.</p> <p>It is understood that Wiltshire Council are supportive of this approach and are not seeking approval of any documents over and above those where such approval has already been confirmed (i.e. the HMPs, SSWSIs and method statements) in the OEMP and DAMS.</p>
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<p>in place (Secretary of State’s powers to call in, use of Public enquiry with recommendation on fact finding etc.).</p> <p>As there is a clear alternative in this case (either the Secretary of State or the Local Planning Authority, the Council considers it would be inappropriate for the panel to recommend to the Secretary of State that HE be the judge in its own cause.</p> <p>The Council notes HE’s references to previous DCO’s. The examples given all relate to non HE schemes where there is a separation between District Council as Local Planning Authority (LPA) and County Council as Highway Authority (HA) or in respect of a Unitary authority, there is statutory separation between the Executive functions as HA and Council functions as LPA.</p> <p>There is recognised process for such separation, a democratic process of decision making and likely to be call in provisions by the Secretary of State. Furthermore, each application has to be determined on its own merits and just because a process has been adopted in another application does not necessarily mean it is best practice.</p> <p>This application has to be considered in accordance with sound legal principles of administrative law and having regard to the nature of the proposal (a two-mile tunnel and work within a WHS with OUV). The Council considers it appropriate that the approver be other than the project proponent and sponsor to ensure maintenance of the public’s confidence in the DCO process. Additionally, whilst it is recognised that HE have knowledge as a roading authority, it has limited knowledge of applying the quasi-judicial functions necessary to consider the planning merits of the Wiltshire Core Strategy, the WHS Management Plan and the community’s community needs.</p> <p>In respect of HE’s comments on this Scheme being a NSIP, the Council considers that this and the Council’s recognised expertise is</p>	
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	<p>a significant reason why HE should not be the decision maker. Furthermore, there is power within the NPPF for</p> <p>Monitoring costs to be covered in exceptional circumstances and a NSIP of this nature, would justify HE as proponent and sponsor of the Scheme, contributing to such monitoring costs rather than retaining these costs in-house. The Council considers that the burdensome element is more properly addressed via contribution by HE to the exceptional monitoring costs that HE are acknowledging.</p> <p>In respect of the references to HE and Wiltshire Council's expertise, the Council considers that HE's expertise would not be lost because as Applicant, proponent and sponsor of the Scheme, the underlying documents will be provided to the decision maker. The decision maker in making the decision has to assess the merits of the application based on the information provided to it. This is exactly the expertise that the Council has developed over many years. By the Applicant and the decision maker being one and the same, there is unlikely to be sufficient safeguards to ensure robust decision making can be evidenced notwithstanding any consultation undertaken.</p> <p>For clarity, Wiltshire Council's position is that it is inappropriate for HE to be the decision maker on a number of documents and that should the Panel determine that it is unnecessary to be referred to the Secretary of State for approval, then it is more appropriate that there be a separate decision maker, such as the Council. If this is being considered, then as anticipated by HE, the cost of such monitoring and approval will need to be considered and provided for.</p>	
<p>4.6.5</p>	<p>Item 84 Review of revision 2 of the draft DCO, sections 3.3.5 to 3.38 in respect of additional requirements</p> <p>Discussions with HE are on-going and may lead to a modification of the Council's position in relation to e.g. a need for a Requirement in relation to highway lighting, which might be included in a modified OEMP text at MW-TRA12. These on-going discussions with HE might</p>	<p>The Applicant has considered the Council's modifications to MW-TRA12 which have been incorporated into the version of the OEMP submitted at deadline 8. The matter was discussed at Issue Specific Hearing 11 on 30 August 2019 (please see the Applicant's summary submitted at deadline 8), and the Applicant understands that with these modifications to the OEMP, the Council is content that no additional requirements are necessary to address these matters.</p>

	lead to the removal of a request for two transport related requirements. For the avoidance of doubt, the Council maintains its position that an additional requirement for traffic monitoring and mitigation is required.	
4.7	Comments on BYWAYS 11 and 12 proposals	
	Matter Raised	Highways England's Response
4.7.1	<p>The Council wishes to clarify its current position on Wiltshire Council's proposed amendment to the dDCO with regard to Byways AMES 11 and 12.</p> <p>Due to the risk to the statutory examination timetable if the Council were to go to public consultation and then provide the outcome to the Examining Panel and the fact that the Council does not wish to put at risk the wider benefits HE's proposed development will bring to the residents of Wiltshire, the wider travelling public and to visitors to the WHS, the Council has decided to withdraw its application that the DCO be amended by the inclusion of a prohibition on the use of motorised vehicles (other than motor cycles and invalid carriages) on part of Durrington byway 10, and Amesbury byway 11 (hereafter referred to as AMES 11) and part of Wilford cum Lake byway 1, Wilford cum Lake byway 2, Berwick St James byway 11, Woodford byway 16 and part of Amesbury byway 12 (hereafter referred to as AMES 12).</p> <p>The Council maintains its concern that the closure of the existing A303 and resultant loss of the travelling motorised public's ability to obtain a passing free view of the Stonehenge monument will increase use of AMES 11 and 12 by the travelling motorised public to an inappropriate level.</p> <p>However, the Council proposes that this concern, should it arise, can be dealt with under the Council's existing Highway Authority powers</p>	Highways England is currently in discussion with Wiltshire Council with regard to the Side Agreement currently being developed and considers this should be capable of resolution.

	<p>provided HE agrees to the monitoring of traffic within these byways once the Scheme becomes operational (to avoid delays caused by evidence gathering) and coverage of the costs of any TRO necessary (to ensure that the residents of Wiltshire do not incur unnecessary costs resulting from the Scheme).</p> <p>The Council is currently in discussion with HE for the inclusion of these aspects within the Side Agreement currently being developed and considers this should be capable of resolution.</p>	
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5 Historic England (REP7-046)

5.1	Comments on dDAMS (REP6-014)	
	Matter Raised	Highways England's Response
5.1.1	<p>As the Examining Authority will be aware, HBMCE has advocated throughout our submissions to the Examination (REP2-100: 7.6.118-120; REP3-054: 1.5-1.8) for the development of a research based approach to the development of the DAMS in response to the international importance of the WHS landscape which the Scheme intersects. In our response to CH.2.9 (i) we indicated that we would review the revised Archaeological Research Agenda (ARA) and provide the Examining Authority with an update.</p> <p>The inclusion of research themes based on topics in the ARA in addition to chronological periods enhances the ability to examine the historic landscape holistically and to focus on both periods and areas where there is evidence for change and transition. There is a good use of research questions to consider landscape change and continuity in the latest draft of the DAMS, and we would recommend that the ability to recognise landscape change and continuity in and between other periods should form a focus of further development of the research agenda.</p> <p>In the most recently submitted draft the introduction of Scheme specific research questions based on existing knowledge and within a thematic framework sets a good example for further development of research questions within the WSI and SSWSIs.</p> <p>There is nonetheless a need to ensure that the DAMS provides an equally carefully considered response in relation to the archaeological remains from all periods, not just those with potential</p>	<p>The Applicant welcomes Historic England's comments on the ARA within the DAMS. The revised draft Detailed Archaeological Mitigation Strategy (dDAMS) submitted at deadline 7 considers research themes ranging from the Mesolithic to the post-medieval period [REP7-019, Section 4: Archaeological Research Agenda]. It considers relevant period-based and specialist agendas [REP7-019, para. 4.1.4] and identifies cross-cutting research themes addressing transitional periods and landscape zonation [REP7-019, paras. 4.2.1 - 4.2.3]. Research themes with regards to the Palaeolithic will also be included in the revised DAMS submitted at deadline 8.</p> <p>Landscape change and continuity, in particular, changes in patterns of land use, landscape zonation and divisions and relevant environmental evidence, are consistently considered within the period-based research agendas.</p> <p>Within the research agenda presented in the dDAMS, for each period, a brief resource assessment has been prepared, summarising the known remains within each route segment, both within and without the WHS. This informs the initial range of applicable research questions – and the selection of appropriate investigative techniques – which will be applied in the course of archaeological mitigation works. [REP7-019, Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas]. Further specialist inputs have been considered and are included in the DAMS submitted at deadline 8.</p> <p>The archaeological research agenda is overarching and not intended to be exclusive: detail can be added at SSWSI stage, relevant to each site.</p>

	to contribute to OUV. Consequently we have recommended that further specialist advice might contribute positively to the further development of research questions for other periods.	
5.1.2	<p>HBMCE's comments in relation to the DAMS have also focused on the mechanisms set out for communication between members of the project team, across different areas where work is being undertaken concurrently, as well as between different phases of the Scheme, and with HBMCE and Wiltshire Council as statutory consultees. We would refer the Examining Authority to our responses to Questions CH.2.9 (v), (x), (xiii) and (xiv) in relation to the responsibilities of the various roles in the project team and the coordination of communication across the Scheme. It is essential that a process for regular two-way communication is embedded in the DAMS as well as in other associated documentation, including the OEMP. This is necessary to support the implementation of a reflexive approach to the mitigation strategy which allows for the refinement of the proposed response to management of the impacts on the archaeological resource drawing on and enhancing its approach based on the evolving understanding of the results from earlier and concurrent phases of archaeological work across the Scheme.</p> <p>HHBMCE considers that HBMCE and Wiltshire Council have an important role to play in ensuring that appropriate standards of work are executed across the Scheme, and in approving key documentation as part of the safeguarding process for the historic environment under the Scheme. At present we would consider the Site Specific WSIs (SSWSIs), Heritage Management Plans (HMPs) and Method Statements (MSs) which are to be produced in accordance with the DAMS are such key documents.</p> <p>It is essential that the DAMS provides a robust tool and guide to decision making both in the production of detailed method statements and WSIs for individual areas (SSWSIs), but also to support decision making on site as guided through consultation with</p>	<p>Highways England welcomes HBMCE's continuing engagement and advice on the development of the Scheme. The DAMS [REP7-019] aims to facilitate ongoing consultation and engagement with HBMCE and other statutory consultees and stakeholders, building upon the existing working relationship developed through the considerable work done on the project to date.</p> <p>With regard to clarity regarding the coordination of communications and project roles, the Applicant has considered and addressed these, and refers HBMCE to the revised draft DAMS submitted at deadline 7, in particular the section on Communications, Monitoring, Sign-off of Archaeological Works, Consultation on SSWSIs, HMPs and MSs and Approval of Documents by Wiltshire Council [REP7-019, Section 8] and Appendix A, which contains flowcharts illustrating Archaeological Mitigation: phases and roles [REP7-019, Appendix A, A.2] and Reporting Lines [REP7-019, Appendix A, A.3-A.9]. Following consultation with Historic England and other members of HMAGs, these sections have been revised and an updated version of the DAMS will be submitted at deadline 8.</p> <p>Some of the matters raised by HBMCE here are addressed in the most recent version of the Outline Environment Management Plan (OEMP) [AS-085] Table 3.2a: REAC tables for the preliminary works. The OEMP is also updated at deadline 8. These matters include reporting criteria, and HBMCE's role in relation to the preliminary works contractor's (archaeology) preparation of the CEMP, and HBMCE's statutory role with regard to the Heritage Management Plan (HMP) [PWCH1], works in accordance with Archaeological Mitigation Strategy [PA-CH2], Site Specific Written Schemes of Investigation [PW-CH3], fencing of heritage assets [PW-CH4] and limiting landtake [PW-CH5].</p> <p>Regarding linkage between different phases of the Scheme, the majority of the archaeological mitigation fieldwork will be undertaken during the Preliminary Works (PW) stage of the construction programme, as advanced</p>

<p>HBMCE and Wiltshire Council and further supported by engaging with HMAG and the Scientific Committee as appropriate.</p> <p>Notwithstanding this, and the need for regular site meetings to discuss progress and agree refinements to the approach, HBMCE nevertheless consider that it is important that the DAMS provides a robust set of parameters to guide proactive decision making on site and avoid delays caused by the need to respond reactively to circumstances either not covered in sufficient detail by the DAMS or to unexpected circumstances. The Examining Authority’s questions CH.2.9 (vi) and (vii) addressed the issue of how unexpected finds and cessations and delays should be managed. Whilst HBMCE consider that it is appropriate to set in place procedures for dealing with unexpected finds it is also important that the DAMS takes as comprehensive a view of the potential remains that might be encountered to reduce the potential for these to disrupt progress wherever possible but still be dealt with in accordance with good practice and as appropriate to their significance.</p>	<p>archaeological works. The contractors appointed to undertake the PW and Main Works (MW) stages will produce Construction Environmental Management Plans (CEMPs) (based on and incorporating the requirements of the OEMP, as required by the OEMP itself) and Heritage Management Plans (required by the OEMP) that set out how the requirements for archaeological mitigation at each stage will be implemented.</p> <p>The dDAMS sets out the responsibilities of PW and MW contractors [REP7-019, paras. 5.1.4 – 5.1.8] and measures to ensure continuity between PW and MW contractors [REP7-019, paras. 5.1.9 – 5.1.12]. The requirements for reporting, publication and dissemination to be discharged by the PW and MW Archaeological Contractors are set out in dDAMS Section 9, Reporting, Publication and Dissemination. An indicative timeline for delivery of the work set out in the DAMS by the PW and MW Archaeological Contractors is included at Appendix A.10.</p> <p>Towards the end of the construction stage (or stages) of the Scheme, the MW contractor will prepare a Handover Environmental Management Plan (HEMP), to be implemented by the maintenance authority during the operational phase of the Scheme [REP7-019, para. 5.1.24]</p> <p>With reference to unexpected finds, the revised dDAMS notes that “<i>The procedure for dealing properly with any unexpected finds during the construction process will be agreed and recorded in the CEMP prepared by the MW Contractor for the construction stage.</i>” [REP7-019, para. 5.1.18]. The requirements for Site Specific Written Schemes of Investigation (SSWSIs) and related approvals in respect of unexpected finds are set out in the dDAMS section on unexpected finds [REP7-019, paras. 6.1.18 – 20].</p> <p>Interruptions and delays are addressed in the dDAMS [REP7-019, para. 6.1.21].</p> <p>The Scheme aims to deliver 90% of the archaeological works during the PW stage, and as a result it is expected that archaeology would be removed before the MW stage commences. Highways England is therefore content that the archaeological risk of delays to the construction programme has been managed in the way the works are being contracted.</p>
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5.1.3	<p>At this stage in the development of the DAMS HBMCE have also looked carefully at the relationship between the DAMS and both the dDCO and the OEMP to ensure that between each of these documents there is a consistent approach to implementation of the archaeological mitigation strategy that embeds processes and procedures that ensure the effects of multiple documents on different environment topics do not combine to inadvertently produce adverse effects on the historic environment or individual heritage assets. We understand that Highways England are looking to reinforce this key safeguard in the next iteration of the OEMP, and we would hope to see this satisfactorily addressed to provide reassurance in the form of a robust system for holistic environmental management in accordance with the DAMS across the Scheme.</p>	<p>The Applicant updated the OEMP that was submitted in August 2019, after deadline 7 closed, so it was registered as an Additional Submission [AS-085], following the receipt of the comprehensive set of comments from Historic England. A further revised OEMP will be submitted to the Examination at deadline 8. Highways England is conscious of the need to ensure the DAMS and OEMP are aligned.</p>
5.1	Comments on updated OEMP (REP6-012)	
	Matter Raised	Highways England's Response
5.1.1	<p>The OEMP as currently drafted deals with both preliminary works and main works. We consider that there is inconsistency and a gap in how the preliminary works are dealt with in the OEMP and other documents, notably the draft legal document which will give the consent for the Scheme (see our comments on Article 2 'commence' above). This is then compounded by a risk that preliminary works (primarily comprising archaeological mitigation) could be undertaken in the expectation that delivery of the rest of the Scheme would follow, but with no such guarantee in place. HBMCE's concern is to avoid any risk that the landscape could have been subject to extensive archaeological excavation, but no road scheme would follow. We consider that these points are critical to resolve.</p>	<p>Highways England considers that there is no risk that archaeological investigations would take place without the rest of the Scheme taking place, as these would not commence until the DCO has been granted by the Secretary of State. In any event that the OEMP is clear as to what forms the preliminary works and what forms the main works.</p> <p>Highways England and Historic England are holding positive discussions on the issues of concern to Historic England and Highways England considers that the issues are capable of resolution.</p> <p>Please also refer to the response to paragraph 5.2.15 below.</p>

5.1.2	<p>HBMCE has also highlighted the role of the OEMP, aligned with the DAMS, in ensuring that there will be no unintended consequences for heritage assets and the historic environment in general as a result of either individual areas of works or mitigation measures associated with other environmental topics. We have stressed the need to ensure that there is a robust process for heritage input in relation to the development of documentation for non- heritage works that sit under the OEMP. We noted above in section 4 that we understood that Highways England were looking to address our comments in this regard in the next iteration of the OEMP.</p>	<p>Highways England has been discussing the interaction of the OEMP and the DAMS and the role of the SCDG and the HMAG with Historic England and further changes have been made to the OEMP at deadline 8 to seek to add further clarity within the certified documents.</p>
5.1.3	<p>The updated draft of the OEMP submitted at Deadline 6 provides for a new consultation group, the Stakeholder Design and Consultation Group (SDCG) formed from the same member organisations as HMAG. HBMCE advised the Examining Authority in our response to question De.2.5 that we remained in discussion with Highways England in relation to the formation of the new consultation group. As yet there are no Terms of Reference for the new expanded group, and there is also a need for clarity between the specific topic areas which will be addressed to each group to avoid any confusion as to their remits.</p>	<p>The terms of reference for the SDCG, alongside the design principles, have been included in the OEMP since the version that was submitted at deadline 4 [REP4-020].</p>
5.1.4	<p>At present the REAC tables only refer to the involvement of HMAG. Updates to confirm the involvement of HMAG and the SDCG will need to be made as appropriate to their Terms of Reference once these have been agreed.</p>	<p>The OEMP submitted at deadline 8 has made changes to refer to the SDCG in place of the HMAG at appropriate locations.</p>
5.1.5	<p>There is need for more consistent cross referencing both between the main text of the document and the REAC tables, within the REAC tables where various mitigation measures complement, work alongside, are reliant on others, or must be undertaken in accordance with others, as well as to other documents such as the DAMS and the dDCO.</p>	<p>Making such amendments throughout the document is not considered necessary as it is for the contractor(s) to fully understand the Scheme documents as a whole, rather than relying on cross referencing to elements which must be undertaken. Working in accordance with the OEMP, DAMS and the dDCO is legally binding on the contractor, however key cross references have been added at key locations to aid clarity.</p>

5.1.6	It would be helpful for greater clarification to be provided in the REAC tables in relation to the roles of key personnel to confirm how they will integrate into the scheme e.g. Archaeological Clerk of Works and how their responsibilities coincide with the proposed mitigation measures	The role of the ACoW is explained within Table 2.1. It therefore not considered necessary to amend the REAC tables to reflect this.
5.1.7	Whilst we recognise that some elements of the main works will necessarily be different to the preliminary works, we have noted some inconsistency in drafting between mitigation measures across both stages on the same topics. We have noted that there are not always equivalent mitigation measures in both the preliminary and main works where we might expect to see a consistent approach. We will be discussing these apparent inconsistencies with Highways England in order to understand why the approach has been varied.	<p>This is due to the differences in the nature and scale of the works. For example, MW-NOI4 requires the contractor to have a specific Noise and Temporary Rehousing Policy, whereas PW-NOI6 only requires the contractor(s) to offer noise insulation and temporary rehousing when the outlined parameters are met. This is because it would be disproportionate to require all preliminary works contractors to have a specific Noise and Temporary Rehousing Policy when their works are extremely unlikely to result in the need for noise insulation or temporary rehousing e.g. the ecological and archaeological works.</p> <p>Some inconsistencies have been remedied in the D8 OEMP e.g. ensuring HMPs, SSWSIs and archaeological Method Statements apply in both preliminary and main works and that contamination provisions apply in preliminary works.</p>
5.1.8	<p>The OEMP should set out how the environmental effects of the Scheme will be managed, including through design mitigation during construction and operation. We would expect the OEMP to set out how the Scheme will address the range of detailed design issues that we raised in our Relevant Representations, comprising lighting, signage, fencing, drainage, balance ponds, landscaping including tree planting in and adjacent to the WHS; and then how the Scheme will address our comments regarding the construction period temporary infrastructure and reinstatement of affected land post construction.</p> <p>This document has been subject to revision and discussions since we last provided comments to the Examining Authority, but further discussion is still required regarding the Design Principles and Design Commitments incorporated in the OEMP. It is essential that these give us confidence that a scheme of the highest design quality can be delivered in practice, and that decision-making at the Detailed Design Stage will not deviate from the 'vision' for the scheme that ultimately</p>	<p>Highways England can confirm that discussions are on-going with Historic England, with positive workshops taking place on the 19th and 28th of August, and changes have been made to the OEMP at deadline 8 as a consequence of those and further ongoing discussions.</p> <p>The DCO design, the design vision, commitments and principles address precisely the matters raised in Historic England's paragraphs 5.17-5.19, while still allowing the crucial limited flexibility required for a detailed design that can ensure this nationally significant scheme can be delivered. They form the basis upon which that detailed design will be developed; and the provisions for consultation in the REAC tables and section 4 ensure that relevant stakeholders will be able to 'check' this as the design progresses. This includes the key engineering elements and NMU routes.</p> <p>Section 4 reflects the emphasis that Highways England has placed on the importance of the WHS flowing from its cultural heritage objective for the</p>

<p>these Principles and Commitments need to establish. Further detailed comments on the Detailed Design are provided below.</p> <p>Throughout our advice HBMCE has been looking to ensure that the OEMP will reinforce the role of heritage, through heritage led design, and that it will function as a critical document in the delivery of a high quality Scheme that responds positively to the surrounding historic environment rather than seeing it as a constraint to decision making primarily centred on engineering flexibility.</p> <p>5.15. In our responses to the Design focused questions from the Examining Authority (De.2.1-2.5) we indicated that would hope the updated version of the OEMP due to be submitted at Deadline 6 would address the advice that we have provided to date. We asked the Examining Authority to note that further discussions were on-going regarding the further development of the OEMP in order to address the concerns they had raised in relation to the need for a coherent design vision and design principles appropriate to the international importance of the landscape.</p> <p>HBMCE are meeting with Highways England to discuss the further development of the Design Principles and Design Commitments included in the OEMP in order to ensure that there can be sufficient confidence in how decisions will be made at detailed design stage with the Department for Transport’s cultural heritage objective at its core. We have requested that Highways England convene a workshop so that all relevant specialists from both Highways England and HBMCE can attend and detailed discussion can take place. We would look to engage in detail with remaining issues with the design vision, commitments, principles, and the integration of these at this design workshop considering where there are gaps that could be filled.</p> <p>Design parameters should provide the basis for delivering the scheme aspirations and vision. They should be sufficiently clear and unambiguous in their design intent to provide confidence that the detailed scheme will deliver against the overall vision and ensure the</p>	<p>Scheme to conserve and enhance the WHS, alongside its other scheme objectives.</p> <p>As stated in the OEMP, the design vision has informed the principles and commitments in the OEMP.</p>
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	<p>delivery of a scheme of the highest design quality. In relation to this Scheme, this is particularly pertinent because we would expect the design parameters to have the international importance of the WHS at their core, in line with the Department for Transport’s cultural heritage objective for the Scheme.</p> <p>We would expect the detailing of key engineering elements to be covered as part of the discussion at the workshop to ensure that their design is as comprehensively integrated into the character of the landscape as possible, that opportunities to reduce land take and mitigate visual impacts have been maximised, and that the quality of each individual element responds positively to and makes its contribution to the overall design vision for the Scheme.</p> <p>Similarly we would expect the NMU articulation and form, how they relate to sections of the A303 and A360 made redundant by the scheme; the removal of road infrastructure that will be made redundant by the scheme and the proposed reinstatement of land within the former highway boundary beyond that required for new NMU routes to be covered as part of this discussion. These are issues that must be addressed to ensure that the balance between the needs of the various user groups and heritage considerations is sensitive and appropriate.</p>	
<p>5.1.9</p>	<p>In our response to the Examining Authority on the question of whether the statutory bodies should fulfil their normal role in having the final decision on the form and content of the DAMS (CH.2.1) as well as in relation to other stages of the mitigation programme (CH.2.9 (x) and (xi)), we indicated that we considered it appropriate for HBCME jointly with Wiltshire Council (as local planning authority) to provide independent confirmation to the Examining Authority (and through it to the Secretary of State) that the final version of the DAMS document is appropriate and proportionate in relation to international obligations, the requirements of national policy (NPSNN 5.140) and all relevant published guidelines and standards. We also indicated that discussions with Highways England in relation to how best to fulfil our</p>	<p>Highways England has worked closely with Historic England in the development of section 4 of the OEMP (since its submission at deadline 4), which sets out the consultation process on design; as well as in relation to the consultation processes set out in the REAC tables and in the DAMS.</p> <p>As part of this, it details on how the consultation process is expected to work in practice to give Historic England comfort that it will have a key role in the project moving forward.</p> <p>Furthermore, the OEMP and the DAMS has developed over the Examination to seek to demonstrate to Historic England that appropriate safeguards are in place in relation to heritage. Specifically, the DAMS submitted at deadline 8</p>

<p>statutory role and the level of our engagement in other elements of the Scheme were on-going.</p> <p>HBMCE has highlighted the need to ensure that the procedures for consultation and engagement with Historic England in the discharge of requirements are adequate in light of the status of the WHS, the need to secure the protection of scheduled monuments in the landscape during construction, and the need to ensure appropriate mitigation of impacts on archaeological remains.</p> <p>Due to the international importance of the WHS, there is a greater need for certainty over the safeguards included in relation to heritage under the Scheme. In addition, the WHS inscription and the nature of the Scheme entail a greater potential than might usually be expected for unintended consequences for heritage as a result of non-heritage works. For example, the laying down of pipes; surveying and investigation of land; cutting back tree roots; removal of apparatus; management of contaminated land, can all have unintended consequences for archaeological remains in the area, and it is important that we ensure there will be appropriate safeguards in respect of these potential impacts under both the DAMS and the OEMP. It is therefore important that in their roles as statutory consultees both HBMCE and Wiltshire Council are involved in approval of key documents and project milestones along the Scheme.</p> <p>In our Relevant Representations, Written Representations and other submissions we have highlighted the need for further discussions regarding the extent of engagement including that of an appropriate consultation mechanism for HBMCE and Wiltshire Council as statutory consultees. Consequently, we have requested clarification from Highways England about the scope and hierarchy of documents that would be produced as part of the delivery of the Scheme. This would ensure that we can have clarity over the safeguards that are proposed and ensure that where we would be engaged/consulted we would provide added value and our engagement post consent would be considered necessary and proportionate. We have requested this information to help inform our response with regards to how best to fulfil our role as a statutory consultee, as adviser to the State Party,</p>	<p>has been updated to emphasise how it addresses each of the “non-heritage works” examples that Historic England notes.</p> <p>As noted above, there have been two recent positive workshops on design matters, which have accompanied continuous written and oral dialogue between the parties on all other matters. Highways England has also produced schematic summaries of the consultation provisions of the relevant documents, while also explaining that all of the documents apply equally, and all must be complied with; there is no hierarchy as such. Those discussions have been consistently constructive and in light of that and the good progress that continues to be made, Highways England is confident that agreement should be capable of being reached on both the level of safeguards and process within the documentation.</p>
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	<p>and as a member of the HMAG forum through the process of consultation and engagement post-consent including in relation to revision to documents. This clarification has yet to be provided in full.</p> <p>HBMCE is progressing discussion with Wiltshire Council regarding how we might work jointly in the event the DCO is granted regarding our roles as statutory consultees. We do not consider that the current proposals for our involvement accurately reflect the breadth of our role as set out in our Written Representations (Section 2) and 3.4 above. Consequently we consider that further work to clarify how our involvement could assist in providing a level of safeguarding under the Scheme with regard to the significance of designated heritage assets (including that derived from their settings), and nationally and internationally important archaeological remains is needed.</p> <p>We have set out [in this statement], in relation to individual areas of the Scheme and key documents proposed for certification, where HBMCE currently considers there is need for our involvement. This is subject to additional refinement based on our further review of the documentation provided to HBMCE this week by Highways England outlining the consultation and engagement process as currently drafted, and placing this within the context of the timetable for the Scheme. In addition we await further clarification regarding the document relationships and hierarchy.</p> <p>HBMCE will provide as thorough a response to the Examining Authority in due course to provide greater clarity regarding this issue and confirm where we consider HBMCE needs to engage to assist in providing certainty over the safeguards for the WHS and other designated heritage assets under the Scheme.</p>	
<p>5.1.10</p>	<p>DCO.2.14</p> <p><u>“extent of deviation regarding the portals”</u></p> <p>We highlighted in our Relevant Representations and have subsequently continued to query the reference to the proposed limit of deviation of up to 200m for the proposed western portal. Whilst we welcome the clarification in the latest updated version of the draft</p>	<p>The requirement for, and the Applicant’s assessment of the effects of, the limits of deviation for the western tunnel portal has been considered in detail during the course of the examination. The need for the limit of deviation, its proportionality and necessity are outlined in response to DCO.1.26, in the Applicant’s summary of submissions at the first DCO ISH [REP4-029] under agenda item 3.5(i) (see also the appended technical note). The Applicant has responded on the assessment point in response to DCO.1.25 [REP2-030]</p>

	<p>legal document that the limits of deviation are no longer to be taken as being “approximate”, we remain concerned as to the impact that the deviation may have on the western and eastern portals and to a lesser extent Green Bridge 4 and Longbarrow junction.</p> <p>The lack of design details relating to these elements does not provide clarity over the impacts the deviations could have. We would like Highways England to provide this clarity (through visualisations or written clarification of impact). We remain unclear as to how the visual impact of the Scheme would change if significant changes to the length of the tunnel were made. In a situation where the extent of deviation utilised were such that it would necessarily result in a reduction of the length of the tunnel canopy (extent of cut and cover section of cutting Work 1E), we are unclear as to what visual impact this would have. We have not been able to identify a design commitment or principle that relates specifically to the design vision for portal design incorporating “grassed canopies to conceal them within the landscape” (OEMP 4.2.7 c) as illustrated in Sheet 6 of the Engineering Section Drawings, and Sheet 6 of the Works Plans. We remain unclear as to how the conclusions of the HIA, which we understand has assessed a 200m canopy, have taken the limits of deviation into account.</p>	<p>and LV.1.21 [REP2-033] explains how the limits of deviation were taken into account when assessing the Scheme. This was also considered and responded to at the DCO ISH on 30 August, for which a summary of oral submissions by the Applicant is submitted at Deadline 8.</p> <p>In summary, the minimum cut and cover section committed to at D-CH6 and D-CH7 of the OEMP referred to below was assessed as a worst case from a visual impact perspective and so any extension of that cut and cover will improve the position. Similarly, DCO.1.25 confirms that the significant effects from a heritage perspective, as reported in chapter 6 of the ES [APP-038] and in the HIA, are unchanged by the exercise of these limits of deviation.</p> <p>The Applicant has committed to a cut and cover tunnel (canopy) at the western portal and secured that it shall extend to at least chainage 7+200m through design commitment D-CH6 in the OEMP. In respect of the eastern portal please see D-CH7. Other design commitments relevant to portals and their surroundings include D-CH9, D-CH16, D-CH17 and D-CH22. Landscaping for the Scheme, including that on top of the cut and cover tunnel section, is subject to requirement 8 which requires the landscaping Scheme to be based on the mitigation measures included in the Environmental Statement and Historic England is required to be consulted on the landscaping scheme before it is approved.</p>
<p>5.1.11</p>	<p>DCO.2.14 <u>“restriction of future archaeological research”</u></p> <p>This is a matter that we dealt with in paragraphs 111-115 (Rep 4-84). However it is also a point the Examining Authority themselves picked</p>	<p>As is acknowledged by Historic England's response the purpose of the tunnel restrictions is to protect the integrity of the tunnel and the safety of its users. It is not intended to restrict archaeological research.</p> <p>The principles of the restriction are agreed with the National Trust and the detailed drafting of the restriction is very nearly agreed. The restriction has</p>

<p>up in ExA question DCO. 2.26 Article 22 – Compulsory Acquisition of Rights. The question posed was whether there are any outstanding concerns as regards the power to impose restrictive covenants on groundworks on land above the tunnel and the implications that might have for archaeological investigations in the WHS.</p> <p>We noted in response to that question, and that response is equally pertinent to ExA question DCO.2.14, that we needed to identify an acceptable solution to enable archaeological work to continue within the WHS area, recognising that Highways England will want to ensure that this can proceed without affecting the stability of the tunnel.</p> <p>We had highlighted within our Relevant Representations the potential restriction of future archaeological research within the affected part of the WHS, and that this would be contrary to the WHS Management Plan. Discussions are continuing regarding a proposed “covenant” which would provide a framework enabling archaeological research to take place within the tunnel protection zone.</p> <p>We consider that the proposals for the “covenant” must ensure that the relevant safeguards will be in place so that archaeological research can continue.</p> <p>We continue to discuss matters with Highways England and are reviewing the documents that they have produced and we will provide more detailed comment on this. What may be useful to bear in mind is that those who want to do archaeological research in future may have no awareness of the discussions that are now taking place. The covenant therefore needs to be publically available so that those wishing to do archaeological research will be aware of the restrictions and procedures to be followed. Having a reference to this within the dDCO may be the best way to achieve this and we will be seeking to discuss this matter further with Highways England.</p>	<p>been shared with Historic England, other heritage stakeholders and the affected landowners.</p> <p>The DAMS [REP7-020] was amended to include a new section on the Tunnel Protection Zones (paragraphs 5.2.10 to 5.2.11) and to require the Applicant, together with National Trust and Wiltshire Council, to take steps to raise awareness of the existence of the restrictions.</p>
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5.1.12	<p>DCO.2.14 <u>“convenient”</u></p> <p>As we have noted in our previous submissions, whilst there may be basis for deviation that is “necessary” and appreciate that Highways England desire flexibility, we do not consider that the provision of infrastructure with scope for deviation on the basis of “convenience” is appropriate in a World Heritage Site and its setting.</p> <p>We would therefore request the Examining Authority consider whether the reference to “convenient” should be deleted in the dDCO.</p>	<p>Please see Highways England's response to SWQ DCO.2.11 (REP6-027) which set out why it is not considered that the use of 'convenient' unreasonably widens the scope of the potential to use the limits of deviation. The limits of deviation in article 7 have been carefully crafted to allow a proportionate degree of flexibility within which the authorised development would be delivered, and this degree of flexibility has been assessed in the Environmental Statement, which is being examined and discussed in detail by all Interested Parties during the current examination process. As such, should the DCO be made, the limits of deviation will have been accepted by the Secretary of State and so should be able to be utilised when the beneficiary of the DCO sees fit. Simply referring to a necessity test, rather than convenience too, would be an inappropriate and unnecessary restriction on the powers conferred by the DCO. Please see also the summary of oral submissions in respect of the DCO ISH on 30 August 2019, submitted at Deadline 8, which also considers this issue.</p>
5.1.13	<p>DCO.2.23</p> <p>In our response to the Examining Authority on this question whether there were outstanding concerns regarding regulation of intrusive surveys we referred to paragraphs 140-143 of our response to the d2DCO on 21 June (REP4 – 084).</p> <p>The provision as drafted refers to various works that can be carried out on “any land which is adjacent to, but outside the Order limits”. We note the response from Highways England that this would be linked to the OEMP and DAMS and their view on how the works will be undertaken. However we remain unclear as to why works “adjacent to” is appropriate, particularly in view of the sensitivities of this landscape and potential unintended consequences that could arise – i.e. that of inadvertently enabling works to the Stonehenge scheduled monument, under the terms of the DCO. We would therefore request the Examining Authority consider whether the reference to “adjacent to” should be deleted in the dDCO.</p>	<p>The Applicant responded to paragraphs 140-143 of Historic England's review of revision 2 of the DCO in REP6-035, item 38.</p> <p>The Applicant has explained why the words "adjacent to" are appropriate in response to question DCO.1.36 [REP2-030] and it was discussed at the first DCO Issue Specific Hearing - see the Applicant's summary under agenda item 3.9 [REP4-029].</p> <p>Since then the Applicant has further narrowed the application of the power in revision 5 of the DCO [AS-096] such that surveys may only be carried out when reasonably necessary for the purposes of the construction, maintenance or operation of the authorised development.</p> <p>In terms of protecting the historic environment during surveys carried out under this power, the measures in the DAMS apply, see paragraphs 5.2.65 and 5.2.66. Further drafting has been added to the DAMS to emphasise this position in the draft submitted at Deadline 8 – please see paragraph 5.1.3.</p>

5.1.14	<p>DCO.2.64</p> <p>In our response to the Examining Authority on this question regarding the details of consultation and whether there were any outstanding concerns on this provision we referred to paragraph 191 of our response to the d2DCO on 21 June (REP4 – 084).</p> <p>As noted in our response to the Examining Authority’s question we noted the response that the Council had made to this provision and the reference to the A303 Sparkford to Ilchester DCO scheme.</p> <p>We welcome the inclusion of a Requirement regarding the details of consultation. We consider it would be helpful for the Secretary of State to have a report setting out the consultation that has been undertaken, and for that report to be provided not only to the Secretary of State but also the relevant consultees. However we would consider it would also be helpful if a copy of the consultation responses were also enclosed with that consultation report, so that the Secretary of State would have not only the undertaker’s summary, but the actual comments from the consultees to hand.</p> <p>We will continue in discussions with Highways England regarding the inclusion of the consultation responses within the consultation report to the Secretary of State</p>	<p>Such changes were provided for in the DCO submitted at Deadline 6 [REP6-005] and provision has been made in the updated draft DCO submitted on 27 August for the Secretary of State to request consultation responses, in the same way that PINS may request consultation responses in support of the consultation report that accompanies a DCO application.</p>
5.1.15	<p>Article 2 definition of “commence” (and Requirement 1(1) Interpretation)</p> <p>Our comments on this can be found in paragraphs 37 – 52 of REP4 – 084). We note that Highways England have commented on our submissions in their Comments on any further information requested by the ExA and received to Deadline 4 and 5 regarding the draft Development Consent Order” (Rep 6.34). We continue in our discussions with HighwaysEngland.</p> <p>As noted in our submissions, the current drafting of this definition and inclusion of “archaeological investigations and mitigation works” is an</p>	<p>The Applicant's position is as set out in the DCO ISH summary [REP4-029] under agenda item 3.3(i): those works which are both excluded from the definition of “commence” and included within the definition of “preliminary works” are not de minimis, rather they are subject to appropriate controls through the preliminary works OEMP under requirement 4 and under the DAMS under requirement 5, without the need to also apply the pre-commencement requirements. This is the case with the archaeological investigations and mitigation which fall within the definition of the "preliminary works" in paragraph 1 of Schedule 2. Works excluded from the definitions of commence and preliminary works are considered in the Applicant's response to DCO.2.32 {REP6-027}.</p>

<p>issue for us with regards “scope” and “timing”. In terms of “scope” it is quite broad and would appear to encompass the “preliminary works” definition and the “preliminary works OEMP” definition as set out in Schedule 2 Part 1 of the d4DCO. Whilst we note the position of Highways England, and in particular that they consider that these works would be “de minimis”, we would query whether this would be the case. These preliminary works of archaeological investigation and mitigation works which are noted in both the Outline Environmental Management Plan (OEMP) and the Detailed Archaeological Mitigation Strategy (DAMS) are quite extensive, would be intrusive and do not appear to have been distinguished from those archaeological investigations and mitigation works excluded from the definition of “commence”. Accordingly it is difficult to understand how they can therefore be considered to be “de minimis”.</p> <p>Our understanding is that the Requirements would only “bite” when a material operation had taken place, and as such, those works which had been excluded from “commence” could be carried out without reference to those Requirements. Whilst noting Highways England’s comment that the statutory instrument takes effect when it comes into force, this is different to “commence” and what works can take place. Although it may be unlikely that the works of archaeological investigations and mitigation works would take place and that the project would not then follow on, as the project has not “commenced”, there is that risk that extensive works would have been done, with no follow through.</p> <p>We will continue to discuss the issue with Highways England and it may be that further clarification of the commencement of Preliminary Works and the timetabling of the award of the Main Works contract and appointment of the Main Works contractor could more accurately address both of our positions in the matter.</p>	<p>For the avoidance of doubt the effect of a work or operation being excluded from the definition of "commence" is to enable that work or operation to be carried out without first discharging the pre-commencement requirements being requirements 6 (protected species), 8 (implementation and maintenance of landscaping), 9 (traffic management) and 10 (drainage). Works or operations excluded from the definition of “commence” remain subject to the other requirements, including requirement 5 which secures compliance with the DAMS.</p> <p>The Applicant significantly re-drafted requirement 4 in revision 5 of the DCO [AS-096] to provide for Secretary of State approval of the main works and preliminary works CEMPS, produced in accordance with the main works and preliminary works OEMPs. In the case of the preliminary works, they may not “begin” until the Secretary of State has approved the preliminary works CEMP, following consultation as specified in the preliminary works OEMP. It is therefore the Applicant’s position that the preliminary works which are not de minimis are adequately regulated. There is no question of the preliminary works beginning without requirement 4 applying to them. Requirement 4 comes into effect as soon as the Order comes into force and ensures that Preliminary Works cannot begin until the Preliminary Works CEMP has been approved by the Secretary of State.</p> <p>Preliminary works will not commence until the DCO for the scheme has been made. Through the funding statement submitted with the application and in response to questions of the Examining Authority it has been demonstrated that the Scheme has the necessary funding commitment to allow the Scheme to be delivered once approved. As a consequence there is no risk of archaeology being undertaken and the Scheme not being taken forward subsequently.</p> <p>The Applicant and Historic England discussed these issues, including timetabling of contract awards, prior to the DCO issue specific hearing on 30 August and the Applicant understands that, subject to final confirmation, Historic England is now satisfied.</p>
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5.1.16	<p>Article 14 Protective Works to buildings</p> <p>Article 29 Temporary use of land for constructing the authorised development</p> <p>Our comments on this can be found in paragraphs 135 – 139, and 153-157 of REP4 – 084. We note that Highways England have commented on our submissions in REP 6.34.</p> <p>We understand that Article 14 is included on a precautionary basis and that Article 29 is in relation to the temporary use of land. However due to the scope of “building” definition, there could be unintended consequences to designated heritage assets caught by such provisions (such as scheduled monuments, as well as listed buildings) arising through the application of these Articles. Discussions are continuing on potential revisions to these provisions in order to address our concerns.</p>	<p>Discussions with Historic England continue on this issue and took place on 30 August prior to the DCO ISH. The works carried out on land temporarily possessed under article 29, or to protect buildings under article 14, would be subject to the requirements of the DAMS and OEMP. These would include the need to obtain the approval of Wiltshire Council in respect of SSWSI and consult heritage partners as directed in the DAMS – see paragraphs 5.1.3, 5.2.65 and 5.2.66 of the DAMS submitted at Deadline 8.</p> <p>These measures ensure the protection of the historic environment. Highways England understands that Historic England is considering this explanation.</p>
5.1.17	<p>Article 58 - Arbitration</p> <p>Our comments on this can be found in paragraphs 169-172 of REP4 – 084. We note that Highways England have commented on our submissions in REP 6-34.</p> <p>We welcome the comments made by Highways England regarding their intention not to end up in arbitration with another Government body. We further note the provisions within the OEMP regarding the resolution of disputes and will continue in discussions with Highways England.</p> <p>We would however note that within our comments we referred to Secretary of State’s stated Objectives for the Scheme included a Cultural Heritage Objective, and that in light of the highway infrastructure proposed in a World Heritage Site, a Protective Provision could be included within the DCO to provide protection for the World Heritage Site.</p>	<p>The Applicant is in discussions with Historic England in connection with its proposals for protective provisions. Please see also the summary of oral submissions in respect of the DCO ISH on 30 August 2019, submitted at Deadline 8, which also considers this issue.</p>

	<p>As the Examining Authority will be aware, the proposed Scheme would introduce a new piece of contemporary infrastructure traversing the Stonehenge element of the SAAS WHS and there does not appear to be a comprehensive, holistic approach to heritage set out within the legal document as currently drafted. We would request that consideration be given for a Protective Provision to be included in the dDCO which explicitly refers to the Scheme being in the WHS and its setting and that this should be given due consideration in the preparation, delivery and future management of the Scheme and any issues surrounding the DCO provisions. The Protective Provision would be an important inclusion, not only in terms of it being a good safeguard, but also to demonstrate to UNESCO and ICOMOS that the WHS status is formally recognised. We have previously raised this in our submissions to highlight the cultural objective of the Scheme and the importance of the WHS so that this affirms the importance of heritage (and our engagement).</p>	
5.1.18	<p>Schedule 2 requirement 8 – implementation and maintenance of landscaping</p> <p>Our comments on this can be found in paragraph 189 of REP4 – 084. We note that Highways England have commented on our submissions in REP6-34. We welcome the amendment which referred to consultation with Historic England with regards the World Heritage Site. However, the World Heritage Site has a setting that extends beyond its inscribed boundary which includes archaeological remains within the surrounding landscape, and therefore we consider we should be consulted in relation to the Order limits rather than just in relation to the World Heritage Site. We will continue in our discussions with Highways England.</p>	<p>As noted in the response, the Applicant has previously responded to the matters raised in Historic England's review of revision 2 of the DCO.</p> <p>In view of the particular circumstances applying to this Scheme, the Applicant amended requirement 8 in revision 5 of the DCO [AS-096] to provide that Historic England is to be consulted on the landscaping scheme applying to works both within and outside the WHS.</p>
5.1.19	<p>Article 2 definition of “maintain”; “illustrative”, “ancillary works”, “authorised development”</p>	<p>As noted in the submission, the Applicant has previously responded to the issues re-iterated here. On the issue of "illustration" the Applicant has provided detailed submissions on this in response to question DCO.2.5 [REP6-023].</p>

	<p>Our comments on these can be found in paragraphs 53-74, 76-82 of REP4 –084. We note that Highways England have commented on our submissions in REP6-34 and responded to the Examining Authority’s questions on these points as well. We note the amendment to the definition of “maintain” and clarification provided on the other terms. These do however have a bearing on other issues that we have raised and will be subject to further discussion – for example the reference to Work No 1D below and also engagement and consultation as referred to in Section 3. The issue with regards “illustration” is also a point for discussion in relation to detailed design and design principles. Once those discussions have progressed to a conclusion we will be able to comment further on these provisions.</p>	
5.1.20	<p>Article 2 definition of “Order limits” and Article 4 (1)</p> <p>Our comments on this can be found in paragraphs 75 and 87-96 of REP4 –084. We note that Highways England have commented on our submissions in REP6-34. We continue in our discussions with Highways England.</p> <p>Our query here is whether the extent of the provisions set out in the d4DCO would still need to apply post construction for the whole of the Order limits area. Whilst it may be understood that the provisions of say Article 15 are appropriate for the period of construction, we would query whether it would still be appropriate in say 15 years’ time post construction and when the infrastructure is in operation. It would therefore appear to be appropriate that post construction the extent of the Order limits area could be “shrunk” so that the respective legislative duties of HBMCE (in relation to the historic environment as the Government’s statutory adviser) and Wiltshire Council (as the relevant local planning authority) would then be able to be discharged over those areas that were no longer needed to be covered by the Order limits. Our understanding would be that following the construction, and only in relation to that land that was</p>	<p>The Applicant has responded to this point at item 20 of [REP6-035].</p> <p>In summary, shrinking the order limits is neither practicable nor an appropriate way of dealing with the issues of concern. So far as the Applicant is aware there is no precedent in any development consent order that has been made that would have this “shrinking” effect, and it is for a good reason. The Order is designed to operate to the Order limits, for the construction and maintenance of the authorised development.</p> <p>Article 15 is considered in in the Applicant's response to question DCO.2.22 [REP6-027. The Applicant amended article 15 (authority to survey and investigate land) in revision 5 of the DCO [AS-096] to clarify that the power may only be exercised for the purposes of the construction, maintenance and operation of the authorised development. Its exercise is subject to requirements, including compliance with the DAMS and OEMP and the Applicant has made amendments to the DAMS submitted at Deadline 8 to seek to ensure that Historic England’s concerns on Article 14 and 15 and future maintenance and other powers under the DCO are satisfactorily addressed. The Applicant has also agreed to include explanatory wording in the updated final Explanatory Memorandum around the intent behind Article 4(2). These points were discussed with Historic England on 30 August and</p>

	necessary for the operation and maintenance of the infrastructure, the rest of Order land ground surface would become redundant for highway purposes. It may be that, similar to the Protective Works to Buildings article, a time period is imposed for the scope of the article to be implemented, so that at the end of the requisite time, the “usual” planning permission/consents regime is then in play.	from submissions made at the ISH, the Applicant understands Historic England to be broadly satisfied, subject to final confirmation.
5.1.21	<p>Article 4(2) development consent etc.</p> <p>Our comments on this can be found in paragraphs 97 - 104 of REP4 – 084. We note that Highways England have commented on our submissions in (REP6-34). We continue in our discussions with Highways England.</p> <p>We understand from the commentary and discussions that the reference to “enactment” and “adjacent” in relation to article 4 (2) is to “local” enactments that may be in existence, for example with regards to Victorian turnpikes. Should this be made clearer in the drafting of the dDCO this could then address the points that we have made in regard to this provision.</p>	The Applicant considers that article 4(2) is clear and could not reasonably be construed as overriding all law of general application. As mentioned above, in discussions with Historic England, the Applicant has agreed to add further to text to the final version of the Explanatory Memorandum to make this more apparent to future readers of the Order.
5.1.22	<p>Article 12 Access to works; Article 13 Discharge of Water</p> <p>Article 17 Felling or lopping of trees and hedgerows Article 31 Statutory undertakers</p> <p>Schedule 2, Requirement 7 – contaminated land and groundwater</p> <p>Our comments on this can be found in paragraphs 126 – 130; and 131 – 134; 149 – 152; 158 – 162; and 186 -188 of REP4 – 084). We note that Highways England have commented on our submissions in (REP6-34). We deal with engagement and consultation more fully in Section 3 below. Once these discussions have progressed to a conclusion we will be able to comment further on this amendment</p>	As noted in the response, Highways England has previously responded to these matters and discussions with Historic England continue in a positive fashion.

5.1.23	<p>Article 56 - certification of plans</p> <p>Our comments on this can be found in paragraphs 163 -168 of REP4 – 084. We note that Highways England have commented on our submissions in REP6-34. We welcome the amendments made to Schedule 12 and will continue with our discussions to ensure that the correct document references are used.</p>	<p>As noted in the response, the Applicant has previously responded to the points referred to.</p>
5.1.24	<p>Schedule 1 Authorised development – Work No 1D</p> <p>Our comments on this can be found in paragraphs 177 - 178 of REP4 – 084. We note that Highways England have commented on our submissions in REP6-34.</p> <p>The works are set out in Schedule 1 to the draft legal agreement and as currently presented, as they are bunched together, could lead to unintended consequences should there be amendments to designs of elements of infrastructure that do not also provide for consultation should amendments be proposed. We will continue in our discussions with Highways England regarding this issue.</p>	<p>As stated in REP6-034, item 50, if development consent is granted, Historic England, and other specified parties, will be consulted on the detailed design of Green Bridge No. 4 (and other listed parts of the scheme) as set out in section 4 of the OEMP [REP6-011]. Clearly if the detailed design of elements of the scheme not explicitly listed in section 4 of the OEMP would affect the detailed design of elements that are listed, those effects would naturally need to be included in any wider consultation under section 4 of the OEMP. How the Works are labelled in Schedule 1 to the DCO in this context would not change that.</p> <p>In addition, under Requirement 3 of the DCO, before agreeing to any departure from the relevant plans and drawings, the Secretary of State must consult the planning authority and any person considered appropriate having regard to the proposed amendment in question. Clearly if an amendment in question could impact on a heritage matter, it is likely the Secretary of State would consider consulting Historic England would be appropriate in the circumstances.</p>
5.1.25	<p>Schedule 2 requirement 1 (2) b - interpretation</p> <p>Our comments on this can be found in paragraphs 179 -181 of REP4– 084. We note that Highways England have commented on our submissions in REP6-34. We will continue in our discussions with Highways England regarding this matter. We deal with engagement and consultation more fully in Section 3 below. Once these discussions have progressed to a conclusion, we will be able to comment further on this amendment.</p> <p>Schedule 2 requirement 5 archaeology</p>	<p>As noted in the response; the Applicant has responded to the matters previously raised and is in discussions with Historic England. The version of the DAMS submitted at Deadline 8 reflect further detailed discussion with heritage stakeholders, including Historic England.</p>

	<p>Our comments on this can be found in paragraphs 185 - 186 of REP4 – 084. We note that Highways England have commented on our submissions in REP6-34. We continue in our discussions with Highways England and note that this is linked with the discussions we are having on the DAMS as set out in Section 4 below</p>	
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6 Stonehenge Alliance (Stonehenge Alliance (REP6-085, REP6-086, REP7-048, REP7-049, REP7-050 and AS-074))

6.1	Comments on Second Written Question responses	
	Matter Raised	Highways England's Response
6.1.1	<p>[In response to Tr.2.1]</p> <p>The Stonehenge Alliance's concerns about the traffic forecasts for the project relate to the narrow range of forecasts used by Highways England to support their application. We consider that they do not reflect the uncertainty about future traffic forecasts that is now recognised by the Department of Transport. We are also concerned that they forecast higher levels of growth than have occurred over the past 15 years. In addition, Highways England and its predecessors have a record of producing forecasts in support of projects, which overstate the actual traffic when the project is completed.</p> <p>As Highways England note in their response (Paragraph 2), the Department for Transport (DfT) has adopted a scenario-based approach in the National Road Traffic Forecasts 2018. These scenarios are not "extreme" as claimed by Highways England in Paragraph 7, allegedly quoting Paragraph 2.4 of the DfT document. In fact, Paragraph 2.4 states the direct opposite: "the range of scenario forecasts is not considered to represent extremes"². In reality, DfT's position is that the scenarios they tested represent a number of equally likely projections for future traffic growth. The fact that one scenario is significantly lower (or higher) than others does not mean it is extreme, simply that the factors that drive change in travel demand are expected to function differently. We acknowledge</p>	<p>The Applicant has previously responded in [REP3-013] para 16.4.69 to 16.4.71. to Stonehenge Alliance's assertion that historically forecasts for non-motorway trunk roads have overstated demand. This explained that, based on evidence in Highways England's Post Opening Project Evaluation (POPE) there is no evidence of consistent bias or overstatement in trunk road traffic forecasts. It also explained the changes in modelling methods introduced through WebTAG developments over a decade ago addressed the forecasting concerns raised in the Nicolaisen and Næss research Stonehenge Alliance again reference.</p> <p>The Applicant has responded previously to Stonehenge Alliance's concerns about the range of traffic growth forecasts adopted, most recently para 6.2.8 [REP7-021]. The applicant notes Stonehenge Alliance's agreement that DfT does not yet mandate the use of new scenario-based forecasts; the DfT have not incorporated the revised approach in the May 2019 update to TAG Unit M4 Forecasting and Uncertainty.</p> <p>Stonehenge Alliance continue to assert that they believe that there is much more uncertainty about future traffic growth. DfT National Road Traffic Forecasts 2018 (RTF 2018) present seven forecast scenarios. We misread and incorrectly expressed this range as 'extreme' in [REP6-032] in response to Tr.2.1. This however has no relevance to the point we made which reflected the insensitivity in the nature of the traffic impacts of the scheme to forecasting uncertainty. Stonehenge Alliance continue to assert that they believe a narrow range of forecasts has been produced. Figure 30, RTF2018</p>

<p>that DfT has yet to mandate the use of scenario-based forecasting for road schemes, but – as we noted in our Written Representation (REP2-129) – the Director of Roads (Patricia Hayes) has stated that “more emphasis will be given to appraising schemes against different scenarios reflecting DfT’s move to scenario forecasts for road traffic”. Given the importance and sensitivity of this project, there is a very strong case for the use of this new approach here.</p> <p>The Stonehenge Alliance remains convinced that there is much more uncertainty about future traffic growth than Highways England’s narrow range of forecasts assume. As we stated at Issue Specific Hearing 6 on Traffic and Transportation, estimated benefits will be over-estimated in a low growth future situation, while traffic speeds will be over-stated if growth is higher (REP4-055)</p> <p>As we noted in Paragraph 5.7.2 of our Written Representation (REP2-129), DfT acknowledge that previous modelling has significantly over-stated demand growth on non- motorway trunk roads over the past decade. While the base year for modelling has been updated to eliminate the impact of past errors, this does not eliminate the risk of them occurring in future.</p>	<p>that they refer to presents forecast traffic growth on the Strategic Road Network (SRN) for each of the seven scenarios. It should be noted that only Scenario 7 extends beyond the range of Scenarios 2 and 3, which reflect the same macroeconomic drivers as the low and high growth scenarios mandated by WebTAG M4 for the scheme assessment. For the Strategic Road Network, the additional scenarios tested in the RTF18 forecasts therefore only indicate that there might be more traffic on the SRN, relative to the range mandated in WebTAG M4.</p> <p>The purpose of the core, low and high forecasts which have been produced for the scheme in accordance with WebTAG Unit M4 to assist decision making is explained in TAG Unit M4 Section 3: “the core scenario will form the basis for the analysis reported in the Appraisal Summary Table and, as such, should represent the best basis for decision-making given current evidence” The core scenario forecasts have been produced in accordance with the guidance set out in Section 3.</p> <p>TAG Unit M4 Section 4: Defining the High and Low Growth Alternative Scenarios, sets out the purpose of the high and low growth scenarios by stating the Key questions each scenario is developed to answer.</p> <ul style="list-style-type: none"> • Under high demand assumptions, is the intervention still effective in reducing congestion or crowding, or are there any adverse effects, e.g. on safety or the environment? • Under low demand assumptions, is the intervention still economically viable? <p>Table 5.24 of the Forecasting Package [APP-301] shows that the core scenario operates well within capacity of a dual carriageway, that the nature of Scheme impacts are similar and Table 5.28 shows that flows on the scheme are only 8% higher in the High growth scenario and the scheme is therefore still effective in reducing congestion in this scenario.</p> <p>Table 7.1 Economics Package [APP-302] indicates a small increase in Present Value of Benefits (PVB) for the high growth scenario and a larger £64m reduction in PVB the low growth scenario. This is the evidence</p>
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		<p>attached to and reported in the Outline Business Case for the scheme, which was approved by DfT, HM Treasury and Cabinet Office in June 2019.</p> <p>While Stonehenge Alliance have repeated questions of forecasting uncertainty and bias raised in their Written Representation, they have not responded to the Applicant's previous explanations that the evidence they cite does not demonstrate risks of significantly lower forecasts for traffic using the strategic road network that they suggest. Furthermore, they do not explain, should additional forecasts of alternate scenarios be undertaken, what value these would have to the Examining Authority in understanding the merits of the scheme; this contrasts with WebTAG which, as summarised here, explains how the sensitivity analysis can be interpreted by decision makers to help them assess the merits of a scheme.</p>
<p>6.1.2</p>	<p>[In response to Tr.2.1]</p> <p>In the second part of their response Highways England proceed to argue that the project is required irrespective of future traffic growth, and therefore uncertainty about future traffic growth is not material. The Stonehenge Alliance disagrees with this position.</p> <p>Firstly, the economic case for the scheme is very weak. If traffic growth is lower than forecast, this will reduce the claimed economic benefits of the project and could reduce it to less than 1.0, which means that the negative impacts (in this case costs) would exceed the benefits. Of course this purely monetary assessment excludes some important negative impacts that have not been expressed in monetary terms in the appraisal.</p> <p>Secondly, The Stonehenge Alliance believes that the strategic case for intervention is already weak, as set out in Section 3 of our Written Representation (REP2-129). If traffic growth is lower than Highways England claim, then it will be weaker still.</p>	<p>The Applicant has not argued that the project should proceed irrespective of future traffic growth. The Applicant's response to Written Question Tr.2.1 para 6 [REP6-032], summarises the main traffic impacts and explains that these impacts are evident in all forecast scenarios and for all forecast years. Para 7 of the response, then sets out that, under a more extreme assumption of no additional growth in the period 2026 to 2041, the nature of these traffic impacts would not materially differ.</p> <p>As outlined in the response to paragraph 6.1.1, low and high growth scenarios have been assessed as per requirements of WebTAG Unit M4. WebTAG explains that the purpose of the low growth scenario, is to provide information for decision makers to help them judge uncertainty in forming their view whether the intervention is economically viable. The Present Value of Benefits for the low growth scenario is £64m lower than the core scenario as shown in Table 7.1 Economics Package [APP-302], which can be expressed as 6% of the scheme cost. This range of uncertainty is reported in the Outline Business Case for the scheme, which has been approved by DfT, HM Treasury and Cabinet Office in June 2019.</p> <p>It should be noted that there are positive and negative impacts of the Scheme which have not been expressed in monetary terms in the appraisal. The case for the Scheme [APP-294] summarises in Chapter 5 the strong economic, environmental and social impacts and not just those impacts which can be</p>

		monetised; the Applicant does not consider that the case for the Scheme is weak as believed by Stonehenge Alliance.
6.1.3	<p>[In response to Tr.2.1]</p> <p>In Paragraphs 8 and 9 of their response, Highways England refer to the issue of congestion on the M3 and its potential impact on the project. In Paragraph 8, they concede that their modelling, for a particular model year, of traffic speeds on the M3 does not vary with traffic flow.</p> <p>They then argue that this is immaterial because “only around 20% of traffic using the Scheme whose routeing may be affected by M3 congestion also use this section of the M3.” As they point out in REP4-034, one third of traffic using the scheme is also forecast to use the M3. The difference between this and the 20% quoted in this response, is presumably traffic that they claim would continue to use the A303 regardless of M3 congestion. We do not have access to their traffic model so cannot comment on the accuracy of these data. It would be very helpful for the ExA and interested parties to have access to the model, so that all parties could understand traffic patterns better and the model's sensitivity to a range of assumptions.</p>	The Applicant explained in paragraphs 6.2.3, 6.2.4, 6.2.5 [REP7-021] why Stonehenge Alliance's concerns that the effects of potential consequential congestion on the M3, are not material for the assessment of the Scheme impacts and why evidence of the traffic modelling rather than the model are shared with stakeholders.
6.1.4	<p>[In response to Tr.2.1]</p> <p>In REP4-034 they state that 20% of traffic originates or destines to the north and east of the M3 and could potentially switch to the M4/M5. Our understanding is that this is the 20% referred to in their answer. Highways England estimate that only 2% of current traffic might switch to the M4/M5 based on their assessment of current congestion on the M3. However a much higher percentage could switch if congestion continues to increase on the M3, as predicted in the Road Investment Strategy. In addition, some of the 12% of traffic from the south east of the M3 might switch to other roads, though not</p>	The Applicant explained in paragraphs 6.2.3, 6.2.4, 6.2.5 of Comments on any further information requested by the ExA and received at Deadline 5 and 6 [REP7-021] why Stonehenge Alliance's concerns that the effects of potential consequential congestion on the M3 and M4/M5, are not material for the assessment of the Scheme impacts.

	<p>necessarily the M4/M5 if the M3 becomes more congested, resulting in drivers not using the A303 near Stonehenge. As is well established, the relationship between traffic flow and delay is not linear so that even a relatively small reduction in traffic flow can lead to a significant reduction in delay, impacting on both the need for the project and its – already very weak economic case. Conversely, a relatively small volume of extra traffic on the – already very busy – M3 could lead to much greater congestion, leading to traffic diverting to other routes.</p>	
6.1.5	<p>[In response to Tr.2.2]</p> <p>The Stonehenge Alliance has always recognised that the analysis of journey times relative to the fastest day (as recorded by Trafficmaster) does not form part of the economic analysis and is used for presentational purposes. However, we believe it has been used to convey a potentially misleading impression of traffic issues on the relevant section of the A303.</p> <p>Highways England accepts that the fastest day represents more or less free flow conditions and it is not realistic to expect this to be typical on almost any British main road, including those where the relevant Highway Authority sees no need to intervene. By using the fastest day, Highways England are creating an image where almost any increase in journey time is seen as part of the problem, which needs to be addressed by the project.</p> <p>It would be very helpful if Highways England were to publish a table showing the average journey time for each day of the year (with dates), so all parties could have a shared information base. Unfortunately, they have chosen not to provide this</p>	<p>As Stonehenge Alliance agree, the ‘fastest day’ does not form part of the economic analysis. As explained in the Applicant’s response [REP06-32] to Tr2.2, the “fastest day” was introduced in response to the Examining Authority’s first round of Written Questions question Tr.1.11 [REP2-036]. At paragraph 9 of Tr2.2 the Applicant explains that similar journey times were observed over the 50 fastest days of the year and accordingly demonstrated that the comparison set out in Tr.1.11 did not convey a potentially misleading impression of traffic issues; the data demonstrates that delay is experienced over many days throughout the year, and that there are periods of significant delay (corresponding to the 64 busiest days explicitly represented in the transport model, as set out in Figure 4.7 of the Traffic Forecasting Package [APP-301] which illustrates how the variation in delay has been appropriately represented between neutral and busy days in the transport model).</p> <p>The applicant set out in the ComMA documentation (Data package, Section 6 [APP-299], Transport Model development package, Section 5.5 [APP-300], Traffic Forecasting Package (section 4.14.9) [APP-301], economic appraisal package, section 5.3.29 pp [APP-302]) information relating to journey times on the A303, and do not believe that there is value in providing the data in the format requested by Stonehenge Alliance, as the analysis has already been provided. Information can also be found in the following Examination Documents:</p> <ul style="list-style-type: none"> • Applicant’s Response to Examiners Written Questions 1 [REP2-036] Tr.1.8 and Tr.1.11,

		<ul style="list-style-type: none"> • Applicant’s Response to Examiners Written Questions 2 [REP6-032] Tr.2.2 <p>Applicants Written Summary Traffic and Transport Issue Specific Hearing [REP4-033], agenda item 3.2</p>
<p>6.1.6</p>	<p>[In response to Tr.2.3]</p> <p>In responding to this question, Highways England seek to make a distinction between the results from the Contingent Valuation Study (CVR) and other elements of the economic case.</p> <p>Highways England argue that the Development Consent Order and business case development processes are different. In reality, both are concerned – in part - with determining whether the benefits of the project exceed its adverse impacts and it is important to use a consistent evidence base across both processes. This is confirmed by paragraph 4.5 of the National Policy Statement for National Networks which states</p> <p>“Applications for road and rail projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail projects. The business case will normally be developed based on the Department’s Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State’s consideration of the adverse impacts and benefits of a proposed development.” From this it is clear that the information developed as part of the economic business case is highly relevant and should be taken into account by the Examining Authority.</p>	<p>Highways England has already dealt with all of these points clearly in its response to Written Question Tr.2.3 [REP6-032] , including confirming the importance of the information in the economic case (paragraph 3) and the fact that the CVR is not primarily relevant to the decision to grant DCO for the Scheme, because the heritage benefits do not need to be monetised in order to be taken into account in the planning balance (paras 5-8).</p>

6.1.7

[In response to Tr.2.3]

In their response to the first round of questions from the Examining Authority (REP2- 035, Question SE.1.25), Highways England state “the CVR does not assess benefits to the economy of the scheme. Instead it interprets benefits in order to express them within an economic framework.” In other words, contingent valuation is a technique to value social welfare benefits, which do not have a direct money value, in money terms. The same

applies to many of the other benefits included in the appraisal, for example time savings for non-business trips, which do not have a direct economic value and are monetised based on social welfare principles. Accordingly, it is illogical to include some categories of monetised welfare benefits and not others.

Highways England argue in Paragraph 6 of their response that “the monetisation of heritage benefits it [the economic business case] contains is not primarily relevant to the decision on whether to grant development consent for the Scheme, because those benefits do not need to be monetised in order to be taken into account in the planning balance.” This is an extraordinary argument. Highways England have sought to value the alleged cultural heritage benefits – at significant public expense - and claim that they have made a robust assessment, but then argue that this is irrelevant because they were not compelled to do so.

In Paragraph 8, Highways England argues that “the question of value for money does not form the basis of the ExA’s assessment of the heritage impacts of the scheme”. This misses the point. As part of its assessment of whether the overall negative impacts of the project exceed its benefits, the ExA needs to consider all aspects of it including both those that are expressed in monetary terms and those that are not. Highways England claim that there are significant cultural heritage benefits from the proposed tunnel and have sought

Again, Highways England has already responded on these points in detail – please see the references in paragraph 2 of its response to Written Question Tr.2.3 [REP6-032] as well as that response. Throughout, Highways England has been clear that in considering the CVR, it is important to remember that its primary purpose was to inform the assessment of value for money and therefore the investment decision on the scheme, by monetising the heritage benefits of the scheme. That monetisation (i.e. the monetisation contained in the CVR) is not primarily relevant to the decision to grant the DCO, because those benefits do not need to be monetised in order to be taken into account in the planning balance. While the information on impacts and benefits contained in the business case is important and therefore relevant to the ExA’s and SoS’s consideration, the decision on whether to grant the DCO is not made ‘by numbers’: instead in relation to heritage impacts and benefits the ExA’s assessment is done in the context of the NPSNN, EIA (including the Heritage Impact Assessment) and the WHS Convention, particularly focussing on the detailed, non-monetised assessment contained in the ES and HIA.

Highways England has already given detailed submissions explaining the robustness of results and methodology of the assessment, including at the references in paragraph 1 of its response to Written Question Tr.2.3 [REP6-032].

	<p>to value them in money terms. It is therefore entirely appropriate that the Examining Authority takes this into account in its assessment.</p> <p>The Stonehenge Alliance considers that the results of the assessment are uncertain and that there are a number of methodological concerns with it, which we reserve the right to comment on further elsewhere.</p>	
6.1.8	<p>[In response to Ec.2.1, Ec.2.2 and Ec.2.3]</p> <p>We note that Highways England, in answering these three questions, proposes three new Stone Curlew plots to compensate for any disturbance of current Stone Curlew nesting sites at Normanton Down reserve, one of which is the “legacy” plot at Winterbourne Downs and therefore, we understand, may not be considered as “compensation” or “mitigation”.</p> <p>The RSPB confirms (REP6-070) that <i>two</i> new plots are required (excluding the Winterbourne Downs plot) that would ideally be “sited as close as practicable to Normanton Down” and that these plots are to “be secured and described as such in the DCO i.e. the necessary ecological, legal and financial requirements to deliver and maintain the plots is secured via the DCO and accompanying technical documents before the Examination closes.”</p> <p>These plots are yet to be secured but Highways England suggests, in its HRSA “sift assessment” Clarification Note (REP6-039, para.1.6), that Natural England and the RSPB do not consider they need to be secured before the end of the Examination – which does not appear to be the case in respect of RSPB. Nor has this assurance been provided in Natural England’s submission to the Examination on the matter, unless the following sentence is intended to do so:</p> <p><i>“However, subject to suitable commitments from Highways England, we see no particular reason why this mitigation cannot be treated as being certain to be effective (in HRA terms) both in terms of delivery</i></p>	<p>The additional two stone curlew plots (i.e. entirely additional to the replacement plot at Parsonage Down and the plot at Winterbourne Down) are not intended as compensation measures. As stated in HRSA Clarification Note (Appendix A of the Statement of Common Ground with Natural England [REP7-011] submitted at deadline 7), the commitment to put in place the additional plots is considered to provide confidence beyond reasonable scientific doubt that there would be no loss of nesting opportunities for stone curlew population in the event of any in-combination impacts from increased recreational usage of the existing byways adjacent to Normanton Down RSPB Reserve and thus no adverse effect on the SPA breeding population through increased competition. Highways England has already identified a selection of suitable locations for additional stone curlew plots (all of which have been confirmed by RSPB as suitable) and is in discussion with landowners who are interested in providing the plots. For the additional plots, the commitment by Highways England to provide additional plots provides the surety required for the Habitats Regulation Assessment, this has been agreed with Natural England (please see 3.15 of the Statement of Common Ground with Natural England [REP7-011]) and the RSPB (please see section 3.6 of the Statement of Common Ground with the RSPB [REP7-013]) .</p>

	<p><i>certainty and certainty of ecological efficacy once delivered.” (REP6-062, para.ii, in response to EXQ2 Ec.2.3)</i></p> <p>The Alliance considers that both of the proposed two new plots – as well as the agreed replacement plot at Parsonage Down – need to be secured in the DCO, as pointed out by RSPB before the end of the Examination, in order to ensure that the Statement to Inform the Appropriate Assessment is compliant with the Habitats Regulations. To leave securing of the plots “in the air” as NE and Highways England appear to suggest, does not give certainty.</p>	
6.1.9	<p>[In response to Ec.2.1, Ec.2.2 and Ec.2.3]</p> <p>With reference to the “People Over Wind” case in the CJEU (C-323/17; http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN), Art 6(3) of the Habitats Directive has two stages. First, Appropriate Assessment (AA) is needed when a project is likely to have a significant effect on a European designated site. Secondly, following stage 1, following AA, such a project can only be approved if there will be no adverse effect on integrity of the site (to the degree of certainty of no reasonable scientific doubt).</p> <p>The “People Over Wind” Judgement clarified that you can’t avoid AA by inclusion of mitigation measures at the screening stage, but also says more than that.</p> <p>Para 38 of the judgement states that the AA must not have “lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects . . .”.</p> <p>Further, para 39 (referring to the NGO and Mr Sweetman) states that the public, which includes Non-Governmental Organisations, have a right to participate in the procedure for the adoption of a decision relating to an application (i.e., AA).</p>	<p>The Applicant would submit that the SIAA is not required to be updated and that the ExA's Report on the Implications for European Sites, the comments made by interested parties on that, other HRA-related examination submissions (including the SIAA and the clarificatory information submitted subsequently by the Applicant) and the ExA's recommendation report will need to be considered by the Secretary of State all together when undertaking the appropriate assessment (as set out PINS Advice Note 10 on the HRA process). Interested parties' submissions will form part of those considerations, demonstrating participatory opportunities as part of the process.</p> <p>For clarity, Highways England has fully and appropriately applied the processes required to comply with the requirements of the Habitats Directive. The screening process identified any likely significant effects as stated in the Habitat Regulations Assessment Likely Significant Effects Report (HRSA) [APP-265], with clarification on the details contained in the HRSA supplied in the HRSA Clarification Technical Note (Appendix A of the Statement of Common Ground between Highways England and Natural England submitted at Deadline 7 [REP7-011]). Where effects could not be definitively screened out at that stage, further assessment was carried out as reported in the Statement to Inform an Appropriate Assessment (SIAA) [APP-267]. Further clarification was provided in the HRSA Clarification Note [REP7-011] with respect to the additional provision of nesting opportunities for stone curlew. As stated in the HRSA Clarification Note (Appendix A, paragraph 1.57) the proposed measures underline the robustness of the conclusion of no adverse effect on the integrity of the Salisbury Plain SPA in the SIAA [APP-267].</p>

	<p>We submit that since the UK Government has decided to comply with the EU Directive by way of an Examination in this case with public involvement, the public can't then be subsequently excluded from the AA process – as they would be if there were still things up in the air following the close of the Examination.</p> <p>Since it is the Secretary of State who undertakes the AA, it must be assumed that the Statement to Inform the AA effectively takes the place of that document (see Statement to Inform the AA, APP-266, paras.1.1.4–5, 1.2.3, https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010025/TR010025-000419-6-3_ES-Appendix_8.25_HRA_AppropriateAssessment.pdf) and that the public should be assured, by the close of the Examination, that the Statement to Inform the AA contains all the information necessary to assure the Secretary of State that there would be no adverse effects on integrity of the SPA (Stone Curlew) – and indeed Great Bustard and the River Avon SAC.</p> <p>The Statement to Inform the AA needs to be amended to include the newly proposed mitigation measures (two new plots for Stone Curlew); and to clarify the situation concerning the “legacy” plot at Winterbourne Downs which cannot be considered as “mitigation” (e.g., cf. APP-266, para.5.1.5).</p>	<p>As stated within paragraph 1.4 of the HRSA Clarification Note: Stone curlew plot sift [REP7-011] the measures incorporated within the Scheme will provide net enhancement for the stone curlew population (as agreed with Natural England). The HRSA Clarification Note provides clarification that the Scheme would not result in an adverse effect on the integrity of the River Avon SAC, to which Natural England is in agreement [REP7-011]. As such, as alluded to above, the combination of the HRSA [APP-266], SIAA [APP-267] and HRSA Clarification Note [REP7-011] provide all the information which Natural England considered was required from the Applicant to inform an Appropriate Assessment.</p> <p>With regards to great bustard, this species is not relevant to the HRA as it is not one of the features for which the Salisbury Plain SPA is designated. Notwithstanding, the mitigation measures incorporated within PW-BIO5 and MW-BIO8 of the OEMP [REP6-011] will be consulted on with the Great Bustard Group and are considered suitable to avoid adverse effects on the local population.</p>
6.1.10	<p>[In response to Ec.2.3]</p> <p>The Alliance is also concerned that Highways England, in its response to Question Ec.2.3, says at para.3, that the two new plots for Stone Curlew would be sited “if practicable, within 5km of the Scheme”, whereas RSPB says “Ideally, such plots would be sited as close as practicable to Normanton Down”, i.e., well within 5km of the scheme. The Alliance doubts the efficacy of what would effectively be replacement plots for the</p>	<p>As stated within Highways England's response to Ec.2.3 of the ExA's Written Questions-Biodiversity [REP6-024], “two additional stone curlew plots will be provided within 5km of the SPA (and, if practicable, within 5km of the Scheme)”. The RSPB agrees with this statement as confirmed within their response, which does not detail or infer a maximum distance from Normanton Down RSPB Reserve as stated within the RSPB Responses to the Examining Authority's Written Questions Ec.2.1 and Ec.2.3 [REP6-070],</p> <p><i>“Our preferred mechanism to mitigate against the risk of increased disturbance making Normanton Down unsuitable as a breeding site for stone-curlews is the securing and provision of suitably located additional nesting plots elsewhere within the 5-km buffer around the SPA. Ideally, such plots</i></p>

	<p>Normanton Down reserve being sited any further away than the RSPB suggests.</p> <p>Without securing, under legal agreements, new plots in optimum locations, we submit that there is no certainty in Highways England’s statement that its current commitment <i>“ensures the robustness of a conclusion of no adverse effect on integrity in the Statement to inform the Appropriate Assessment [APP-266]. It goes beyond reasonable scientific doubt and provides the highest level of confidence regarding a conclusion of no adverse effect on the integrity of the SPA.”</i></p> <p>(Highways England, response to ExQ.2. Ec.2.3, para.8)</p>	<p><i>would be sited as close as practicable to Normanton Down. The RSPB’s support for the enhanced fencing proposal at the Normanton Down Nature Reserve was on the basis that it provided for increased security against illegal trespass.”</i></p> <p>Highway’s England has committed to the provision of two additional plots within the 5-km buffer around the SPA to ensure that there is no net loss of stone curlew breeding opportunities associated with the Scheme. As stated in Appendix A, Appendix 1 of the Statement of Common Ground with Natural England [REP7-011] submitted at deadline 7, Highways England is progressing with identifying and securing plots (see response to paragraph 6.1.8 above).</p>
<p>6.1.11</p>	<p>[In response to Ec.2.4]</p> <p>The Stonehenge Alliance notes that “specific and appropriate measures” have not been clearly set out in Highways England’s response. Screening is not described; bunding will not deter birds in flight; while decisions to be made by the contractor on a “case by case” basis gives no certainty that adequate protection would be afforded to Great Bustards.</p>	<p>It is not considered to be suitable to limit the deterrent or screening measures to be incorporated at this stage, as the measures will be determined on a site by site basis. As it has been stated within MW-BIO8 of the OEMP [REP6-011] the Great Bustard Group will be consulted with regards to the mitigation measures to be incorporated where Great Bustards are found located within the Scheme boundary or within 500m of works. This would provide suitable levels of certainty that adequate protection would be afforded to great bustards.</p>
<p>6.2</p>	<p>Comments on Deadline 4 comments (REP5-003)</p>	
	<p>Matter Raised</p>	<p>Highways England’s Response</p>
<p>6.2.1</p>	<p>The engineering properties, “Stand-up Time”, excavatability, rock strength (over days and weeks, unsupported) of the critical sections and depths of the Upper Seaford Phosphatic Chalk “bodies” have neither been fully investigated, nor detailed or presented in any relevant reports by Highways England (HEng).</p>	<p>The engineering properties of the Chalk geology including the Phosphatic Chalk have been presented in the Preliminary Geotechnical Investigation Report (pGIR) [APP-273] and considered for the total length of the proposed tunnel in conjunction with the groundwater conditions. As a result, the preliminary design completed in support of the DCO confirmed the main source of mitigation during tunnelling is the selection of the closed-face TBM</p>

		<p>which can deal with the variation in geology including the phosphatic chalk, as detailed in response to 11.2.56 of [REP5-003].</p> <p>The closed-face TBM provides support to the rock at the cutting face and does not rely on parameters such as ‘stand-up time’ for an unsupported rock face which are more relevant to a traditionally mined tunnel. As explained in response to Written Question Fg.1.5 [REP2-031], the TBM will be a closed-face machine ensuring that the ground is not unsupported at the face and, along with the action of installing the primary lining and the process of tail skin grouting of the annulus as the tunnel progresses, this will ensure that the ground surrounding the excavation is in contact with the tunnel lining and therefore not unsupported for any period of time.</p> <p>The use of a closed face TBM is required through measure D-CH32 in the OEMP [REP6-011], compliance with which is secured through requirement 4 in Schedule 2 to the draft DCO]. It will be the responsibility of the contractor to ensure the continued assessment of risks and that these are assessed and addressed in their safe systems of work during construction.</p>
6.2.2	<p>HEng’s comment that “drilling techniques were to blame for the disintegrating core in the R501 core boxes”, made in Session 4, June 11th 2019, is invalid. This “Potential Instability” and poor Rock Strength had already been identified in the drilling of Borehole R11, by Soil Mechanics Ltd. (SML), again using standard triple-tube wireline core drilling techniques in March 2001. Varying drill bit selection (Geobore Cube Set in SMLs case and alternate polycrystalline and stepped tooth bits, with finally a Geocube bit used as by SML) has had therefore no effects on the demonstrable poor rock strength of the Phosphatic Chalk, in particular, and the weakness of much of the upper Seaford Chalk west of Stonehenge Bottom.</p>	<p>These comments misunderstand the situation. Borehole R11 predates R501. Because there was doubt about the representative state of the core in earlier site investigation boreholes (core had dried and been handled many times), the consultant engineers quite rightly decided to see if different methods of coring could be used to recover more representative phosphatic chalk in core.</p> <p>All the site team, the drillers, contractor’s and engineer’s staff, were of one mind in recognising that the coring method had caused the core destruction in R501. Having learnt the lessons from R501, subsequent cores were excellent through the phosphatic chalks.</p>
6.2.3	<p>High groundwater levels, in anything other than high summer drought conditions, are likely to hamper tunnelling, and in the event of possible varied and adverse induced groundwater chemistries, could</p>	<p>Please see response to Fg.1.5 in Deadline 2 Written Questions – Flood risk, groundwater protection, geology and land contamination [REP2-031] where the applicant has provided details regarding the approach and mitigation measures should voids in the phosphatic chalk be encountered. The</p>

	<p>cause potential additional degradation of the Phosphatic Chalk in particular, with possible solution, piping conditions and migration of voids to surface.</p>	<p>Applicant also notes that the choice of a TBM has been considered as appropriate based on an assessment of the expected geological and hydrogeological conditions, and would further note that that the presence of groundwater would not hamper tunnelling and examples of tunnelling projects completed in water bearing chalks (Lee Tunnel & Crossrail) were provided in REP4-032 (agenda item 5).</p> <p>It is difficult to imagine what “possible varied and adverse induced groundwater Chemistries” are being alluded to. There is currently no proposal to introduce anything that will adversely affect the groundwater chemistry. Nor is there any evidence to suggest that degradation of the Phosphatic Chalk might be chemically induced.</p>
6.2.4	<p>The Whitway/Stockbridge Rock/Barrois Horizon zone of high horizontal elevated permeability must be specifically investigated throughout the proposed project area.</p>	<p>The geology of the Scheme has been investigated and additional investigation is not necessary to support the ES and determination of the application because the hydrogeological conceptual model is robust, verified by monitoring [REP3-020], and the environmental assessment approach has been reviewed and considered appropriate by the Environment Agency and Wiltshire Council’s peer reviewers. This includes the interpretation of the significance of geological horizons (such as the Whitway Rock) for groundwater flow. There is no conclusive evidence of the presence of the Whitway/Stockbridge Rock/Barrois Horizon in the investigations to date or of continuous zones of high permeability strata. Please also see the summary of oral submissions for ISH10 submitted at Deadline 8.</p> <p>Please see response to item 11.1.3 in the Comments on any Further Information at deadline 4 [REP5-003] which explains that a conservative approach to modelling has been undertaken to simulate the effects of the Scheme on regional groundwater flow and sensitive receptors.</p> <p>The model has been refined in the area of the tunnel with data from pumping tests. Preferential flow horizons have been considered using Scheme specific geological, geotechnical and geophysical data. It is therefore considered that the approach to modelling is robust and sound.</p>

6.2.5	Dewatering and additional grouting, from surface or the tunnel levels, will threaten yields and groundwater quality in local abstraction boreholes and springs.	<p>These activities will not threaten yields and groundwater quality. See the Applicant's response to agenda item 5.1 in the Written Summary of Oral Submission from ISH4 regarding Flood risk, Groundwater, Geology and Waste [REP4-032] and the additional information provided in the Post Hearing Note. As noted there, the properties and characteristics of the grout will be carefully selected to limit grout migration, dilution and other effects from groundwater and fissures in the chalk. This would be undertaken in accordance with best practice and as part of the risk management of the tunnelling works and will be controlled pursuant to item MW-WAT9 of the OEMP which requires EA approval of the materials used for ground treatment when more details of the construction methodology will be known.</p> <p>Also see response in paragraph 6.2.23 of deadline 7 Submission - 8.44 - Comments on any further information requested by the Examining Authority and received at deadline 5 and 6 [REP7-021].</p>
6.2.6	Such risks of adverse ground and tunnelling conditions should not be contemplated within the vicinity of a World Heritage Site such as Stonehenge and would not be permitted at any other World Heritage Site in Europe.	As noted above, the Applicant considers that, given the results of the assessment and the mitigation measures put in place, 'such risks' do not exist.
6.2.7	<p>As previously stated, a complete understanding of conditions, with adequate geoscientific ground data, sufficient for realistic, accurate and unconditional tendering for this project, is currently not available from HEng to present to any interested tunnelling contractors as part of the tendering process which HEng initiated on 1th July 2019. (See previous SA submissions and evidence given in Sessions 4 and 5; June 11th and 12th 2019.)</p> <p>Contractors tendering for this work will therefore not have sufficient geological, geotechnical nor hydrogeological information upon which to base any realistic tenders.</p> <p>Hence the onus for "unforeseen ground conditions" will be placed entirely upon the successful tenderer. This goes against many modern Civil Engineering protocols and procedures, as encapsulated</p>	<p>Highways England have provided, to all interested parties through the OJEU call for competition, access to the historic geotechnical data pertinent to the scheme plus details of the planned additional ground investigation.</p> <p>The additional ground investigation works (Phase 7) is being delivered in sub-phases with the overall aim to target key engineering geological and hydrogeological aspects of the study area. The aim of the Phase 7A investigations are to provide geotechnical data to inform the tender design. This is being delivered in 2 stages. The aim of the Phase 7B works are to inform the detailed design.</p> <p>Phase 7A.i was completed at the end of July 2019 with the geotechnical data gathered during this phase and associated laboratory testing currently being processed and prepared into the Factual Report by the ground investigation contractor. This is expected to be submitted to Highways England at the end of September 2019. Phase 7A.ii is currently underway with the Factual Report</p>

	<p>in the NEC 3 and 4 guidelines, as well as the Civil Engineering Contractors Major Infrastructure Contracts terms and conditions.</p> <p>The outcome of such a situation can therefore only be to invoke a multitude of claims, and extensions to the predicted Contract Term, which would result in inflated costs and considerable time losses for completion of the works.</p> <p>Government funds, or rather the British Taxpayer, should be properly protected against such inevitable consequences of the inadequacy and incompleteness of HEng's ground investigations, rock and groundwater data interpretations and predictions of conditions and changes, and failure to provide a professional, competent and complete set of ground condition descriptions, below a significant and sensitive World Heritage Site.</p>	<p>due to be submitted to Highways England by the ground investigation contractor by the end of 2019. Phase 7B works are due to commence in April 2020.</p> <p>The approach to the management of geotechnical risk on this scheme follows Highways England's standard HD22 'Managing Geotechnical Risk' which sets out the procedures and framework to be used during the process of planning and reporting of all geotechnical works and to ensure that geotechnical risk is identified and correctly managed.</p> <p>Through the OJEU call for competition tenderers have had the opportunity to review and request further GI ahead of the call for final tenders. This opportunity allows the tenderers to address any concerns they may have about the understanding of the study area on which they will be basing their tender submissions.</p> <p>Highways England have taken all reasonable steps to provide tenderers, including inviting the tenderers to propose additional GI, with an understanding of the geological and hydrogeological aspects of the study area so that geotechnical risk on the scheme can be appropriately managed.</p> <p>Through this process and the negotiations of the contract itself, the risk of contractual claims and contract terms will be able to be mitigated.</p>
6.2.8	<p>Item 11.1.6 part ii</p> <p>Our requests for photomontages have not been satisfactorily answered. We suggest a reasonably accurate or at least indicative night-time image (ideally of the lighting impacts at the new Longbarrow Junction) could be supplied by the Applicant, including the impact of shrouded traffic lights. The number of traffic lights here has not been specified but we assume that it is in the region of 6 sets/pairs, at least.</p> <p>The glare from vehicle lights would be magnified by reflection from the cutting walls, while there would be shafts of light projected upwards from cars travelling up the slip roads at Longbarrow Junction.</p>	<p>The Applicant respectfully considers that sufficient information has been presented via the photomontages both within the Environmental Statement and during the course of the Examination, with additional photomontages submitted at deadline 7 and on the 16th August 2019.</p> <p>At ISH8 (21st August 2019) the Stonehenge Alliance were directed to these additional photomontages as they were not aware of them.</p> <p>In terms of night-time images, these are not being produced due to the limitations of the computer technology to render car-headlights accurately within a night-time photomontage as set out in the Applicants response to LV.1.13.</p> <p>The glare from the vehicle lights would not be magnified by the cutting walls; it would be contained by the cutting.</p>

		<p>Vehicles on the slip roads (re-aligned A360) would also be in cutting bordered by hedgerows and there would not be shafts of light projecting upwards. These slip roads and Longbarrow junction are over half a kilometre further from the WHS than the existing section of the A360 and Longbarrow roundabout which is lit, and therefore the Scheme would be beneficial to the night time character of the WHS, due to these changes, along with the tunnel and retained cutting sections.</p>
<p>6.2.9</p>	<p>Item 11.1.7</p> <p>The information requested from the Applicant has not been supplied. We continue to consider it inappropriate, given the exceptionally sensitive archaeology of the WHS and the unique and unpredictable geology through which the tunnel would be bored (all agreed by the Applicant and still not fully known), for methods of monitoring as well as prevention of any archaeological damage arising from vibration and settlement to be left to the contractor to decide upon. It is difficult to envisage how treatments suggested for <i>prevention of damage</i> would be effective.</p>	<p>As set out in the Applicant’s response to Ns.2.7 and Ns.2.8 [REP6-031], there are no standard thresholds for construction vibration levels or tunnelling induced settlement levels significantly affecting archaeological assets.</p> <p>The sensitivity of archaeological assets will vary and therefore protection of assets needs to be considered on a case-by-case basis. This approach is set out in MW-NOI5 of the Outline Environmental Management Plan (OEMP) [REP6-011] which requires the main works contractor, in consultation with the members of HMAG to, identify any potential sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. Should assets be identified, actions to control or mitigate impacts (including monitoring) shall be consulted upon with HMAG and implemented as appropriate. An updated version of the OEMP is to be submitted to the Examination at deadline 8.</p> <p>The predicted effects of excavation-induced ground settlement have been considered as part of a staged assessment used in tunnelling to determine the zone of influence and potential structures and archaeology affected during construction (see Environmental Statement Appendix 10.6 - Land Instability Risk Assessment [APP-278, Section 6.4]. The initial Greenfield Assessment was based on 2-D sections at 100m centres along the tunnel that have been interpolated to provide and develop the zone of influence of tunnelling. This was further supported by a series of Finite Element Modelling sections at 200m centres to refine the modelling to represent the specific parameters defining the geology at these locations. Having looked at the data for the Phosphatic Chalk encountered in the Phase 6 and Early Phase 7 GI (2018), it would be our conclusion that the Phosphatic Chalk is not significantly weaker nor more variable in terms of weathering than the</p>

'conventional' chalk encountered in the boreholes. The chalk parameters used for ground settlement assessment are conservative for the Chalk and are not inappropriate or unreasonable for the Phosphatic Chalk. Our approach is conservative, follows best practice in tunnelling and allows the 2D results to be interpolated to provide a 3D assessment of settlement.

The Noise and Vibration assessment set out in Chapter 9 of the Environmental Statement (ES) [APP-047] (paragraphs 9.9.14 – 9.9.15) vibration levels have been calculated with the procedure set out in BS 5228-2 Table E.1 for vibration from the Tunnel Boring Machine (TBM).and pavement works, namely vibratory rollers and compactors.

The prediction methodology for tunnelling in BS5228-2 is conservative as it is derived from worst case source data for tunnelling in rock using a hydraulic hammer. Source data for TBM works and chalk ground conditions indicates lower levels of vibration are likely to be generated. As set out in Highways England's response to Written Question Ns.2.6 [REP6-031], vibration impacts on heritage assets are reported in Appendix 6.1 Heritage Impact Assessment [APP-195]. Supplementary detail was provided at the Issue Specific Hearings as reported in the written summary of oral submissions made at that hearing [REP4-033], item 6 iii.

In summary;

- the identified barrows along the route of the tunnel that could be subject to vibration effects (where the tunnel is close to the surface) have already been excavated, either completely or in part, and backfilled removing potentially sensitive burials and artefacts;
- The identified barrows are unlikely to contain voids and have settled to their current position over approx. 5000 years;
- Disturbance from previous/current activities including World War One airfield operations, agricultural ploughing and/or animal burrowing has occurred; and
- Individual artefacts in the soil are usually fragmented. They are supported by the soil matrix, not surrounded by voids and therefore are much less sensitive to vibration than artefacts in the open air, display cases or with voids around them.

With regard to vibration monitoring, please see Applicant's response to Ns.2.7 [REP6-031]. In summary, the precise details of the vibration monitoring methodology will be set out in the Noise and Vibration Management Plan required by MW-NOI3 of the Outline Environmental Management Plan (OEMP) [REP6-011]. The Noise and Vibration Management Plan will set out specific details of the vibration monitoring methodology in terms of the choice of transducers, method of coupling, measurement locations, measurement duration etc., in accordance with the requirements of the relevant British Standards (BS 7385: 1993 ISO 4866:2010, and BS 5228:2009+A1: 2014). At this stage, before detailed design is complete, a commitment has been made to monitoring at the Stonehenge monument when the TBM is within 250m of the monument (MW-NOI6), due to the level of interest in the Stones. Additional vibration monitoring locations at potentially sensitive heritage assets, including barrows, will be based on the further analysis required by MW-NOI5 of the OEMP to identify any potentially vibration sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. MW-NOI5 requires the main works contractor, in consultation with the members of HMAG to, identify any potential sensitive cultural heritage assets based on the sensitivity of assets and proximity to tunnelling works. Should assets be identified, actions to control or mitigate impacts (including monitoring) shall be consulted upon with HMAG and implemented as appropriate.

As detailed in Highways England's response to Written Question Ns.2.7 [REP6-031], the decision to implement a bored tunnel rather than a cut and cover tunnel was a deliberate design decision taken in order to preserve surface archaeology and avoid damage and disturbance as far as possible to archaeological sites, including those that contribute to the Outstanding Universal Value of the World Heritage Site. There is also mitigation embodied within the selection of the tunnel boring machine with the use of a closed-face TBM for the main tunnel construction to control excavation induced ground movement and vibration. In accordance with MW-NOI5, the contractor shall develop contingencies using a suite of tool box items from further investigation, assessment and monitoring during construction to identify measures to ensure the protection of heritage assets. This could range from simply slowing down the TBM to instigating ground stabilisation measures including grouting.

6.2.10	<p>Item 11.1.10</p> <p>Highways England assert that they have provided “a suitable level of further detail of the calibration and validation of the model” in CoMMA Appendix B [App 300]. In fact, the only reference that we can find to the calibration of the model is in paragraph 12.1.2 of this document which states that “Calibration of the VDM was undertaken across all five of the RTMs and the resultant calibration parameter values justified at the total RTM level. The VDM has not therefore been re-calibrated as part of the ‘A303 Stonehenge SWRTM (DCO)’ model refinement.” At the Hearing, Mr Hanson confirmed that calibration of the Variable Demand Model was undertaken at a national, rather than regional or local level. In The Stonehenge Alliance’s view this is a totally inadequate explanation and, in effect, Highways England are asking the Inquiry to take on trust their assertion that the model is appropriate, without any opportunity for independent technical review by ExA or Interested Parties.</p>	<p>The Applicant’s response to Stonehenge Alliance in section 6.2.7 of Comments on any further information requested by the ExA and received at Deadline 5 and 6 [REP7-021], repeated below summarised why the Variable Demand Model (VDM) has been calibrated appropriately in accordance with guidance.</p> <p>Section 3.1 [REP4-034] sets out how each of the Highways England Regional Traffic Models (RTMs) were calibrated and provides a summary of the application documents that demonstrate that the variable demand modelling is compliant with guidance as set out in WebTAG unit M2. Highways England note that Mr. Hanson’s oral submission at ISH6 stated that the “Calibration of those [the RTMs] models did follow guidance, quite carefully” and that, as it transpires, “the work done for those [the RTMs] demonstrated that the central parameters defined in guidance were applicable as might be expected for a national suite of tools”.</p> <p>As Mr. Hanson noted, this “demonstrates the coherence and consistency of [the] guidance that they are built on”. It should be noted that this is not the same as Stonehenge Alliance’s assertion that the calibration of the South West RTM was undertaken at a national level. Mr. Hanson also noted that the “evidence of sensitivity that WebTAG relies on – in terms of demonstrating sensitivity [i.e. realism tests] – is based on national and not local sensitivity, and so it is appropriate to keep national relationships in-tact”.</p> <p>The Examining Authority should therefore take comfort in noting that the model development has been undertaken in accordance with guidance and that the Variable Demand Model element of the model suite is appropriate.</p>
6.2.11	<p>Item 11.1.11 Reliability and validation of local transport model</p> <p>The Stonehenge Alliance continues to believe that the Maddison and Mourato report should be provided officially to the Inquiry, given the importance of the alleged cultural heritage benefits to Highways England’s case. As far as we are aware, at no point previously has</p>	<p>Highways England did not commission the Maddison and Mourato study and has no authority to replicate or disseminate it.</p> <p>The Maddison and Mourato study surveyed UK households from across the country and individual visitors to Stonehenge. It collected both individual willingness to pay and household willingness to pay, but in its published form</p>

	<p>Highways England asserted that the 1998 study collected individual, as well as household, values of Willingness to Pay. If this is the case it is very strange that Appendix B to the Simerica Report (which attempts to make the case that the results of the two studies are comparable) makes no reference to this. Instead it simply multiplies the 1998 results by a ratio of individuals to households.</p>	<p>only presented results for households. Appendix B to the Simerica Report rightly works only with data that is in the public domain, in spite of this leading to a fairly complex set of adjustments. In paragraph 11.2.63 of Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003] Highways England quoted unpublished results of the individual willingness to pay from the Maddison and Mourato study - £10.87 per person in 2017 prices – to show in simpler terms that the results are comparable to the results of 2016 study. Whilst those results are unpublished, and graciously made available to Highways England by the authors, it is helpful to show that two quite different approaches to comparing the two studies come to the same conclusions.</p>
6.2.12	<p>Item 11.1.12</p> <p>The Stonehenge Alliance continues to consider that the results of the cultural heritage assessment are flawed, as we have set out in previous submissions. Highways England state “The value of the scheme cannot be expressed as a limited sub set of monetised benefits as asserted by SHA</p> <p>[Stonehenge Alliance]”. This is not our position. We have never asserted that the value of the scheme can be assessed solely in monetary terms. There a number of major negative impacts of the project which cannot be valued in money terms, and should be taken into account in conducting the Planning Act test of whether the adverse impacts of the project exceed its benefits. We address the issue of whether the monetary valuation of cultural heritage benefits should be included in the assessment in our comments on Highways England’s response to the Examining Authority’s questions.</p>	<p>Highways England has responded to all critiques of the CVR from Stonehenge Alliance (and other interested parties) in previous responses [REP4-036, REP5-003, REP7-021] and maintains that the results are robust and appropriate for use alongside non-monetised considerations as part of the Vfm assessment.</p>
6.2.13	<p>Items 11.1.14 – 11.1.18</p> <p>The applicant claims that their landscape architects have considered “sound levels” in their consideration of tranquillity, pointing to a large table of numerical data which has been reviewed. We asked the Applicant’s landscape architect to explain how he had used this at the hearing, and he provided no answer. The fact is that such a large</p>	<p>As reported in the Written summaries of oral submissions at Issue Specific Hearings – Noise and Vibration [REP4-033] the tranquillity assessment is based on data from a number of sources, including the results of the baseline noise survey and extensive fieldwork by the landscape team. This has provided a good understanding of the noise climate within the WHS, and at the Stones, including the influence of both natural and man-made noise</p>

table of figures provides very little useful information, even to an experienced acoustician, to enable a determination of tranquillity to be carried out. We do not accept that sound has been properly considered. It is not just the level, but also, critically, the character of sounds which determine the tranquillity rating of a location. This is reflected in the recent revisions to government guidance (found at <https://www.gov.uk/guidance/noise--2>) and revised on 22 July 2019. In this, under the heading, “What factors are relevant if seeking to identify areas of tranquillity?”, it now states:

*‘For an area to justify being protected for its tranquillity, it is likely to be **relatively undisturbed by noise from human sources that undermine the intrinsic character of the area. It may, for example, provide a sense of peace and quiet or a positive soundscape where natural sounds such as birdsong or flowing water are more prominent than background noise, e.g. from transport.***

Consideration may be given to how existing areas of tranquillity could be further enhanced through specific improvements in soundscape, landscape design (e.g. through the provision of green infrastructure) and/or access.’ (Paragraph: 008 Reference ID: 30-008-20190722; our emphasis)

It is not possible to tell from simple tables of figures whether the measured level is from human sources or natural sources. Hence, the consideration of tranquillity has failed to consider the most important factors which affect tranquillity, when judged against government guidance.

To add to this point, Table 9.26 of the noise and vibration chapter states that the change in noise level at Stonehenge (meaning the henge itself) would result in a **significant beneficial effect**. This is not so. This presentation of the data in the Environmental Statement, allied with the subjective opinion expressed in the heritage chapter (para 6.11.2) that “*The A303 currently has a major negative impact*

sources. Therefore, the applicant does not agree that the tranquillity assessment has failed to consider the most important factors. At the ISH, the Applicant stated that it has reviewed the information within APP-047 along with discussions with the Noise and Vibration team to understand the predicted changes in traffic noise levels. This inter disciplinary working between the landscape and noise team is common practice and one which has formed part of the assessment on tranquillity.

The Stonehenge Alliance are presuming that the ‘large table of figures’ has been the only information considered as part of the tranquillity assessment. However, as set out by the Applicant at the ISH, a number of sources have been used to determine tranquillity, principally the day and night time field work. Therefore, the Stonehenge Alliance suggestions are based on an unsound premise.

We welcome the position from Stonehenge Alliance that the removal of the view of the road may have some beneficial effect. However, we do not agree that visual factors do not influence the level of tranquillity.

The major reduction in traffic noise at the Stones (as reported in Table 9.26 in Chapter 9 of the Environmental Statement (ES) [APP-047]) is a result of traffic using the existing A303 being redirected into the tunnel. The significant beneficial effect at the stones reported in Chapter 9 relates purely to the reduction in road traffic noise due to the tunnel. Chapter 9 does not comment on tranquillity; this assessment is reported in Chapter 7 (Landscape and Visual) of the ES [APP-045].

Chapter 7 of the ES [APP-045] reports that there would be a beneficial impact to tranquillity with the WHS above the tunnel due to the removal of the sight of vehicles and the reduction in road traffic noise (para 7.9.53). It does not comment specifically on tranquillity at the Stones (Table 7.7 referred to by Stonehenge Alliance relates to the local landscape character areas, rather than tranquillity specifically). It is also reported that there would be an adverse impact on tranquillity between the western end of the Scheme and the western start of the WHS due to the dual carriage way and increased

	<p><i>on the setting of Stonehenge, the integrity of the WHS and visitor access to some parts of the wider landscape. The harmful impacts of roads and traffic on the WHS include visual intrusion, noise and air pollution ...”</i> and the presentation in Table 7.7 of the landscape and visual chapter which states that there would be a “large beneficial” effect at the henge, all points to the applicant making a claim (in their application documentation) that the tranquillity at the henge would be significantly improved. They have now changed their position, stating in their response in 11.11.16 that, “... <i>the improvement in tranquillity due to the major reduction in traffic noise will be less at the Stones than other locations in the wider WHS ...</i>”. However, despite the evidence to the contrary, they continue to attempt to claim that the sounds at the henge would be improved, stating “... <i>the major reduction in road traffic noise, combined with the removal of the sight of road traffic due to the tunnel, cannot have anything other than a beneficial effect on tranquillity at the Stones.</i>”</p> <p>We would not argue that the removal of the view of the road may not have some beneficial effect, but (as confirmed in the recent revision to government guidance) it is the sound level and character which determines how tranquil somewhere is felt to be and this would not change. The continuing attempts to try to suggest that there may be some (even, perhaps, slight) improvement in tranquillity at the henge have no validity and are contrary to the factual evidence presented by all sides in evidence.</p>	<p>scale of Longbarrow junction in comparison to the existing roundabout and A303 (para 7.9.51).</p> <p>As stated in the Applicant’s response to Written Question Ns.2.1 [REP6-031], the improvement in tranquillity due to the major reduction in traffic noise at the Stones and in their immediate vicinity as a result of traffic using the existing A303 being redirected into the tunnel, will be less than at locations in the wider WHS where traffic noise from the A303 is dominant. Nevertheless, the reduction in road traffic noise, combined with the removal of the sight of road traffic due to the tunnel (given that tranquillity levels are based on not just noise, but other factors such as landscape and visual impacts), cannot have anything other than a beneficial effect on tranquillity at the Stones and their immediate vicinity. The Applicant does not agree that this is a change in our position from that reported in the ES and is not contrary to the factual evidence.</p>
6.2.14	<p>11.2.1 to 11.2.24</p> <p>I have read the comments made by Highways England in response to the points I had made. I have considered them carefully and conclude that they do not adequately deal with the issues I have raised. Indeed, there appears to be deliberate obfuscation, misrepresentation of my comments, avoidance of questions and an unwillingness to engage with the important matters affecting the World Heritage Site.</p>	<p>The Applicant has answered all the questions and there has not been any deliberate obfuscation or misrepresentation of comments, nor avoidance of questions or unwillingness to engage with the important matters of the WHS.</p> <p>The Applicant has clearly set out the scope and method of the landscape and visual impact assessment [APP-045] and its relationship to other parts of the Environmental Statement. This scope and method were agreed with Wiltshire Council landscape architects.</p>

	<p>One example of a specific area of concern is the failure by HE to properly identify landscape receptors and describe effects upon them. This is given as an example and is not intended to be an exhaustive list of issues and, for others, reference should be made to my comments in previous submissions.</p> <p>GLVIA3 defines landscape receptors in its glossary as "<i>Defined aspects of the landscape resource that have the potential to be affected by a proposal</i>". In Paragraph 3.21 of GLVIA3 it says that "<i>In LVA there must be identification of (both) landscape receptors, including the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas.</i>"</p> <p>The HE LVIA does not identify and discuss the effects on the constituent elements of the landscape. It does not properly address the specific aesthetic and perceptual qualities of the landscape. It only deals, and then superficially, with potential effects on the landscape character of the landscape in different areas. Because it does not properly define landscape receptors the assessment on potential landscape effects is fundamentally flawed.</p> <p>An examination procedure can only reach a proper conclusion if all parties engage properly and transparently in the process. I do not believe that Highways England have done so in respect of my deep concerns about the landscape and visual impacts of the imposition of very large engineering structures and landforms on a very sensitive landscape.</p>	<p>Landscape receptors have been clearly set out, along with their sensitivity, impact (changes to them) and the resulting effects. This has included for an assessment of published landscape character areas, local landscape character areas along with the impacts to vegetation, landform and other landscape elements, including tranquillity (which is part of the perceptual element) and the aesthetic qualities. The landscape assessment is therefore in accordance with the Guidelines for landscape and visual impact assessment, 3rd Edition (GLVIA 3), with landscape receptors properly defined and the assessment is robust and not flawed.</p> <p>The Applicant has properly engaged with the examination process, through responding to all questions and attending ISH.</p> <p>In contrast, there has been no landscape or visual assessment presented by the Stonehenge Alliance; nor has their landscape representative attended any of the ISHs.</p> <p>The introduction of any of the engineering structures within the landscape are to be guided by the commitments and principles set out within the Outline Environmental Management Plan (OEMP) (a revised version of which is submitted at deadline 8) which include principles specific to certain elements of the Scheme (i.e. Longbarrow roundabout) or Scheme wide principles in relation to earthworks across the entirety of the Scheme.</p>
<p>6.2.15</p>	<p>11.2.26</p> <p>The Applicant continues to misunderstand the advice of the Advisory Missions, the wording of the World Heritage Convention re protection of the WHS, as well as ICOMOS Guidance on HIA etc.</p>	<p>As previously stated in Highways England's Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003, item 34.1.1], the Applicant maintains that the Heritage Impact Assessment (HIA) [APP-195] has been undertaken by recognised experts in the archaeology of the WHS and who have previously written HIAs related to other developments within the Stonehenge, Avebury and Associated Sites</p>

		<p>WHS, including the Visitor Centre and the Stonehenge Environmental Improvements Project.</p> <p>The Applicant has undertaken the HIA in line with the appropriate ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011). HMAG members agree that the HIA has been undertaken in accordance with the HIA Scoping Report (which was deemed by the UNESCO / ICOMOS Mission 2018 to be appropriate) and with the ICOMOS Guidance 2011.</p> <p>The Applicant has responded previously in terms of its interpretation of the World Heritage Convention (see for example item 6.1.4 in response to Stonehenge Alliance in the Applicant’s Comments on any submissions received at Deadline 5 and 6 [REP7-021], and the various other documents referred to in that response) and does not accept that it has misunderstood the requirements of the convention.</p> <p>The Applicant also does not accept that it has misunderstood the advice of the Advisory Missions, and directs Stonehenge Alliance to its most recent submissions made at Issue Specific Hearing 8 on 21 August 2019 in relation to Agenda Item 3.2 and the World Heritage Committee decision, recorded in its written summary submitted at Deadline 8 (and which also directs to previous submissions on this point). The Applicant has also previously responded regarding the recommendations of the UNESCO/ICOMOS missions carried out in 2015, 2017 and 2018 in Deadline 3 Comments on Written Representations [REP3-013, paras. 12.1.3-6; 12.2.12-15].</p>
<p>6.2.16</p>	<p>11.2.27</p> <p>The key statement in the Vision of the WHS Management Plan is “The primary aim of the strategy is to protect the Site to sustain its OUV as agreed by UNESCO”. The Applicant’s Scheme would not fulfil that aim, as confirmed in the 2019 Decision of UNESCO’s WH Committee.</p>	<p>“The vision for the WHS set out in the 2015 WHS Management Plan is: ‘The Stonehenge and Avebury World Heritage Site is universally important for its unique and dense concentration of outstanding prehistoric monuments and sites which together form a landscape without parallel. We will work together to care for and safeguard this special area and provide a tranquil, rural and ecologically diverse setting for it and its archaeology. This will allow present and future generations to explore and enjoy the monuments and their landscape setting more fully. We will also ensure that the special qualities of the World Heritage Site are presented, interpreted and enhanced where appropriate, so that visitors, the local community and the whole world can better understand and value the extraordinary achievements of the prehistoric</p>

		<p>people who left us this rich legacy. We will realise the cultural, scientific and educational potential of the World Heritage Site as well as its social and economic benefits for the community.’ (Simmonds and Thomas 2015, 10).” [APP-195, para. 6.6.10].</p> <p>The WHS Management Plan notes that “The primary aim of the strategy is to protect the Site to sustain its OUV as agreed by UNESCO, provide access and interpretation for local people and visitors, and allow its continued sustainable economic use.” [Simmonds & Thomas 2015, p.10).</p> <p>“The HIA specifically addresses the Scheme’s alignment with the WHS Management Plan vision, aims and policies, and demonstrates how the design of the Scheme has been developed with consideration to relevant aims and policies set out in the plan [APP-195, Section 12.3, Alignment with WHS Management Plan vision, aims and policies]” [REP3-013, para. 12.3.88; para. 12.3.154].</p> <p>The Heritage Impact Assessment (HIA) [APP-195] assesses the impact of the proposed Scheme on the Attributes that convey the OUV of the WHS, their Integrity and Authenticity, as well as the alignment of the Scheme with the vision, aims and policies of the 2015 WHS Management Plan and the criteria for the site’s inscription as a WHS. The HIA [APP-195, Section 12.4] concludes that the overall effect on the OUV of the WHS would be slight beneficial and the OUV will be sustained by the construction of the Scheme.</p> <p>The tunnel is a fundamental part of the Scheme, designed to bring substantial benefits to the WHS.</p> <p>With respect to the World Heritage Committee Decision, please see the response to paragraph 6.2.15 above.</p>
<p>6.2.17</p>	<p>11.2.31 HIA Scoping Report</p> <p>We did not refer to the Scoping Report but to the 2018 Advisory Mission’s opinion on the methodology used by the Applicant for the HIA undertaken in respect of the “Proposed Scheme” which was given in the published Mission’s Report (2018):</p> <p>“<i>The 2011 ICOMOS Guidance on Heritage Impact Assessment for Cultural World Heritage Properties should continue to guide Heritage</i></p>	<p>The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the WHS and its OUV. This includes producing an HIA in accordance with the ICOMOS Guidance (as confirmed in numerous previous submissions, for example at ISH2 (Written Summary, [REP4-030], Agenda Items 3 and 4) and ISH8 (the written summary of which is submitted at Deadline 8, Agenda Item 3.3). In terms of the reference cited from that Guidance relating to there being no major impact on OUV, please see the response to paragraph 6.2.16 above,</p>

	<p><i>Impact Assessment. This Guidance allows for positive impacts to be considered but the relevant objective remains that there is no major impact on OUV.</i>” (Final Report on the joint WH Centre/ICOMOS Advisory mission to Stonehenge, Avebury and Associate Sites, 5-7 March 2018, p.36)</p> <p>In respect of the Mission’s disagreement with the conclusions reached on HIA for the Scheme, please see Mission Report, <i>ibid.</i>, pp. 6–7, 20 and 35.</p>	<p>which confirms that the overall effect on the OUV of the WHS would be slight beneficial.</p> <p>The Applicant has previously responded regarding the recommendations of the UNESCO/ICOMOS missions carried out in 2015, 2017 and 2018 in Deadline 3 Comments on Written Representations [REP3-013, paras. 12.1.3-6; 12.2.12-15].</p>
6.2.18	<p>11.2.31 OUV attributes of OUV and heritage assets</p> <p>We found and continue to find the Applicant’s comments to be muddled. We had not hitherto heard of the term “convey or express Attributes of OUV” (which also appears in paras. 12.3.26 and 12.3.34 of REP3-013). Attributes of OUV convey or express <i>the OUV of the WHS</i>: they <i>include</i> designated or non-designated heritage assets, as we stated in our earlier comments on the Applicant’s response.</p> <p>Highways England’s statement that “<i>A heritage asset is not an Attribute in itself: however, it may convey an Attribute</i>” serves further to underline the Applicant’s continuing muddled understanding of the difference between Attributes of OUV and OUV and, indeed, what Attributes of OUV are.</p>	<p>The HIA contains a glossary which defines key terms, including Attributes of OUV [APP-195, pp. 675-6].</p> <p>As noted in the WHS Management Plan, “It should be remembered however that the attributes are not themselves individually of OUV but that together they express the OUV of the Site” and goes on to refer to the “components” of attributes. (Simmonds & Thomas 2015, p.32, paras. 2.3.8 & 2.3.10).</p> <p>The terms ‘conveying’ and ‘expressing’ attributes of OUV are commonly used: please see Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011) and, for example, the introduction to the Attributes of the City of Bath World Heritage Site, “Attributes are aspects which convey or express the Outstanding Universal Value of the World Heritage Site and which contribute to and enhance understanding of the Outstanding Universal Value [...] Attributes are greater than individual components and need to include the valued characteristics which convey the values identified in the Statement of Outstanding Universal Value.” [https://www.bathworldheritage.org.uk/sites/world_heritage_site/files/heritage/City%20of%20Bath%20World%20Heritage%20Site%20Attributes%202014.pdf].</p>
6.2.19	<p>11.2.31 Resolving the issues associated with the existing A303</p> <p>We stand by our statements and agree with most of the Applicant’s comments – except in the case of “busy main roads”. The SoOUV was agreed at a time when there were several “busy main roads” going through the property: the A344, A303, A4 and A3461. The A344, which was a particular concern at the time of the WHS’</p>	<p>The Applicant’s Deadline 5 Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, p. 11-87, item 11.2.31], notes that:</p> <p>“A Statement of Significance for the Stonehenge, Avebury and Associated Sites WHS, was agreed by UNESCO in 2008. It is derived from the nomination and evaluation documentation of 1985/6. The Statement of</p>

	<p>designation and at agreement of the SoOUV, has now been <i>partially</i> removed. Neither at designation nor in the SoOUV is there any commitment to removal (or partial removal) of the A303 from the WHS. The emphasis is on “busy”, i.e., the effects of traffic and reducing its impact.</p>	<p>Significance (2008) was subsumed into the Statement of Outstanding Universal Value Integrity and Authenticity (the "SoOUV") (2013)." (Simmonds & Thomas 2015, p.261). The impacts of roads are highlighted in the SoOUV’s statement on integrity: “The presence of busy main roads going through the World Heritage property impacts adversely on its integrity.” One road clearly ‘goes through’ the property: the A303.”</p> <p>The SoOUV goes on to note that “The roads sever the relationship between Stonehenge and its surrounding monuments, notably the A344 which separates the Stone Circle from the Avenue.” The reasonable interpretation of this sentence is that other roads sever that relationship, however – the Applicant also notes for context that the A344 was specifically mentioned in the inscription documentation, as at the time of inscription the State Party (the UK) agreed to remove the A344 road to reunite Stonehenge and its Avenue and improve the setting of the Stone Circle; this was achieved in 2013-2014.”</p> <p>Therefore, both busyness and severance are issues, including with respect to the existing A303.</p> <p>The Applicant agrees that the A344 has been partially removed between Stonehenge Bottom and the Stonehenge monument, with the section between Airman's Cross and Byway 12 closed to public vehicular access, subject to Traffic Regulation Order HT-047-11 (https://cms.wiltshire.gov.uk/ieDecisionDetails.aspx?ID=517).</p>
<p>6.2.20</p>	<p>11.2.31 Balance adverse and positive impacts of the Scheme</p> <p>We see no explanation in the HIA undertaken by the Applicant following ICOMOS’ guidance of how adverse impacts on the WHS and its OUV have been balanced against the public benefit. Since ICOMOS confirms that the Scheme would have an adverse effect on the WHS, the Applicant’s conclusion on its HIA must be questioned.</p>	<p>ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011, para. 6.2, https://www.icomos.org/world_heritage/HIA_20110201.pdf) notes that “Every reasonable effort should be made to avoid, eliminate or minimise adverse impacts on attributes that convey OUV and other significant places. Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place. In the case of WH properties this balance is crucial”.</p> <p>The National Policy Statement for National Networks (NPSNN) is concerned to avoid substantial harm to heritage assets and includes requirements in relation to the balancing of less than substantial harm against the public benefit of the development. The Scheme’s compliance with the NPSNN requirements is demonstrated in the NPSNN accordance table in Appendix A</p>

		<p>of the Case for the Scheme and NPS Accordance [APP-294]. The ES notes NPSNN considerations in respect of WHSs in Table 6.1.</p> <p>The HIA [APP-195] assesses the impact of the proposed Scheme on the Attributes that convey the OUV of the WHS, their Integrity and Authenticity, as well as the alignment of the Scheme with the vision, aims and policies of the 2015 WHS Management Plan and the criteria for the site’s inscription as a WHS.</p> <p>With regards to balancing, see Highways England’s response to agenda item 3.vi in the oral submission report from ISH2 regarding Cultural Heritage [REP4-030] which explains the overall balancing exercise against public benefit. This is also set out in the Applicant’s Case for the Scheme and NPS accordance [APP-294], Appendix A, item 5.134. As explained in REP4-030 Agenda Item 3 vi:</p> <p>“The balance undertaken in the HIA is limited to heritage considerations, and is not the overall balancing that is required of the Examining Authority and Secretary of State. That overall balancing exercise and how the Applicant considers all the benefits and impacts of the Scheme should be weighed against each other is set out in the Case for the Scheme and NPS accordance [APP-294].”</p> <p>This confirms that it is not the role of the HIA to determine the (non-heritage related) public benefits of the Scheme and to balance the Scheme’s impacts generally, which is why that exercise is carried out in the Case for the Scheme and NPS Accordance. The results of the HIA have informed the balancing exercise set out in the Case for the Scheme document.</p>
<p>6.2.21</p>	<p>11.2.31 Integrity as a foundation of OUV</p> <p>We agree that integrity is a requirement for a WHS to be designated nowadays. It is one of the foundations of <i>designation and management</i> of a WHS property, not of its OUV, as the document to which the Applicant refers makes clear.</p>	<p>As the Stonehenge Alliance note, integrity is a foundation of World Heritage property designation and management.</p> <p>It is also a qualifying concept, one of the conditions which must be met for inscription as a World Heritage Site. A Statement of Integrity is required as part of the Statement of Outstanding Universal Value (UNESCO Operational Guidelines 2017, para. 155); conditions of integrity are described in Section II.E of the <i>Operational Guidelines</i> (UNESCO 2017, paras. 87-95). The origins of the concept are detailed in H. Stovel 2007 Effective Use of Authenticity and</p>

		<p>Integrity as World Heritage qualifying conditions. City & Time 2 (3): 3 (http://www.ceci-br.org/novo/revista/docs2007/CT-2007-71.pdf).</p>
<p>6.2.22</p>	<p>11.2.32 Balancing in NPSNN – balancing of harm to heritage assets against public benefit</p> <p>It appears to us that the applicant is attempting to “have it both ways” in terms of the balancing exercise. Please see our comments under 11.2.31, above, under “Balance adverse and positive impacts of the Scheme”.</p> <p>In terms of the ICOMOS guidance on HIA, Highways England undertook a balancing exercise between perceived adverse and positive impacts on OUV attributes, sidestepping the issue of balancing impacts of the Scheme on attributes of OUV against the public benefit. Having followed ICOMOS guidance on data assessment incorrectly (by not according sufficient value to protection of the WHS, its OUV and integrity), the Applicant arrived at a “Slight beneficial” outcome for the WHS, which differs from the assessment of ICOMOS as member of Advisory Missions and co-reporter to the WH Committee who all consider the Scheme to adversely affect the WHS.</p> <p>Using a ‘slight beneficial’ but unsound HIA conclusion to bolster any overall balancing assessment of the Scheme is, we submit, not acceptable. In view of the 2019 Decision of the WH Committee, that overall balance should, in our view, now be reassessed.</p>	<p>The Applicant refutes the statement by Stonehenge Alliance that it is attempting to “have it both ways” in terms of the balancing exercise. As explained above in the response to paragraph 6.2.21, the Applicant has undertaken the exercise of balancing impacts against the public benefit and has not “sidestepped” that exercise. In terms of balancing the impacts on attributes of OUV, the Applicant has explained in the Comments on any Further Information at deadline 4 [REP5-003], item 11.2.26 that,</p> <p><i>“In terms of balancing the harm and benefits of attributes of OUV as a result of the Scheme, in order to arrive at an overall effect on the WHS as a whole, the Heritage Impact Assessment has been prepared following ICOMOS guidelines...The scope and approach of this assessment, which is reported in ES Appendix 6.1 [APP-195], was endorsed by UNESCO/ICOMOS in their report from their third advisory mission on the scheme in early 2018...The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the whole WHS and its OUV. It considers that the approach to balancing the impacts of the Scheme on attributes of OUV in order to reach an overall conclusion in terms of the impact on the OUV of the WHS is appropriate, and necessary in order to inform the tests required to be undertaken by the Secretary of State.”</i></p> <p>The Applicant also does not agree with Stonehenge Alliance’s comment in respect of their views regarding the difference between the Applicant’s “Slight beneficial” outcome for the WHS, which differs from the assessment of ICOMOS as member of Advisory Missions and co-reporter to the WH Committee who all consider the Scheme to adversely affect the WHS. The Applicant has explained in the Comments on any Further Information at deadline 4 [REP5-003], item 11.2.25 that,</p> <p><i>“With respect to the decision by the World Heritage Committee in July 2019, as recorded with respect to Agenda item 3(v) in the written summary of oral submissions from the hearing [REP4-030], Mr Nichol</i></p>

		<p><i>of DCMS¹ reported at the hearing that the view of DCMS was that the then draft decision amplifies the perceived negative impacts of the Scheme and does not adequately reflect the extent to which the World Heritage Committee’s 2018 decision has been taken into account by DCMS as the State Party and Highways England.”</i></p> <p>With respect to the HIA and other detailed evidence presented, the Applicant has made submissions at ISH8 on 21 August 2019 as to the evidence base before the World Heritage Committee compared with the far more detailed evidence base before the Examining Authority and Secretary of State (see the Applicant’s written summary submitted at Deadline 8, Agenda Item 3.2(i)).</p> <p>The Applicant also disagrees with Stonehenge Alliance in its view that the HIA conclusion is unsound. The Applicant maintains that the HIA is correct and sound and there is no reason for any reassessment.</p>
<p>6.2.23</p>	<p>11.2.32 Stakeholder reference group</p> <p>Whatever Highways England’s interpretation of the meaning of “conserve and enhance” may be, the 2019 Decision of the UNESCO WH Committee makes it obvious that the Scheme would not meet the aim of the Technical Group that the OUV of the WHS is conserved and enhanced by the Scheme.</p>	<p>The Government’s objectives for the Scheme are clearly set out in the Case for the Scheme and NPS Accordance [APP-294], as follows:</p> <ul style="list-style-type: none"> • Transport - To create a high-quality, reliable route between the South East and the South West that meets the future needs of traffic; • Economic Growth - to enable growth in jobs and housing by providing a free flowing and reliable connection between the South East and the South West. • Cultural Heritage - To help conserve and enhance the World Heritage Site and to make it easier to reach and explore; and • Environment and Community - To improve biodiversity and provide a positive legacy for nearby communities. <p>As a result of the sensitive design and mitigation measures described in the ES [APP-043 to APP-053], HIA [APP-195], the DAMS [REP7-019], and the OEMP [AS-085] and secured by the requirements of the dDCO [REP7-019], the Applicant believes that the Scheme will meet its objective to conserve and enhance the WHS and make it easier to reach and explore.</p>

¹ DCMS is the Department for Digital, Culture, Media and Sport

		With respect to the World Heritage Committee Decision and the Applicant's submissions in this respect, please see the response to paragraph 6.2.15 above.
6.2.24	<p>11.2.38 Ground stabilisers</p> <p>We note that the Applicant has so far provided no information on the appearance of ground stabilisers. It is understood that, depending on ground conditions, ground stabilisers can be very substantial indeed in both functional design and appearance.</p>	<p>If this refers to ground anchors or bolts, they can indeed be substantial elements, depending on the existing ground conditions and the loads that they are required to support. As detailed in point 17.3.20 of REP3-013 the current assessment indicates that slopes and embankments can be safely constructed without the need for reinforcement or other stabilisation measures. The details of the cuttings will be developed through the detailed design process, however the Applicant would note that if stabilisation measures such as ground anchors or bolts are required, they are buried elements, their appearance is limited to the end plate on the surface of the retaining wall which can be covered, or otherwise visually mitigated. This will be able to be considered as part of the application of the design principles which apply to the retaining walls in section 4 of the OEMP.</p> <p>If this refers to ground stabilisation during tunnelling, our previous responses including the Written Summaries of Oral Hearings Cultural Heritage item 7iii [REP4-030] and Flood Risk & Geology item 5.1 [REP4-032] have confirmed that ground stabilisation can be undertaken from within the tunnel horizon where it is safe and practicable to do so.</p>
6.2.25	<p>11.2.44 on whole corridor assessment</p> <p>Highways England refers to WebTAG Guidance as mandating the process to be followed in assessing the project. According to the WebTAG Unit on Forecasting and Uncertainty¹, projects that are "near certain" and possibly those that are "more than likely" should be included in the Reference Case scenario. On this basis, two projects in the corridor are included. Given that the A303 Sparkford to Ilchester project application has yet to be decided and the A358 Taunton to Southfields has yet to have a Development Consent Order application submitted, this seems to prejudge the process. More importantly, the same WebTAG Unit recognises (paragraph</p>	<p>As Stonehenge Alliance outlined, TAG Unit M4: Forecasting and Uncertainty, para 3.2.4 states "usually it would be expected that those inputs categorised as 'more than likely' will be included in the core scenario". Unit M4-Table A2 states that projects where 'Submission of planning or consent application imminent' or 'Development application within the consent process' should be considered 'more than likely'. A303 Sparkford to Ilchester and A358 Taunton to Southfields are in this stage of the planning process and accordingly have therefore been included in the 'core scenario' in accordance with WebTAG. The other potential A303 corridor schemes would best be expressed as 'a policy aspiration', and hence 'hypothetical' using the language in Table A2 of TAG unit M4, and accordingly excluded from the core scenario.</p>

	<p>5.1.1) that other scenarios (in addition to Core, High Growth and Low Growth) “may be required to test the impacts of significant sources of local uncertainty. These scenarios should also be subject to a full appraisal.” In The Stonehenge Alliance’s view, testing the impact of the full A303 corridor programme is certainly required, as it is likely to have a major impact on the proposed project.</p>	<p>As outlined in response to paragraph 6.1.1, the core and high growth scenarios show that the scheme operates well within the capacity of a dual carriageway. The scheme is therefore still effective in reducing congestion under high growth scenario as required by TAG Unit M4. Furthermore, the consistent nature of impacts shown across different forecast years and scenarios explained in the Applicant’s response to Tr.2.1 [REP6-032] demonstrates that the scheme impacts are relatively insensitive to forecasting uncertainties. WebTAG Guidance for the Technical Project Manager, paragraph 1.3.3 outlines HMT’s Green Book requirement that schemes should be subject to proportionate assessment; in context therefore undertaking the additional sensitivity analysis suggested by Stonehenge Alliance would not be appropriate.</p>
6.2.26	<p>11.2.46 on assessment of alternative modes</p> <p>Highways England state that the Technical Note on Assessment of Alternative Modes” (Appendix 8.5 to the Transport Assessment) did not test the public transport alternative against the requirement that it reduced the stress level on the A303 to the level forecast in the Do Something scenario (0.53), although they concede that the heading of Section 3.6 “Public Transport Requirements” might imply this. In fact, Section 3.6.2 estimates the number of people who would need to transfer to rail to achieve a stress level of 0.53 in the Do Minimum scenario. Paragraphs 3.6.3 and 3.6.4 convert this into the number of trains required to accommodate them. This then feeds through to Paragraphs 6.2.2 and 6.2.3 where the public transport alternative is assessed against the criterion “what impact would a modal alternative require in order to relieve the problem to the same degree”. This is defined as transferring the number of passengers required to achieve a stress factor of 0.53. Highways England’s consultants conclude “Realistically, rail investment could not achieve the same level of impact as the road scheme in alleviating the problem. Therefore, the road scheme is the most viable, and only option.” From this it is extremely hard to avoid the conclusion that this was the criterion against which the public transport alternative</p>	<p>In interpreting the criterion against which public transport options were assessed, Stonehenge Alliance would appear to be selectively referencing from the Technical Note on Assessment of Alternative Modes, referring to 6.2.2 – 6.2.3, but omitting 6.2.4.</p> <p>Paragraph 6.2.4 states “More detailed analysis of the potential for modal transfer to rail, assuming a hypothetical step-change in rail facilities, shows that traffic flows on the A303 could only be reduced by in the order of 11%. This would not relieve the problem to any noticeable extent.”</p> <p>The Applicant would again refer Stonehenge Alliance to Written Question Tr.1.37 [REP2-036] where the Applicant has explained why rail would not be a viable option.</p>

	<p>was assessed. Clearly 0.53 is a lower stress level than would normally be expected. Highways England have argued elsewhere that this is a consequence of the increments in which highway capacity can realistically be increased. However the same step change increments do not necessarily apply, or apply at the same points, for other modes and it appears that an excessively high requirement was applied to the public transport alternative.</p>	
<p>6.2.27</p>	<p>11.2.47 and 11.2.48 on Option F010</p> <p>In their comments set out in both paragraphs, Highways England restate their position that “The longer distance and alignment of F010 make this option less attractive for local movements than D061 / D062 and it is more likely that trips making local movements, including HGVs, will use the local roads north of the A303”. This contradicts their own modelling which shows a reduction in flows on local roads north of A303. It also shows that flows are relatively low in the Do-Minimum scenario.</p> <p>As we have argued in our comments on Highways England’s response to the Examining Authority’s question AL.1.11, the risk of rat running in response to incidents on the A303 would also be lower with this option.</p>	<p>Stonehenge Alliance comment on traffic flows shown in Figure 10.5 in the TAR [REP1-031]. This shows some locations on the local road network, highlighted by Stonehenge Alliance, where traffic volumes in the pm peak were forecast to reduce relative to forecasts without any change to the A303. It also shows local roads where traffic flows were forecast to increase with F010. The discussion here however relates to the relative performance of the corridor D options and that of F010. Figure 10.3 of the TAR illustrates the flow changes forecast for Corridor D. In contrast with Figure 10.5 for F010, the forecasts for corridor D show no net (2 way) increases in traffic volumes on the local roads through the Shrewton, Larkhill and Durrington and show greater reductions in traffic on the B390 route through Shrewton. The evidence in the TAR is therefore consistent with the response stated in paragraphs 11.2.47-9 of REP05-003 that Corridor D is more effective at reducing traffic levels on local roads north of the A303 than Option F010; the assertion made by Stonehenge Alliance that the evidence in the TAR is contradictory is thus incorrect.</p> <p>Stonehenge Alliance also speculate that Option F010 might, in the event of incidents on the A303, result in reduced rat-running onto local roads to the north of the A303 than the preferred route (due to the road being further away). They offer no evidence offered to justify this supposition. Even if it is correct, Stonehenge Alliance fail to acknowledge the likelihood of similarly disruptive impacts for local roads and settlements to the south of the A303 should incidents occur. Provision of a higher capacity route would address traffic congestion related causes for such impacts on the local road network and thus substantially reduce such impacts.</p>

6.2.28

11.2.49 on CO₂ Emissions

In their response on this point, Highways England concede that the project will result in an increase in carbon emissions, although they seek to minimise its significance. In view of the recent declaration of a climate emergency and the Government's commitment to a zero net carbon economy by 2050, The Stonehenge Alliance's position remains that future infrastructure investment projects should seek to reduce CO₂ emissions and it is inappropriate to approve projects that are forecast to increase them.

The carbon assessment as presented in Chapter 14 of the ES [App-052] identified that the Scheme would create carbon emissions above the existing baseline but as outlined in applicant's response REP3-052: "this assessment established that even during the period when carbon emissions from the project will be at their highest level (short and near term construction activity), the project will only contribute to 0.023% of the UK's carbon budget for the relevant carbon budget period (the 4th carbon budget period). During Scheme operation, the Scheme's carbon emissions will equate to an extremely marginal 0.008% of the UK's carbon budget for the 5th carbon budget period. These figures are based on a precautionary assessment which does not take into account or rely upon the further decarbonisation of the UK electricity system, nor any ongoing move to lower carbon fuels nor the carbon benefits from land use changes incorporated into the scheme (i.e. increased areas of habitat and decreased areas of land under intensive arable agriculture). Despite this scale and the precautionary nature of our assessment, we recognise the need to mitigate GHG emissions hence, we have identified several GHG mitigation proposals as outlined in Chapter 14 of the ES [APP-052].

The carbon assessment has considered emissions from the Scheme in two separate phases, emissions during construction and emissions during operation. Construction of the Scheme is a short-term activity that will be complete by 2026. Emissions from construction therefore fall within the nearer term 3rd and 4th carbon budgets. Emissions from the operation of the Scheme will fall into the 4th, 5th and subsequent future budgets once set through to 2050. Whilst some tightening for these is likely to occur when the carbon budgets are reviewed and revised in 2020, to reflect the recent commitment to a net zero carbon economy by 2050, the Committee on Climate Change has indicated that the trajectory will be steeper therefore it is the later carbon budgets rather than near term ones which will see a greater impact. We do not expect therefore that the near-term carbon budgets will be significantly different to those currently published.

The assessment of carbon emissions presented in Chapter 14 of the ES [APP-052] considers the carbon emissions impact of road users. Carbon

emissions from road users have been calculated as part of the WebTag assessment process. Between 2026, the year of opening and 2032, the end year of the latest carbon budget to be set, carbon emissions from road users are estimated to increase by 16%. As stated in Chapter 14 of the ES, paragraph 14.3.7 however, the uptake of lower carbon fuels, electric vehicle technology and the decarbonisation of the grid is not accounted for under the HA207/07 approach used for the carbon assessment. In practice therefore, as the measures contained in the UK Government Strategy 'Road to Zero'¹¹¹ published in 2018 are realised e.g. by 2030 between 50% and 70% of new car sales and 40% of new van sales will be ultra-low emission vehicles, and by 2040 all new car and van sales will be zero carbon vehicles, the carbon impact associated with road users will in practice be substantially lower than the numbers identified in the assessment. The projected increase in Electric Vehicles will also reduce the energy requirements of extraction systems within the tunnel reducing operational emissions further.

Highways England is committed to reducing the operational emissions of the road network at a national scale, as well as on an individual infrastructure project scale. Highways England is investing in renewable energy technology and feasibility studies across the network to reduce carbon emissions, including renewable energy solar farms to support the energy requirements of road tunnels, and photovoltaic noise barriers to power signage, cameras and roadside detectors. Highways England is also reducing the emissions of assets and buildings and rolling out improvements to depot efficiencies as part of the depot greening programme, including fitting solar panels and using LED task lighting. In practice, these Highway England programmes which are being assessed and managed across the strategic road transport network and estate will substantially decrease operational emissions beyond that stated in the assessment.

CC.1.6 in the Examining Authority's Written Questions [REP2-028]: Highways England also notes paragraph 5.17 of the National Policy Statement for National Networks (NPSNN) which states that it is "very unlikely that a road project will in isolation affect the ability of Government to meet its carbon reduction plans". In the context of the Scheme, we agree with that statement

		<p>and that this Scheme is assessed and demonstrated to be such a policy compliant case. Highways England considers climate change to be a very important issue, and as such has conducted a thorough assessment of the impact of the Scheme on climate change”.</p> <p>In conclusion notwithstanding the 0.008% impact on National carbon emissions reported in the assessment from scheme operations and road use, actions and activities already being implemented including Highways England’s investment in renewable energies as well as decarbonisation of road fuels and proposed beneficial land use changes which are expected to increase areas of carbon sinks will ensure the compliant performance of the project.</p> <p>^[1] https://www.gov.uk/government/news/government-launches-road-to-zero-strategy-to-lead-the-world-in-zero-emission-vehicle-technology</p>
6.2.29	<p>11.2.50 on traffic flows</p> <p>The Stonehenge Alliance does not accept that the use of national travel data in our original Written Representation (REP2-129)) was inappropriate. As we explained at considerable length in that document, there is an increasing body of evidence that demonstrates that traffic growth has largely stalled, in the UK and elsewhere, and this preceded the 2008/9 recession. We acknowledge that there has been some recent growth on inter-urban trunk roads, partly in response to Government policy that has held down excise duty on motor fuel, while increasing rail fares above the Consumer Price Index measure of inflation. However this has been exaggerated by Highways England by quoting growth since 2000, rather than 2004, which appears to be the point at which traffic growth stalled nationally. We also noted in our Written Representation that the available data for A303 near Stonehenge does not show sustained growth after the early years of this century.</p>	<p>In their response in Section 3.3 [REP4-56], Stonehenge Alliance implicitly agreed with the Applicant that a consideration of national statistics should reflect the context and be based on rural A roads rather than all roads as set out in their Written Representation. In clarifying this appropriate use of national traffic statistics, the Applicant presented trends (para 16.4.10 [REP3-013]) for 2000-2017 because this was the period Stonehenge Alliance had chosen to use in their Written Representation (paragraph 3.3.5 of [REP2-129]). The Applicant thus refutes that they have sought to “exaggerate” growth. Stonehenge Alliance have agreed that traffic has grown on the rural A road network. The DfT forecasts, set out in RTF18, are that traffic will continue to grow on the rural trunk road network in the future.</p> <p>In paragraph 16.4.11 [REP3-013], the Applicant explained that Stonehenge Alliance have not considered how capacity constraints of this section of the A303 will have affected historic trends in traffic growth using the A303 near Stonehenge. The journey time data demonstrates that there are delays caused by congestion, i.e. that there are existing capacity constraints. As shown in the traffic forecasts, the Scheme, by removing these constraints and improving journey times is forecast significantly to increase traffic flows on the A303. It is reasonable to conclude that traffic flows would be higher today</p>

		<p>without the existing constraints and therefore the recent trends in traffic flows on the A303 do not support Stonehenge Alliance’s assertion that the A303 flow trends are credible evidence that demand for travel along the A303 corridor has not increased after the early years of this century.</p>
<p>6.2.30</p>	<p>11.2.51 on driver information</p> <p>The discussion on this issue arises from the statement in The Stonehenge Alliance’s original Written Representation (REP2-129) that “improved driver information systems – both on-line and through roadside signage – would assist drivers to avoid any blockages. Improved information systems would also give drivers greater certainty and might assist in reducing rat-running.” (para. 3.6.2). This was in the context of a discussion about network resilience. Highways England responded that improved information would “by definition” increase rat-running. Their latest response appears to withdraw that assertion by stating that “a large proportion of the population currently have the ability to access online route planning tools that would show when there is congestion on the A303 and can indicate alternate routes including appropriate routes further away from the A303.” If drivers are already well informed, then it is implausible that making them even better informed would result in them making more use of inappropriate local roads, which would quickly become congested, where better options are available. Highways England now seem to be saying that the impact would be a small positive, rather than negative, as they said previously. While the Stonehenge Alliance agrees that a large proportion of the population have access to on line route planning tools, we continue to believe that there is potential for improved information to prompt those with these tools to make use of them, and to provide advice to those without them.</p>	<p>The Applicant’s response (paragraph 11.2.51 [REP5-003]) explains why Stonehenge Alliance’s supposition that the traffic problems between Amesbury and Berwick Down might be addressed by driver information systems should not be given credence.</p> <p>The Applicant’s response at paragraph 16.4.28 [REP3-013] responding to Stonehenge Alliance’s comments on the value of driver information systems to help drivers avoid congestion, explained that the consequence of more drivers diverting from the A303 would be to increase the impacts caused by those drivers on the local roads and communities.</p>

6.2.31	<p>11.2.52 on induced and diverted traffic. It appears that Highways England now accepts that The Stonehenge Alliance's assessment on this point is correct.</p>	<p>Stonehenge Alliance, in their response to item 11.2.52 [REP5-003] have correctly interpreted that in addition to 1,000 trips diverting from M4 and A31, a further 1,000 net trips are forecast to divert from other A Roads. Some of these other A Roads, such as the A342, are local authority roads and that there would be benefits for the operation of the local road network and for the local communities along them arising because traffic is forecast to reduce as a result of the Scheme.</p>
6.2.32	<p>11.2.53 on modelled journey times</p> <p>The Stonehenge Alliance has raised concerns about the capacity of the motorways at each end of the A303/A358 to accommodate future demand, especially if the full corridor programme is implemented. Highways England has not responded to this concern but has, instead, argued that the approach they have taken is consistent with WebTAG. In our comments on 11.2.44, we have set out the reasons why a full corridor appraisal is essential, and this should include assessment of the capacity of the connecting motorways to cater for the increased traffic which would result from it. Highways England also repeat statements that they made in their Summary of Oral Submissions at the Hearing on Traffic and Transportation (REP4-034). The Stonehenge Alliance responded in detail to these statements in our comments on this document at Deadline 5 (REP5-021).</p>	<p>Future congestion on the M3 to the east of the fully modelled area is represented in Highways England's assessment of the Scheme, as explained in paragraphs 16.4.37 – 16.4.41 of the Applicant's Comments on Written Representations [REP3-013]. Paragraphs 6.2.3, 6.2.4, 6.2.5 [REP7-021] explain why Stonehenge Alliance's concerns that the effects of potential congestion on the M3, are not material for the assessment of the Scheme impacts.</p> <p>As explained in paragraph 16.4.79 [REP3-013] and set out in the Application Document [APP-300] Model Development Package, Figure 4-1 SWRTM Modelled Areas and Network Coverage, the M5 at the western end of the A303/A358 corridor is within the Region of Focus and therefore the capacity of the M5 is explicitly represented in the scheme assessment.</p>
6.2.33	<p>11.2.54 on emissions</p> <p>The Stonehenge Alliance considers that it is essential to consider the impacts – including the emissions impacts – of the whole A303 programme as well as the impacts of the Amesbury to Berwick Down scheme in isolation. The reasons for this are set out in our comments on 11.2.44 above, and further comments on the importance of emissions are given on 11.2.49.</p>	<p>It is assumed that, by 'the whole A303 programme' the representation is referring to the A303/A358 corridor and the works included within the Road Investment Strategy (RIS). Please refer to applicant's response REP3-013:</p> <p>"The cumulative impacts arising from other schemes to enhance the A303/A358 corridor committed to within RIS1 have been fully considered. In relation to cumulative traffic effects, traffic details can be found in the Transport Assessment [APP-297] section 5.3. Regarding cumulative emissions effects, the traffic data utilised in the assessment of air quality</p>

		effects assumes that the Road Investment Programme (RIP) schemes in the Road Investment Strategy (RIS1) to the west of Stonehenge: the A303 Sparkford to Ilchester improvement; and the A358 Taunton to Southfields scheme are constructed and operational, as set out in ES Chapter 5, Air Quality [APP-043], Section 5.4. As such, the full impacts of these schemes are fully understood in the context of emissions.”
6.2.34	<p>15.1.1</p> <p>Highways England welcome the support they received from Devon County Council. However the Council were very clear in their evidence that they consider that the full A303 programme needs to be implemented in order for the benefits, which they believe to exist, to be unlocked. This further emphasises the importance of a full appraisal of the corridor programme as a whole, as discussed in relation to 11.2.44. While we agree with Devon County Council on this point, we do not agree that implementation of the full A303 programme would unlock major benefits for the South West peninsula. Our views on this point are contained in Section 3.7 of our original Written Representation on Transport Planning and Economics (REP2-129).</p>	<p>One of the four Government’s objectives for the Scheme set out in Case for the Scheme and NPS Accordance [APP-294] is ‘to enable growth in jobs and housing by providing a free-flowing and reliable connection between the South East and the South West’. Andrea Davis’ summary of the oral submission at the Traffic and Transportation Issue Specific Hearing [REP4–061] outlined the benefits that Devon County Council and other organisations which the Councillor represents, have assessed that the upgrade to the A303 / A358 corridor will provide to the South West region.–The Applicant in response to Devon County Council’s Local Impact Report [REP1-060]], provided a response on the status of the upgrade to A303/A358 corridor (as set out within the Road Investment Strategy) [REP3-013] Section 48.1.4-7, Councillor Andrea Davis’ concluded by stating “I represent many constituents and businesses in the South West Peninsula who wish to see this scheme completed and reap the benefits of all the work that has been undertaken so far”.</p>
6.2.35	<p>11.2.57 on impacts of TBM</p> <p>It is not the stability of the archaeological remains as they currently stand in situ that is of primary concern but their potential disturbance arising from vibration and/or settlement owing, possibly, to migrating voids in the ground rock beneath caused by operation of the TBM. We note that that no measures to <u>protect</u> such archaeological remains have been described in the revised OEMP at Deadline 6 (REP6-012, ref. PW-NO14, MW-NO15, PW-CH1 and PW-CH8) and that such measures are to be provided by the main works contractor. There is no certainty at the present time that any such measures could either be devised or would be effective.</p>	<p>The Applicant has responded previously regarding the sensitivity of the archaeological remains above the tunnel at ISH5 Written Summaries of oral submission at Issue Specific Hearings - Noise and Vibration [REP4-031; agenda item 6 (iii)], and on the predicted effects of excavation-induced ground settlement on archaeology affected during construction (see Environmental Statement Appendix 10.6 - Land Instability Risk Assessment [APP-278, Section 6.4]. The Applicant considers that the current sensitivity of the heritage assets to vibration/settlement is key in determining the potential significance of any vibration/settlement impacts.</p> <p>As set out in the Applicants response to Written Question CH.2.9 part ii [REP6-022], MW-G7 of the OEMP requires various management plans to be prepared by the main works contractor, including the Noise and Vibration Management Plan, the Ground Movement Monitoring Strategy and Heritage</p>

		<p>Monitoring Plan to be prepared in consultation with Wiltshire Council, the Environment Agency, Historic England and Natural England on those aspects that are relevant to their functions. As such, key stakeholders will feed into the process of determining the final monitoring regimes and mitigation measures, including in relation to archaeology. Highways England propose to amend the DCO to provide that the OEMP and the subsidiary plans will be subject to Secretary of State Approval.</p> <p>The Applicant's response to Written Questions Ns.2.7 and Ns.2.8 [REP6-031] discusses the principles for safeguarding archaeological remains from effects of vibration and settlement. These principles include the requirement for the main works contractor to identify assets at risk and develop methods to ensure the protection of the assets as part of their respective management plans, in consultation with HMAG.</p>
<p>6.2.36</p>	<p>11.2.57 on impacts of TBM</p> <ol style="list-style-type: none"> 1. To do a proper assessment of a significant effect, it is necessary to (a) predict the effect using a competent method, and (b) assess it against an appropriate significance criterion. 2. Highways England say, effectively, that they do not know what the significance criterion should be, and that they have used a prediction method which overpredicts and is therefore inappropriate. 3. In the light of (1) and (2) monitoring serves no purpose. 4. In the light of (1) and (2) assessment on a "case-by-case basis" has no meaning. <p>It follows inescapably that 'a full and correct assessment of the risk of damage to archaeological remains. has not been carried out.</p>	<ol style="list-style-type: none"> 1. a) The prediction methodology used with regard to vibration from tunnelling is the applicable British Standard: BS 5228-2. BS5228-2 has been approved by the Secretary of State as being suitable for the purposes of providing guidance on noise and vibration from construction sites. BS 5228 has been subject to independent British Standard Institute (BSI) processes, which has included industry representation on the technical committee and public consultations, and independent review commissioned by DEFRA. 1. b) All parties involved have agreed there are no standard significance criteria for heritage assets, hence the need to assess each asset on a case by case basis based on their varying sensitivity. 2. As detailed in the response to 1. a) the adoption of the methodology in the relevant British Standard, which is known to be conservative, is considered to be an appropriate approach given the level of interest in the impact of the tunnelling in the WHS. The applicant wishes to avoid any potential for under predicting the impacts. See the response to 1. b) regarding significance criteria 3. Vibration predictions are highly dependent on local ground conditions, monitoring will be used to confirm the conservative nature of prediction and will enable site specific mitigation decisions to be made based on the local ground conditions.

		<p>4. A case by case assessment of heritage assets is essential due to the highly variable nature of the potentially affected heritage assets.</p> <p>The applicant disagrees that a full and correct assessment of the risk of damage to heritage remains has not been carried out. Further details are provided in the responses to Written Questions Ns.2.6 and Ns.2.7 [REP6-031]. Ns.2.6 summarises the assessment work completed in terms of both vibration predictions and sensitivity of potentially affected heritage assets. Details of monitoring and mitigation are provided in the response to Ns.2.7. It is noted that controls relevant to vibration from tunnelling will be included in the Noise and Vibration Management Plan, the Ground Movement Monitoring Strategy, and the Heritage Monitoring Plan, all required by the Outline Environmental Management Plan (OEMP) [REP7-024]. Highways England propose to amend the DCO to provide that the OEMP and the subsidiary plans will be subject to Secretary of State Approval.</p>
<p>6.2.37</p>	<p>11.2.58 Heritage value accounts for 75% of PVB</p> <p>HE comment that:</p> <p><i>“Enhancing the cultural heritage of the Stonehenge World Heritage Site, through the delivery of the A303 Amesbury to Berwick Down Road Scheme, formed an integral part of the Client Scheme Requirements and, therefore, is a core objective for this scheme. It is because of this core objective it is not surprising that cultural heritage is part of the assessment of value for money of the Scheme.”</i></p> <p>My point was that it was surprising, not that cultural heritage was part of the assessment, but that it accounted for such a large proportion of the scheme benefits (and is responsible for a large proportion of the costs) on what is primarily a highways project delivered by a highways agency.</p> <p>HE state that:</p> <p><i>“The CV method of monetising heritage benefits is an accepted standard method of assessing intangible benefits in assessment of</i></p>	<p>The Scheme offers an effective solution to the two key challenges – congestion on the A303 and the impacts of the road and traffic on the WHS. It will remove a long-standing bottleneck for road users, helping to create a high-performing dual carriageway route to the South West, supporting the local and regional economy. With part of the road in a tunnel, the Scheme will also remove a large section of the A303 from part of the WHS, allowing the two parts of the site to be reconnected. The Scheme benefits are therefore wide ranging and should be considered as a totality.</p> <p>Given the national and international significance of the WHS, it is not surprising that the benefits of enhancing the tranquillity, visual amenity and landscape severance associated with removing the road from the WHS are significant.</p> <p>3. Highways England has responded in detail in previous responses to SHA on the robustness of the methodology that underlies the fact that is an accepted standard method.</p>

	<p><i>value for money in publicly funded projects. The assessment of value for money – and its conclusion - is therefore sound.”</i></p> <p>The use of an ‘accepted’ methodology is self-evidently no guarantee that the assessment and its conclusion will be sound. The methodology is hypothetical and riddled with caveats and uncertainties, and has produced implausible results.</p>	
6.2.38	<p>11.2.59 94% of the heritage value derives from the general population who are unlikely to experience the site</p> <p>HE have come up with a novel definition of existence value:</p> <p><i>“In this context, the term ‘existence value’ does not refer to the existence of Stonehenge, but to the existence of the improvement in the visual amenity, noise and landscape severance.”</i></p> <p>Existence value is a well understood concept in landscape perception, dating back at least to the foundation of national parks in America in the 19th century, that the existence – and by extension protection – of special places or icons of nature has a value to people who would probably never actually see them. Yellowstone has a value to some citizens of New York who would never venture there, especially 150 years ago when wilderness was still feared to a significant extent.</p> <p>HE’s interpretation of existence value in this context is so wide of the mark that it discredits their case to the point of absurdity. Apart from anything else, if existence value as discussed by Simetrica was meant to be about the existence of the purported improvements and not about the attributes of OUV in the WHS, it is no different from the rather more dubious concept of altruism.</p>	<p>Highways England acknowledges the Stonehenge Alliance explanation of Existence Value and considers it to be consistent with previous representations from Highways England, but reminds the Examining Authority that we are not valuing the existence of Stonehenge and that the scheme doesn’t present a threat to the existence of the WHS. The explanation of the Cultural Heritage Valuation captured by the contingent valuation survey has been very clear that it only values the enhancement to the tranquillity, visual amenity and landscape severance associated with removing the road from the WHS. The existence value of that change – not the WHS - has been captured.</p>
6.2.39	<p>11.2.60 Bias</p> <p>HE attempt unconvincingly to defend actions to minimise bias, but do not respond to my comment that minimising bias is not enough when</p>	<p>In 2015, the Department for Transport published guidance setting out its commitment to ensuring public resources are invested to enhance the UK’s transport network and provide the greatest benefits to society, in the most efficient way. The Guidance sets out the importance of investment decisions</p>

	<p>the outcome is such a frail BCR. They then ignore the fact that my comment was about BCR by referring to the incorporation of non-monetary values in the value for money assessment. Without a positive BCR the scheme would not go any further, and the (barely) positive BCR relies overwhelmingly on the input of only one aspect of heritage value.</p>	<p>being based on clear and robust value for money advice. The value for money framework sits alongside WebTAG and explains how to use the appraisal results to provide value for money advice. The guidance is clear that following the HM Treasury Green Book principles it is preferable for impacts to be measured in monetary values (monetisation) but recognises that not all benefits (and costs) can be monetised. The final stage of the value for money assessment requires consideration of non-monetised impacts. For non-monetised impacts, WebTAG recommends using a seven-point scale to denote the magnitude and nature of the impacts, ranging from large adverse to large beneficial.</p> <p>The culmination of a value for money assessment is the value for money category. This is a succinct summary of the overall assessment, considering monetised and non-monetised impacts. The guidance is clear that it is not just the BCR that informs value for money and there is no requirement for monetised benefits to outweigh monetised costs: A BCR of below 1 does not prevent a scheme progressing through the appraisal and approval processor limit the Value for Money Rating.</p> <p>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/630704/value-for-money-framework.pdf</p>
6.2.40	<p>11.2.61 Representativeness of 'general population' sample HE summarise their 'response' here by stating that: <i>"There is no empirical evidence to suggest reassigning survey respondents between groups creates bias as the sample characteristics broadly reflect those of the population."</i></p> <p>It is simply wrong to say that the general population sample as used in the CV assessment has characteristics that broadly reflect those of the (general) population, given that 23.4% of the sample 'general population' study group lived within 50 miles of Stonehenge. 23.4% of the population of the UK do not live within 50 miles of Stonehenge. It is completely untenable to suggest that this geographical bias will have no significant effect on perceptions of Stonehenge by the general population.</p>	<p>To ensure that the study groups maintained representativeness of their respective populations, the visitor group was weighted by age, and the general population group weighted by region, gender, age group and income group to ensure representativeness of real-world populations.</p> <p>However, in light of the concerns raised by the Stonehenge Alliance we have performed additional sensitivity analysis on the data. This shows that mean willingness to pay values are lower (-£2.46) on average for the subgroup of the general population sample who live within 50 miles of Stonehenge compared to the general population who live further away (t-test, p=0.081). Therefore, any bias which is introduced through the reassignment procedure would be negative, producing a more conservative estimate of general population WTP for the proposed scheme than if these individuals had been left unassigned to the general population group.</p>

		<p>We therefore reiterate that the appropriate actions were taken to ensure that the reassignment of survey respondents between groups broadly reflected real-world populations.</p>
6.2.41	<p>11.2.62 Scenario testing</p> <p>HE's comments here are largely repetitive, based on a reluctance to accept that the basic unit of measurement – theoretical willingness to pay for something, knowing that the payment will never have to be made – is suspect, no matter how honestly the respondent tries to address the question. In travel planning we used to operate a 'rule of 4' for questions like willingness to cycle to work if improvements to the cycling experience were made: the rule, derived from empirical experience, was that whatever percentage of respondents said they would be willing to cycle should be divided by four to give a reliable estimate of how many would actually do so. There is almost certainly a similar effect in WTP, that respondents want to feel generous when they are not actually being asked to stump up the money, but in practice the amount they would actually be willing to pay is less than the amount they state. Perhaps the only way a genuine WTP could be established is by something akin to a crowd funding exercise: the scheme will go ahead if 60% of UK taxpayers are willing to pay an average of £45 each, but not otherwise. Other than this, a useful comparator is WTP for toll roads, for which the vastly underused M6 toll road in the Midlands provides an instructive answer.</p>	<p>The CVS followed the recommended approach for transport appraisal is based on the HM Treasury Green Book, the core UK Government guidance for policy evaluation. The Green Book stipulates that policies should be appraised in terms of all of the impacts that they create and that this should not be narrowly focused on economic impacts. The Green Book also stipulates that all impacts should be valued in monetary terms to the greatest extent possible. Heritage impacts and values are commonly assessed and incorporated into business cases in the cultural sector. We apply appropriate confidence intervals and sensitivity measures in line with the Magenta Book: HM Treasury guidance on what to consider when designing an evaluation (https://www.gov.uk/government/publications/the-magenta-book).</p> <p>95% confidence intervals are used as standard in other stated preference methods which are widely used in the transport sector: the values of time in DfT's WebTAG are based on a stated preference survey, as is the value of an avoided fatality, which is a major component of how WebTAG advises we assess accidents. These methods are also used in other sectors, for instance the National Institute of Clinical Excellence (NICE) rely on stated preference surveys to underpin their assessment of "quality adjusted life years", which informs whether they approve new medicines for use in the NHS. As noted in previous responses, time savings and accident benefits typically make up the large majority of benefits for a transport business case, so it is common for stated preference to be central to the assessment of value for money within established confidence ranges such as those applied in the Stonehenge report. None of these accepted applications of stated preference techniques apply anything like a "rule of 4" to reduce the per-person value of benefits, nor would it be appropriate to do so. Modern WTP survey design has a variety of tried-and-tested methods for avoiding the "hypothetical bias" described by Stonehenge Alliance ("respondents want to feel generous when they are not actually being asked to stump up the money"), and this has been comprehensively addressed in the [Comments from Deadline 3] [REP4-036].</p>

		<p>The comparison to toll roads is not appropriate: a toll involves a price per use, rather than an up-front payment for both “Use” and “non-use” values, and the M6 toll road faces “competition” from a non-tolled road.</p> <p>Issues of benchmarking the results of the CVS approach were comprehensively addressed in the Comments from Deadline 3 [REP4-036].</p>
6.2.42	<p>11.2.62</p> <p>It is notable that HE are moving away from the BCR as justification for the scheme, claiming that VfM is the important assessment and it includes non-monetary elements. HE claim here that:</p> <p><i>“the balance of non-monetised impacts in the assessment is positive so the scheme’s VfM category would be unchanged. The results therefore show that the category of VfM of the Scheme therefore has a low degree of sensitivity to the values in the CV study”</i></p> <p>Leaving aside that it is hotly disputed whether the balance of non-monetised impacts is positive, this is a non-sequitur. If the BCR of the overall scheme falls below 1 it is far more likely that it would not proceed at all; but in any case if the BCR falls it is not proven that the VfM category would remain unchanged. A negative BCR is a serious impediment to a road scheme in these times of limited funding, and HE should be wary of attempting to shrug it off.</p>	<p>The investment decision for highways England and the Department for Transport has always been made on an assessment of the Value for Money which is more comprehensive than the BCR (see response to paragraph 6.2.39 above).</p> <p>This Scheme has been assessed following WebTag and Greenbook approaches to have BCR above 1.</p>
6.2.43	<p>11.2.63 Disparity between 2001 and 2016 CV studies</p> <p>HE’s comments serve to increase the confusion and contradiction, by coming up with figures for WTP between 1998 and 2016 that are completely at odds with the overall values quoted by me, which indicate that using HE’s multipliers there is a significant disparity between the values for the two studies.</p>	<p>The fivefold disparity exists only when comparing aggregate values between the 2001 Maddison and Mourato study and the 2016 Simetrica study (note that the 2001 study was based on a 1998 survey, to avoid confusion that we are referring to two separate studies in 1998 and 2001). However, the appropriate comparison for the purposes of benchmarking are the individual-level WTP values obtained by the two studies. This is because the aggregate values obtained from the 2001 study were based on a different sampling methodology (most notably there was no road user sample in the 2001 study, and the 2001 study also surveyed foreign visitors, who were not included in the Simetrica study). If the purpose of the reviewer’s comment is to test how realistic the Simetrica WTP values are in terms of convergent validity between the two studies (i.e., are the Simetrica values considerably higher</p>

		<p>than those obtained in the previous study on the same site?), then it is appropriate to focus on the individual-level WTP values elicited through each survey, since this is the direct elicitation of the welfare value of the proposed change to the Stonehenge WHS in monetary terms. The comparison of individual-level WTP also avoids the confounding factors like the relationship between WTP and GDP and the issue of how cultural values may have changed in the meantime. While it might have been more straightforward to have compared individual-level WTP within the original report, WTP was not reported net at the individual level (i.e., including zero and negative values) at any other point in the report, so aggregate values were compared instead. This may have introduced some confusion due to the number of adjustment steps required for the comparison, but the underlying position remains that the Simetrica WTP values are realistic and robust.</p> <p>Individual-level WTP is found to be higher in the Maddison and Mourato study (£10.87 at 2017 prices based on inflation at 2.7%/ annum from 1998 WTP of £6.50) than the mean individual WTP 2016 study (£6.88). However, the Maddison and Mourato study used a 2-year payment period. When equivalised over a 3-year NPV, the annualised mean WTP in Maddison and Mourato is much closer at £6.88 to the 2016 study (£6.43).</p> <p>It is also important to note that the individual WTP value of (£14.41) reported in the Technical Appraisal Report (p204) was a gross figure which was netted against zero and negative values in the national aggregation stage. The correct individual-level mean WTP annual tax for benchmarking purposes (as reported above) is £6.88 for the general population (net at the individual level, including zero and negative values).</p>
<p>6.2.44</p>	<p>11.2.64 No consideration of options outside of the WHS</p> <p>HE acknowledge and apologise for previous statements about the tunnel portals being outside the WHS, but my comment was that this erroneous statement was being repeated (at 13.1.57) in the document to which I was responding. None of this alters the case made by Stonehenge Alliance that there was bias in the CV exercise, even if there were plausible reasons why it happened, because respondents were given precise information about the purported visual benefit of removing the road from the vicinity of Stonehenge,</p>	<p>The Contingent Valuation survey did not provide visual representations of the tunnel portals – without knowing their location to provide visual representations would have been misleading. However, respondents to the survey were told that the tunnel entrances would be within the WHS</p> <p><i>“Tunnel entrances would be constructed within the Stonehenge World Heritage site. These would not be visible from the stones but would be new visible features in the archaeological landscape, although the road would be carefully designed to reduce its impact as far as possible. Dual carriageway</i></p>

	<p>but did not have an equivalent level of knowledge about the tunnel portals, the visual impact of the road either side of the tunnel and within the WHS, or the potential negative impacts on archaeology.</p>	<p><i>would lead up to the tunnel entrances, including the short sections inside the World Heritage site.”</i></p> <p>As noted in paragraph 11.2.59 of [REP5-003], this allowed respondents to incorporate the uncertainty and potential negative impacts into their response.”</p> <p>At the time the valuation study was undertaken, it was important to ensure it would remain equally valid for various alternative alignments of the road and tunnel, to ensure results would remain valid as designs changed. The study therefore provided only limited information on the precise alignment and design aspects of the tunnel. In the final assessment of the Value for Money of the proposed scheme, however, the valuation of cultural heritage and the other monetised costs and benefits were complemented by a qualitative assessment of the impacts on heritage, as outlined in the Heritage Impact Assessment, and qualitative assessments of all other relevant impacts.</p> <p>Highways England remains confident that there is no bias in the CV exercise. Information that was not available at the time of the CV exercise was adequately built into the overall assessment of the scheme’s Value for Money in a qualitative manner via the Heritage Impact Assessment.</p>
<p>6.2.45</p>	<p>18.1.1 – 18.1.4, 28.1.1, 18.2.22 – 18.2.31</p> <p>Highways England continues not to mention or assess the in-combination (recreation) effects of c.1000 new Army dwellings and increased use of Byways 11 and 12 impacting on the SPA, despite our having raised it in our original Written Representation.</p>	<p>Please refer to paragraph 8.9.186 of Chapter 8 of the Environmental Statement [APP-046] and Section 5.3 In-Combination Effect: Recreational Disturbance section of the Statement to Inform an Appropriate Assessment (SIAA) [APP-266]. In-combination effects of recreation on stone curlew were fully considered in both the ES and SIAA. Recent and future developments were taken into account throughout the Environmental Statement (ES 15.2.18-15.2.20 [APP-053] and SIAA. In respect of the use of Byways, further clarification was provided in the HRSA Clarification Note [REP7-011] with respect to the additional provision of nesting opportunities for stone curlew following the relevant landowners' refusal for the offered enhanced fencing measures. As stated in the HRSA Clarification Note (Appendix A, paragraph 1.57) the proposed measures underline the robustness of the conclusion of no adverse effect on the integrity of the Salisbury Plain SPA in the SIAA [APP-266].</p>

		As stated within 1.4 of the HRSA Clarification Note: Stone curlew plot sift [REP7-011] the measures incorporated within the Scheme will provide net enhancement of nesting opportunities for the stone curlew population (as agreed with Natural England).
6.3	Comments on dDAMS (REP6-014)	
	Matter Raised	Highways England's Response
6.3.1	We note that not all of the changes to the revised document have been tracked since the previous dDAMS submitted at Deadline 4. For example, Section 3 in the previous dDAMS related to the "Archaeological Research Strategy"; Section 3 in the latest dDAMS relates to "The Scheme, Previous Surveys and Studies". Sections 3 and 4 appear to have been transposed, while the texts and paragraph numbering differ. This is confusing and makes commenting difficult.	The Applicant notes the Stonehenge Alliance's comment and apologises if revisions and the restructuring of the document have caused any confusion. These matters will be resolved in the next version of the dDAMS to be submitted to the Examination at deadline 8.
6.3.2	With reference to para. 2.2.3 of the latest dDAMS, last bullet point under "General Principles", we repeat that it is acknowledged that certain flint scatters are indicative of settlement sites; we submit that such flint scatters should be considered under the "precautionary principle" to be attributes of OUV.	With regard to the significance of flint scatters, please see the Applicant's Deadline 5 Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, p. 11-96, item 11.2.37] and the Applicant's deadline 7 Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 6.3.1, pp. 85-86]. In [REP5-003], item 11.2.37, the Applicant explains that the flint scatters and scattered isolated pits are not considered to be archaeology of the very highest importance, but notes that suitable mitigation is provided as part of the Scheme documentation including provision for the archaeological remains to be recorded as part of an intelligent, reflexive and iterative archaeological mitigation strategy which has been developed in consultation with HMAG and the Scientific Committee and which is set out in the dDAMS. The dDAMS is secured through Requirement 5 of Schedule 2 of the draft Development Consent Order (dDCO).

<p>6.3.3</p>	<p>Under “Detailed Principles” at para. 2.3.1, new bullet point 9 gives rise to some concern in view of the apparent difficulties in understanding the concept of OUV: who would provide the training?</p> <p>Bullet point 10 could be made clearer by re-drafting: it does not make sense at present and would be best left as in the earlier draft, even though the earlier version could not be followed given the Scheme proposals.</p>	<p>Para 2.3.1 of the updated dDAMS provided by the Applicant at Deadline 6 [REP6-013] and that submitted at Deadline 7 [REP7-019], bullet 9, notes that “All those designing or undertaking archaeological work in connection with the Scheme should [...] Ensure that all field staff involved in the mitigation programme are aware of the significance of the WHS and its OUV through provision of a Scheme-specific training programme.” This training would be provided by the Archaeological Contractor. Staff will also be made aware of the contents of the DAMS and the Site Specific Written Scheme(s) of Investigation (SSWSI(s)).</p> <p>Para 2.3.1 of the updated dDAMS provided by the Applicant at Deadline 6 [REP6-013] and that submitted at Deadline 7 [REP7-019], bullet 10, notes that “All those designing or undertaking archaeological work in connection with the Scheme should [...] Avoid and minimise harm to the integrity or authenticity of the WHS or the assets that contribute to the OUV of the WHS.” This has been changed from the earlier version, which stated “[...] Do not harm the integrity or authenticity of the WHS or the assets that contribute to the OUV of the WHS.” [REP2-038]. The Applicant has previously set out its position in relation to compliance with the World Heritage Convention, and the balancing approach that has been adopted in determining that the Convention is complied with and whether the Scheme conserves and protects the OUV of the WHS [REP2-021, Question G.1.1].</p> <p>The Applicant considers that Bullet Point 10 is sufficiently clear at present and does not need to be re-drafted.</p>
<p>6.3.4</p>	<p>With reference to the latest dDAMS, Section 6, “Approaches to Archaeological Mitigation”, we are concerned that the intention to undertake 100% sampling of ploughsoil is not stated. We support the submissions of Professor Parker Pearson on this matter.</p>	<p>With regard to sampling, please see the Applicant’s Deadline 7 Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 13.2.14, p. 161]. The dDAMS submitted at deadline 6 sets out updated proposals for ploughzone artefact sampling. Highways England acknowledges that, in some areas, a sample of up to 100% of the artefact content of the ploughsoil may be required, combined with a systematic sample to capture background distributions and transitional areas, as stated in the deadline 7 version of the dDAMS [REP7-020, paragraph 6.3.16]. This was also discussed at the issue specific hearing on 21 August 2019, as recorded in the Applicant’s written summary of oral submissions in</p>

		relation to Agenda Item 5.4 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained.
6.4	Comments on updated OEMP (REP6-012)	
	Matter Raised	Highways England's Response
6.4.1	Highways England's <i>retrospective</i> "Design Vision" (at para. 4.2.1) appears to be a generic design vision to fit any new road scheme. We submit that <u>any</u> retrospective design vision is unacceptable for a Scheme of major sensitivity, impacting on a WHS. The Design Vision ought to have been, from the outset, an integral part of the Scheme development.	The Design Vision is not a retrospective design vision. It sets out Highways England's approach to the design from the Scheme; building on the statements set out in the application Design and Access Statement [APP-295]. It has formed an integral part of the Scheme development and has led to a Scheme that has sought to minimise the impact to the WHS.
6.4.2	In para. 4.2.3 ("Purpose of the Vision"), it is said that <i>"The Scheme provides a unique opportunity for the enhancement of an internationally recognised landscape and its visitor experience, as well as that of local communities."</i> That opportunity would neither be grasped nor fulfilled by the present Scheme	Part 5 of the Case for the Scheme [APP-294] and the Design and Access Statement explain how the Scheme as designed meets the purpose of the vision through restoring the tranquillity of the WHS; re-uniting the site; reconnecting the WHS with local communities, attracting more visitors to the wider WHS, facilitating learning opportunities (see also the DAMS) and providing for landscape reconnection and habitat restoration.
6.4.3	In para. 4.2.4. Highways England suggests that <i>"The Scheme presents a 'once in a lifetime' opportunity to respond to the sensitivities and challenges of this landscape and demonstrate imaginative and exemplar design as part of a collaborative approach between the appointed contractor, stakeholders and The Authority."</i> This is the second opportunity in a lifetime (usually considered to be c.25–30 years) for a sensitive response to the challenges of an A303 road widening scheme through this WHS: the previous Scheme was taken to Public Inquiry in 2004. The present Scheme does not	It is an opportunity of a lifetime as the Government commitment to fund the Scheme is now certain compared to what was stated in 2004. The design vision, commitment and principles set out in the OEMP will lead to an exemplar design and will involve on-going engagement with stakeholders through the proposed Stakeholder Consultation Design Group set out in part 4 of the OEMP and the specific commitments to engagement (e.g. in relation to fencing) set out in the REAC tables.

	provide an exemplar design for responding to the sensitivities and challenges of such a WHS; nor has it involved the collaboration of the tens of thousands of stakeholders who have expressed outright objections to it. UNESCO's WH Committee does not support the Scheme as it currently stands.	
6.5	Additional Submission	
	Matter Raised	Highways England's Response
6.5.1	<p>Please may we ask for the following field data and information to be supplied by Highways England on the geological, hydrogeological, geotechnical and geophysical aspects and implications of continuing ground investigations.</p> <p>All drill logs, drilling data, groundwater measurements and test data from all boreholes drilled for the project, subsequent to the last release of information to us in the December 2017 Final Report from Structural Soils (Report No. 731823; Vs.3). This report was released to Stonehenge Alliance via the British Geological Survey Secure Database in March 2018 and is the last complete record that we have been given of such data by Highways England.</p> <p>All original ground investigation data (drilling records, borehole logs, geophysical logs, unpublished groundwater testing data) which support the published "Groundwater Reports". The first drafts of these reports that were made available contained little if any of the original field and supporting data; the only versions of these reports, now on the Examination website were reissued to the Inquiry on 4th June 2019 as "Tracked Changed" documents. We consider that much basic field investigation data is still not available relevant to the work reported in these documents.</p>	<p>As explained at Issue Specific Hearing 11 on 29/08/2019 the requested data consists of some 4000 pages of borehole information and raw data. The information, has not been subject to analysis but most importantly, is not required to understand and does not inform the assessment carried out in the Environmental Statement or anything else in the Application, which was based on the information set out in the Preliminary GIR [APP-273]. Submission of this data to the Examination is therefore not necessary or appropriate.</p> <p>The ES was based on the geotechnical information presented in the Preliminary Geotechnical Information Report (PGIR) which was appended to the ES [APP-273].</p> <p>Additional groundwater submissions ([AS-016] and [AS-017]) referred to the 2018 GI data and validate the findings of the ES. AS-016 (pumping text interpretative report) includes logs of the boreholes in which the tests were carried out. AS-017 (implications of 2018 GI for groundwater risk assessment) includes a summary table of high permeability zones.</p> <p>The 2018 data validates the groundwater assessment in the ES but was not the basis for the ES. Therefore, no additional groundwater data is necessary to support the ES.</p>

<p>6.5.2</p>	<p>All drilling and testing geological, geotechnical and hydrogeological data from continuing field and drilling investigations commenced in May/June this year, up to and subsequent to the announced Project Tender date of 15th July 2019.</p>	<p>This information is either incomplete or in draft format. The information, has not been subject to analysis but most importantly, is not required to understand and does not inform the assessment carried out in the Environmental Statement or anything else in the Application. Submission of this data to the Examination is therefore not necessary or appropriate.</p> <p>Please also see the Applicant's summary of case at Issue Specific Hearing 10 on 29 August 2019 which considers Dr Reeves' presentation at that hearing, which is the context of this request being made.</p> <p>The 2018 data validates the groundwater assessment in the ES but was not the basis for the ES. Therefore no additional groundwater data is necessary to support the ES.</p>
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7 Avebury Society (AS-068 and AS-069)

7.1	Comments on Deadline 4 comments (REP5-003) and additional submissions.	
	Matter Raised	Highways England's Response
7.1.1	<p>10.1.1 Erosion</p> <p>Experience has shown that exclusion of visitors at Stonehenge will encourage more visitors to Avebury. This may increase during the construction period when there may be delays on the A303 and adjoining roads.</p> <p>Management of footfall may be beyond the “scope of the scheme” but Highways England should take the cumulative and knock-on effects of its Scheme on the whole WHS into account.</p>	<p>Highways England maintain their position as stated in item 10.1.1 in REP5-003.</p> <p>The Applicant notes the Avebury Society's concern, however there is not expected to be an indirect impact on Avebury.</p> <p>As the Avebury Society state, the management of footfall and visitors at Avebury currently is beyond the scope of the Scheme. The Applicant has considered the likely significant effects of the Scheme, including cumulative effects, as set out in its Environmental Statement (see in particular Chapter 15 Cumulative Effects [APP-053]).</p>
7.1.2	<p>10.1.1</p> <p>The 2019 UNESCO WH Committee Decision may be taken as a clear warning that the WHS may lose its status if the Scheme goes ahead. This would have a direct impact on Avebury.</p>	<p>Highways England maintain their position as stated on page 11-5 of the Relevant Representations report [AS-026]. It is summarised as follows:</p> <p>The removal of the existing surface A303 from the WHS landscape will result in extensive benefits for the WHS, including significant reductions in traffic noise and significant reductions in visual intrusion. The Scheme will result in a slight beneficial effect on the authenticity and integrity of the WHS. The impact of the Scheme in terms of the inscription of the WHS is assessed in section 12.5 of the Heritage Impact Assessment (HIA) [APP-195] and concludes that the Scheme would not impact upon the continuing relevance and application of the WHS inscription criteria. There is therefore no indication of there being any risk to the site's World Heritage status, and overall the Scheme results in benefits for the WHS.</p> <p>Also see response in agenda item 3.2 in the Applicant's written summary of the oral submission from ISH8.</p>

7.1.3	<p>10.1.2</p> <p>Despite our concerns about the stances of Historic England and the National Trust, we were referring to ‘Legacy funding’ promised by Highways England as an outcome of the Scheme. There should be a commitment to ensuring that some of this funding should be received by Avebury and this assurance is currently lacking.</p>	<p>Highways England maintain their position as stated in item 35.1.3 in REP5-003, in its response to Avebury Parish Council, who raised substantially the same issue.</p>
7.1.4	<p>10.1.3</p> <p>Although Highways England may have responded to some of the recommendations of the Advisory Missions, they have not followed the most important of them: to seek a solution for the A303 that does not damage the WHS or its OUV.</p> <p>The World Heritage Committee’s Decision in 2019 makes clear that the Scheme does not meet the requirements to protect the WHS and its OUV. This was also the view of the Committee in 2018.</p>	<p>See response to item 6.3.5 in the Deadline 7 Comments on any further information requested by the ExA [REP7-021, item 6.3.5] which states that Highways England (and the Department for Culture, Media, and Sport (DCMS) in its State of Conservation Report submitted to the World Heritage Centre in February 2019) have explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the World Heritage Site and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified. See response to Written Question AL.1.29 in [REP2-024] with respect to the consideration of a longer tunnel to the west. The Scheme enhances the OUV of the WHS and overall has a slight beneficial effect on the OUV of the WHS as a whole.</p> <p>Highways England continues to work closely with heritage stakeholders and will continue to report to and engage with UNESCO, ICOMOS and the World Heritage Committee through the DCMS.</p> <p>Please also see the Applicant’s written summary of its oral submissions made at Issue Specific Hearing 8, with respect to Agenda item 3.2 in relation to the decision of the World Heritage Committee (submitted at deadline 8).</p>
7.1.5	<p>10.1.3</p> <p>The overall balancing exercise against public benefit is not set out by Highways England independently of the value for money exercise (which includes the monetary benefit of the heritage contingent valuation survey).</p>	<p>Value for money is one of the key considerations of any decision involving the use of public funds across government. It is considered in the Economic Case of the ‘Five Case’ model of decision-making recommended by Her Majesty’s Treasury (HMT) and adopted by the Department for Transport (the Department) and Highways England. Value for money is considered at a national level, this ensures that the assessment focuses on the impacts of a proposal that are ‘additional’ (lead to a net increase in overall public benefit).</p>

		<p>The assessment of value for money includes both monetised and non-monetised impacts and provides the overall assessment of public benefit.</p> <p>Ultimately the ExA and the Secretary of State will consider the planning balancing exercise for the Scheme pursuant to its obligations under section 104 of the Planning Act 2008. However, Highways England has set out its view on the matter in the Case for the Scheme [APP-295] - in particular section 7.5 which balances the benefits and impacts of the Scheme.</p>
7.1.6	<p>10.1.4</p> <p>The Scheme is clearly not compliant with the WH Convention Article 4, the Management Plan, Core Strategy Policy 59, and policy for protection of the WHS in the NSPNN. Highways England's arguments to justify its circumvention of these protective constraints are unconvincing.</p> <p>As Highways England says: <i>"The stated primary aim of the WHS Management Plan's strategy is 'to protect the Site to sustain its OUV as agreed by UNESCO, provide access and interpretation for local people and visitors, and allow its continued sustainable economic use.'"</i> This is not what Highways England proposes to do.</p> <p>Where a precedent is set to ignore protective policies in one part of a WHS, it would obviously be easier to ignore them in the other.</p>	<p>Highways England maintain their position as stated in item 10.1.4 in [REP5-003]. In summary, it explains the Applicant's position that consenting the Scheme would not put the UK in breach of its obligations under the World Heritage Convention. The Applicant has set out throughout the Scheme documentation and responses to comments, how the OUV of the WHS is to be sustained and the WHS protected.</p> <p>The Applicant also wishes to note that no scheme will be able to set a precedent for a following scheme. Under both the Town and Country Planning Act 1990 and the Planning Act 2008 regimes, each application must be considered on its own merits.</p>
7.1.7	<p>10.1.5</p> <p>We disagree. The Planning Inspectorate's acceptance of the DCO application does not mean that the application documents contained adequate information about the scheme for people to make informed judgements about it.</p>	<p>As already fully explained in item 10.1.5 of the comments on any further information requested by the ExA and received at Deadline 4 [REP5-003], the assertion that the application did not contain adequate information for people to make informed judgements about it is not accepted.</p>
7.1.8	<p>10.1.5</p> <p>We have not been invited to attend any community forum meetings. The Avebury Society is not a member of the WHS Partnership Panel. The Society is represented on the Avebury WHS Steering Committee</p>	<p>Highways England maintain their position as stated in REP5-003 and notes that its response at 10.1.5 provided contact details for it to use, should it wish to attend the Community Forum.</p>

	which is over-populated with representatives of statutory bodies and the National Trust who are supportive of the A303 Scheme.	
7.1.9	<p>10.1.6</p> <p>Again, erroneous assumptions have been made by Highways England about the visitor-profile at Avebury. The National Trust can obtain accurate visitor-profile data from visitors entering Avebury Manor (who may be supposed to conform to a predictable profile); visitors to the monuments do not pass through a ticketing gate. Even so, no serious study has been presented with the DCO application.</p>	Highways England maintain their position as stated in item 10.1.6 in REP5-003. In summary, the Applicant disagrees with the statement that visitor profile information used in preparation of submissions to the Examining Authority is inaccurate.
7.1.10	<p>10.1.6</p> <p>Given that far more people, inevitably, visit Stonehenge than Avebury at present, the two places obviously cannot be compared in terms of the present visitor-patterns and numbers. This is no indication that visitor profile and numbers would stay the same if the A303 Scheme were to be implemented. Tour groups and many others will inevitably look for easier and more economical ways of seeing the prehistoric monuments of Wiltshire.</p> <p>The DCO application and subsequent statements by Highways England display supreme disregard for the Avebury part of the WHS and its villagers who will without doubt be subject to greater visitor-pressure than at present.</p>	Highways England maintain their position as stated in items 10.1.1 and 10.1.6 in [REP5-003]. In summary, as the A303 will remain open throughout construction, and because of the different nature of visitors each site attracts, it is not anticipated that visitors and tour operators will change their tour schedule to visit Avebury rather than Stonehenge during construction, or following scheme opening and in the operational phase. It is therefore expected that the construction or operation of the Scheme will not have an indirect impact on Avebury.
7.1.11	<p>Highways England seems to attempt to escape dose criticism, generally daiming the issues raised by us are beyond their remit. The Avebury Society has attempted to draw attention to this attitude which we believe has led to bad decisions on their part.</p> <p>Highways England's paragraph on the A303 Scheme Community Forum (REP5-003, paragraph 10.1.5) provides a classic instance of this. It states that it represents sections of the local</p>	Highways England reiterates its response in [REP5-003] (10.1.1) that there is not expected to be an indirect impact on Avebury. By comparison, communities closer to the Scheme are more directly affected by traffic using the existing A303 or by rat-running traffic that seeks to avoid congestion on the road.

communities "MORE DIRECTLY AFFECTED THAN AVEBURY and other towns and villages similarly farther afield from the Scheme"! What dearer statement than this could show Highways England' s attitude towards the other part of the World Heritage Site.

8 Andrew Rhind Tutt (AS-070 and AS-071)

8.1	Additional Submissions	
	Matter Raised	Highways England's Response
8.1.1	<p>There is no "Pond" at Amesbury Abbey. The water referred by me at the hearing and shown in the video flows away from this area directly into the river Avon.</p>	<p>Please refer to Figure 2.5 of Annex 3 Blick Mead Tiered Assessment in the Groundwater Risk Assessment [APP-282] to see the location of the feature called Abbey Pond by the Applicant. The same feature is called a permanent spring-fed pool by Professor David Jacques in Figure 2.5. It is agreed that this feature flows away from this area directly into the river Avon and is the feature shown in the video submitted as AS-058 by Andrew C J Rhind-Tutt.</p>
8.1.2	<p>The Blick Mead spring was <u>not</u> "dry" in June 2019. Please see my second video entitled "Blick Mead Water Flow" which I filmed on 14th June 2019 and which is directly alongside the A303. The Inspectorate visited this area on 21st May 2019.</p> <p>The water flow shown in the video is approximately 1/2m per second and is travelling South to North across the open trench.</p>	<p>There appears to be a difference in naming of water features. The feature referred to by Highways England as Blick Mead spring and the feature called ancient spring head at Blick Mead by professor David Jacques was dry in June 2019. (For locations please refer to Figure 2.5 of Annex 3 Blick Mead Tiered Assessment in the Groundwater Risk Assessment [APP-282]), Annex 2 Water Features Survey and also in AS-062 Additional Submission accepted at the discretion of the Examining Authority - Blick Mead Spring.</p> <p>The video submitted as AS-070 by Andrew C J Rhind-Tutt appears to show an excavation which has encountered the water table, which is exactly what would be expected in a pit dug in an area where groundwater levels are near surface. It is unusual to see groundwater moving in such a small excavation but not impossible if there is an inflow and an outflow or other factors causing water movement.</p>
8.1.3	<p>The statement by Mr Damrel clearly demonstrates the total lack of understanding Highways England have regarding the water table at the Eastern end of the proposed A303 tunnel portal and points again to a fundamental flaw in the ability to produce a scheme, not knowing what the full extent of the ground conditions are or how</p>	<p>There is nothing in the statement by Highways England that demonstrates lack of understanding. Mr Damrel is pointing out a naming convention that has been used by Professor David Jacques and by Highways England. Mr Rhind-Tutt's response to the letter from Mr Jeremy Damrel concerns the locations and naming of springs in the Blick Mead area, and their flow characteristics. Names and locations used by Highways England are given in</p>

the water table could be significantly damaged should excavations commence without further thorough investigation.

the Tiered Assessment, Annex 3 to the Groundwater Risk Assessment [APP-282], with monitoring results to date presented in the report 'Blick Mead monitoring to March 2019' [AS-015].

The same Tiered Assessment and monitoring demonstrate the conceptual hydrogeological understanding of the area around Blick Mead. There will be no significant change to groundwater conditions at the eastern end of the proposed A303.

9 Barry Garwood (REP7-053)

9.1	Comments on Second Written Question responses	
	Matter Raised	Highways England's Response
9.1.1	<p><i>[Re. Applicant's response to CC.2.2]</i></p> <p>In response to WQ – CC.2.2, Highways England confirms their view that "in the context of the overall UK GHG emissions the magnitude of the increase will not have a material impact on the government meeting its carbon reduction targets".</p> <p>However, much of the argument is based on previous targets. They note that "It will therefore not be possible to update the assessment of the CO2 impact of the Scheme against the new net zero carbon target until the revised carbon budgets are published".</p> <p>There then follows an argument that the global atmosphere is a large receptor for greenhouse gas (GHG) and that, as Britain produces about 1% of global GHG, no individual scheme will make that much difference.</p> <p>Unfortunately, if everyone takes the same view, GHG emissions will continue to increase with catastrophic consequences for our climate.</p>	<p>In response to the matter raised by Mr Garwood with regard to Written Question CC.2.2, the carbon assessment in Chapter 14 of the Environmental Statement (ES) [APP-052] presents the impact of the Scheme against the UK meeting its legally binding carbon reduction targets. At the time the carbon assessment presented in Chapter 14 was undertaken, the UK's carbon reduction target was an 80% reduction of carbon emissions by 2050 compared to 1990 levels. To meet this 2050 target, a series of legally binding five-year carbon budgets, currently set though to 2032, have been laid down in Parliament and provide a carbon reduction trajectory that the UK must adhere to allow the 2050 carbon reduction target be met. Each carbon budget provides a forecast for a permissible level of carbon emissions within a five-year period. The carbon budgets allow for an increasing reduction in emissions over time to allow for the implementation of necessary policy change and improved technologies to allow for the 2050 target to be met.</p> <p>Carbon emissions from the Scheme have been tested against the five-year carbon budget period in which they arise to determine if the Scheme will have an impact on the UK meeting the 2050 target. The assessment presented in Chapter 14 concluded that the carbon impact of the Scheme would be within the carbon budget threshold and therefore not have a material impact. The updated assessment set out in the Applicant's response to the Examining Authority's First Written Question CC.1.6 [REP2-028] demonstrates the Scheme's Greenhouse Gas (GHG) impact as a proportion of total UK carbon emissions noted that it equates to 0.023% of the fourth carbon budget and 0.008% of the fifth carbon budget.</p>

		<p>The revised carbon reduction target set within the Climate Change Act 2008 (2050 Target Amendment) Order 2019[1] (the 2019 Order), amends the Climate Change Act 2008 by revising the previous 2050 carbon target (an 80% reduction of greenhouse gas (GHG) compared to 1990 levels) to a net zero carbon target by 2050. The Committee on Climate Change responsible for setting the carbon budgets have acknowledged that to meet the new target a steeper reduction trajectory will be required and have stated that they will be reviewing the carbon budgets in 2020 to account for the new 2050 target. It has therefore not been possible to assess the Scheme against revised carbon budgets.</p> <p>However, in any event the carbon assessment (which has been undertaken using a conservative, 'worst-case emissions' approach) has considered emissions from the Scheme in two separate phases, emissions during construction and emissions during operation. Construction of the Scheme is a short-term activity that will be complete by 2026. Emissions from construction therefore fall within the nearer term 3rd and 4th carbon budgets. Emissions from the operation of the Scheme will fall into the 4th, 5th and subsequent future budgets once set through to 2050. Whilst a reduction in the carbon budgets may occur in the 2020 review, the Committee on Climate Change has indicated that the trajectory will be steeper therefore it is later carbon budgets rather than near term ones which will see a greater impact.</p> <p>[1] 2019 No 1056. The Climate Change Act 2008 (2050 Target Amendment) Order 2019</p>
9.1.2	<p><i>[Re. Applicant's response to CC.2.2]</i></p> <p>Highways England is a major contributor to GHG emissions. Emissions from concrete production alone can be around a ton of Carbon Dioxide per cubic metre, with the tunnel alone requiring around 400,000 cubic metres.</p>	<p>The assessment of carbon emissions presented in Chapter 14 of the ES [APP-052] included embodied carbon emissions within materials, such as concrete, to be used to construct the Scheme. The assessment concluded that the carbon impact of the Scheme would be within the carbon budget threshold and therefore not have a material impact. The updated assessment set out in the Applicant's response to the Examining Authority's First Written Question CC.1.6 [REP2-028] demonstrates that the Scheme's GHG impact as a proportion of total UK carbon emissions in the fourth carbon budget period, i.e. when construction occurs, is 0.023%.</p>

9.1.3

[Re. Applicant's response to CC.2.2]

Then there is the increase in vehicle emissions that result from increased road capacity. Even switching to electric vehicles will have limited effect in reducing GHG emissions.

The assessment of carbon emissions presented in Chapter 14 of the ES [App-052] considers the carbon emissions impact of road users. Carbon emissions from road users have been calculated as part of the WebTag assessment process. Between 2026, the year of opening and 2032, the end year of the latest carbon budget to be set, carbon emissions from road users are estimated to increase by 16%. As stated in Chapter 14 of the ES, paragraph 14.3.7 however the uptake of lower carbon fuels, electric vehicle technology and the decarbonisation of the grid is not accounted for under the HA207/07 approach used for the carbon assessment. In practice therefore, as the measures contained in the UK Government Strategy 'Road to Zero'[1] published in 2018 are realised e.g. by 2030 between 50% and 70% of new car sales and 40% of new van sales will be ultra-low emission vehicles, and by 2040 all new car and van sales will be zero carbon vehicles. As this and decarbonisation of electricity takes affect the carbon impact associated with road users will decrease and be significantly lower than the numbers identified in the assessment, which has been undertaken using a conservative basis.

As the national grid is decarbonised and the uptake of electric vehicles increases in line with Government Policy, so the use of electric vehicles in place of combustion engine driven vehicles will contribute to meeting UK carbon reduction targets. The projected increase in Electric Vehicles will also reduce the energy requirements of fume extraction systems within the tunnel reducing operational emissions further.

Highways England are also committed to reducing the operational emissions of the road network at a strategic national network scale, as well as on an individual infrastructure project scale. Highways England are investing in renewable energy technology and feasibility studies across the network to reduce carbon emissions, including renewable energy solar farms to support the energy requirements of road tunnels, and photovoltaic noise barriers to power signage, cameras and roadside detectors. Highways England are also reducing the emissions of assets and buildings and rolling out improvements to depot efficiencies as part of the depot greening programme, including fitting solar panels and using LED task lighting. These changes will further decrease the GHG emissions of the road network as a whole (over and

		<p>above the move towards electric vehicles and away from diesel and petrol vehicles).</p> <p>^[1] https://www.gov.uk/government/news/government-launches-road-to-zero-strategy-to-lead-the-world-in-zero-emission-vehicle-technology</p>
9.1.4	<p><i>[Re. Applicant's response to CC.2.2]</i></p> <p>Instead of leaving the problem for others, the Government, including Highways England, should be setting out how the targets can be met, not assuming that it is somebody else's problem, nor transferring the source of emissions elsewhere.</p>	<p>The Government's Clean Air Strategy (https://www.gov.uk/government/publications/clean-air-strategy-2019/clean-air-strategy-2019-executive-summary) contains wide ranging measures that are aimed at securing ambitious long-term targets for improving air quality.</p> <p>The Appraisal set out in the Environmental Statement indicates that local air quality in the vicinity of the scheme is already well below relevant air quality standards and objectives and that this position does not change as a result of the Scheme. In relation to greenhouse gas emissions, please see the references provided above to the assessment which has been undertaken and refer to Chapter 14 of the ES [APP-052] and to the updated assessment in CC.2.4. The approach followed is in line with the requirements of the NNNPS. There is no legal or policy basis upon which the ExA should entertain any challenge to adopted Government Policy in respect of climate change considerations.</p>
9.1.5	<p><i>[Re. Applicant's response to CC.2.4]</i></p> <p>In response to WQ – CC.2.4, Highways England have produced a table of projected temperature changes, based on UK Climate Projections 2018 ...</p> <p><i>(see response to CC.2.4, Table 1: Projected changes to temperature variables (°C), as per UKCP09 and UKCP18 relative to 1961 – 1990 baseline. [REP6-025])</i></p> <p>... The first thing to note here is that the Government targets have moved on from here and are now in accordance with the IPCC report (2018), which seeks to reduce Carbon emissions to net zero by 2050 and limit global mean temperature rise to around 1.5 °C above the pre-industrial era of 1850 to 1900.</p>	<p>The purpose of the climate change risk assessment presented in Chapter 14 of the ES [APP-052] is to identify the resilience of the Scheme to future climate change impacts.</p> <p>This assessment has been undertaken in line with industry guidance published by the Institute of Environmental Management and Assessment (IEMA), Environmental Impact Assessment Guide to Climate Change Resilience and Adaption 2015[1].</p> <p>IEMA guidance recommends using existing Met Office observational data and Met Office future Climate Change Projection data to identify historic, current and future baseline conditions. The IPCC baseline is not considered applicable for use in this assessment. The IPCC baseline considers climate change over the last century on a global scale. The purpose of the EIA is to assess the future impact of climate change on the proposed Scheme.</p>

The second thing to note is that Highways England's figures are above a baseline of 1961 to 1990, around a century after the IPCC baseline. As such, at least half a degree should be added to these figures when comparing them with the IPCC equivalent.

The figures indicate a mean average daily temperature rise of around 2.3 °C by 2050 and 4.1 °C by 2080. Given the later baseline, this equates to around 3 °C above pre-industrial levels by 2050 and nearly 5 °C by 2080.

The summer figures are even worse, with a mean daily increase of around 3 °C by 2050 and 5.6 °C by 2080. Again with at least half a degree to be added before comparing with the IPCC report.

Chapter 14 presents the results of the climate change risk assessment undertaken using Met Office climate projection data published in 2009 (UKCP09). UKCP09 was the latest set of climate projection data available at the time the assessment was undertaken.

The Applicant's response to Written Question CC.2.4 presents an updated assessment of the resilience of the Scheme to climate change using the latest set of climate change projection data published in 2018 (UKCP18). CC.2.4 also presents a comparison between the climate change impacts identified using UKCP09 and UKCP18. In this comparison, the Representative Concentration Pathway (RCP) 8.5 scenario from UKCP18 was used, which is the scenario most similar to the UKCP09 'High Emissions' scenario that was used in the original assessment.

Therefore, the approach taken reflects the purpose required, i.e. the resilience of the proposed Scheme, and follows recognised practice as published by IEMA for the purposes of an ES, therefore there should be no adjustment as suggested. We trust that this clarifies and provides full understanding of what has been assessed and presented and this addresses the misunderstanding and misapplication in the points raised.

10 Paul Garwood (REP7-054)

10.1	Comments on dDAMS (REP6-014)	
	Matter Raised	Highways England's Response
10.1.1	<p>2. Comments on dDAMS Section 4: Archaeological Research Agenda (dDAMS, p.33-56)</p> <p>The dDAMS is an intrinsically flawed document with respect both to the protection (and enhancement) of the OUV of the Stonehenge WHS area and current research agendas in British prehistoric archaeology. It lacks a comprehensive assessment of what the OUV amounts to, and therefore lacks a systematic assessment of the primary issues that the dDAMS should address to protect this. It also lacks a sound assessment of current research agendas in prehistoric archaeology at any scale (Stonehenge WHS landscape, regional or national) and for any period (e.g. Mesolithic, Neolithic, Bronze Age).</p> <p>These flaws are evident in Section 4 of the dDAMS, which supposedly defines archaeological research criteria for justifying particular 'mitigation' decisions (e.g. in terms of field method). As a consequence, all research-related methodological arguments in the document are partial, selective and/or weakly informed. The flaws are thus pervasive and, should the programme of work proposed be implemented, the outcomes would be highly damaging to the Stonehenge WHS. In this context, three aspects of the strategy deserve specific comment.</p>	<p>As set out in item 40.1.1 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] the Applicant refutes that the Draft Detailed Archaeological Mitigation Strategy (DAMS) is a flawed document. We also note that various submissions with respect to the Research Agenda were made at ISH8 and the Applicant's response in that respect is set out in the written summary of oral submissions made at that hearing, submitted at deadline 8, in particular Agenda Item 5.1(ii). The response set out there is also relevant to these submissions from Dr Garwood.</p> <p>It is worth making clear at the outset, that the Archaeological Research Agenda (ARA) set out at section 4 of the DAMS considers the archaeological evidence identified during the evaluation programme and known from other surveys in the area, against the themes and research questions set out in relevant published research frameworks. These include, but are not limited to, the Stonehenge and Avebury Archaeological Research Framework (SAARF), the South West Archaeological Research Framework (SWARF), and selected period-specific research agendas. As part of the DAMS, the ARA has been developed in consultation with HMAG and the Scientific Committee, who were invited to contribute research themes and questions, and those identified themes and questions will inform the final scope of work in each area through SSWSIs to be developed in consultation with heritage stakeholders and approved by Wiltshire Council (in consultation with Historic England) (as provided for in the DAMS). The Applicant therefore disagrees with the criticism from Dr Garwood with respect to the ARA.</p>

In response to the claim that the DAMS “*lacks a comprehensive assessment of what the OUV amounts to*”, the Applicant has previously refuted that the application has not engaged with the WHS as a whole, its landscape, or the fundamental spatial and visual aspects of the landscapes and monuments and sites within it (for example [REP5-003; paragraphs 34.1.6; 34.1.12; 34.1.35 and 34.1.36]). The application, and in particular the Heritage Impact Assessment [APP-195], takes these aspects fully into account in a comprehensive and detailed assessment of the impacts on the Attributes that convey the OUV of the WHS, its Integrity and Authenticity. The purpose of the draft DAMS [DAMS Submitted at deadline 8] is not to assess these. It is the purpose of the archaeological mitigation strategy to propose the archaeological mitigation works that are required to mitigate the impacts of the Scheme on the archaeological resource within the Scheme’s order limits – both preservation in situ and preservation by record and the particular research themes and questions that would be most directly relevant to these archaeological resources.

In response to the DAMS “*lacks a sound assessment of current research agendas*”, the Applicant has utilised the most relevant research themes and questions based on the results of the archaeological evaluations and has tailored these to be Scheme specific. It is not the purpose of the draft DAMS [DAMS submitted at deadline 8] to write a new research framework for the whole WHS. The research themes and questions have been refined following extensive consultation with Wiltshire Council, Historic England and members of HMAG.

With regards to the comment that ‘*should the programme of work proposed be implemented, the outcomes would be highly damaging to the Stonehenge WHS*’, the Applicant has previously responded to such claims in its Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, item 34.1.35] and in its Comments on any further information requested by the Examining

		<p>Authority and received at Deadline 5 and 6 [REP7-021, item 6.3.5]. The Scheme has been designed throughout in full recognition of the site's WHS status. The design process has involved extensive consideration of heritage issues, which have influenced the design of the Scheme throughout the development of the DCO design. Heritage partners have attended and input to design team workshops, making sure that the status of the WHS is fully recognised by the integrated, collaborative Project Team, alongside the WHS's economic value to the surrounding area. The Scheme seeks to avoid and minimise adverse impacts on archaeological remains, the Attributes that convey the Outstanding Universal Value (OUV) of the WHS, its Integrity and Authenticity, wherever possible, and is assessed to have a Slight Beneficial effect on the OUV of the WHS as a whole and to sustain the OUV of the WHS.</p>
10.1.2	<p>2.1. OUV of the Stonehenge WHS: landscape setting and visual and spatial relationships</p> <p>2.1.1. OUV attributes</p> <p>At no point does the dDAMS recognize, evaluate or address the three WHS OUV attributes concerned with landscape setting or spatial and visual relationships, despite the fact that these are intrinsic to our understanding and public appreciation of the WHS, and the unique character (at a global scale) of the Neolithic and Bronze Age landscape (Simmonds & Thomas 2015, 32; see sections 2.3.15 to 2.3.19 of this document for detailed accounts of the archaeological and cultural heritage significance of these attributes):</p> <ul style="list-style-type: none"> • Attribute 3: The siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to the landscape. • Attribute 5: The siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to each other. 	<p>Please see response to paragraph 10.1.1 above regarding the purpose of the draft DAMS (to be submitted at deadline 8).</p> <p>As set out in item 40.1.1 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] the Applicant has previously refuted that the application has not engaged with the WHS as a whole, its landscape, or the fundamental spatial and visual aspects of the landscapes and monuments and sites within it (for example [REP5-003; paragraphs 34.1.6; 34.1.12; 34.1.35 and 34.1.36]). The application, and in particular the HIA [APP-195], takes these aspects fully into account in a comprehensive and detailed assessment of the impacts on the Attributes that convey the OUV of the WHS, its Integrity and Authenticity. The purpose of the draft DAMS (update submitted at deadline 8) is not to assess these. It is the purpose of the archaeological mitigation strategy to propose the archaeological mitigation works that are required to mitigate the impacts of the Scheme on the archaeological resource within the Scheme's order limits – both preservation in situ and preservation by record and the particular research</p>

<ul style="list-style-type: none"> Attribute 6: The disposition, physical remains and settings of the key Neolithic and Bronze Age funerary, ceremonial and other monuments and sites of the period, which together form a landscape without parallel. <p>These attributes are not a matter of incidental ‘setting’ but are absolutely fundamental to the entire archaeological and cultural heritage character of the WHS, and for the Neolithic and Early Bronze Age are integral to any understanding and appreciation of both monuments and landscape.</p> <p>The dDAMS makes no attempt whatsoever to prevent damage to these attributes, as a consequence of construction of a 40-50 m wide cutting across 1.1 km of the WHS, the visual and physical impacts of which will be extremely severe and irreversible (see UNESCO 2019, 24-5). Moreover, there is no attempt to address these issues in relation to the effects that the huge ‘Longbarrow Junction’ will have on the western part of the WHS, the Winterbourne Stoke Crossroads round barrow funerary complex, or the landscape setting of monuments more widely in this area.</p>	<p>themes and questions that would be most directly relevant to these archaeological resources.</p> <p>The preferred route was carefully chosen to avoid known archaeological remains. A comprehensive programme of archaeological evaluation surveys covering the entire red line boundary of the scheme, has informed the Scheme being designed in a way that has limited physical archaeological impacts where this is practicable. The Scheme avoids known funerary and ceremonial monuments and has been designed to minimise landtake and the loss of archaeological remains within the WHS. The loss of archaeological remains has been taken into account in arriving at the assessment of harm to the attributes of OUV. A comprehensive programme of archaeological excavation and recording is proposed in the draft DAMS.</p> <p>The Scheme design does attempt to prevent damage to the Attributes of OUV mentioned with regard to setting, spatial, visual and landscape relationships, as indicated in the Applicant’s previous response to Dr Garwood in its Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, 34.1.35] including the Winterbourne Stoke Crossroads round barrow funerary complex, or the landscape setting of monuments more widely in the western approaches.</p> <p>See response to 6.4.30 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which explains that “The long barrows within the AG12 Winterbourne Stoke Crossroads Barrows and the AG13 Diamond Group are all outside the Scheme order limits and will be preserved in situ during Scheme construction (please see the Detailed Archaeological Mitigation Strategy (DAMS) submitted at Deadline 2 of this Examination [REP2-038], Appendix D, Action Area 27.3 for the AG12 Winterbourne Stoke Crossroads Long Barrow).”</p>
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10.1.3

The dDAMS fails completely to address the issues raised by the Consortium of Archaeologists and other speakers during the A303 Scheme Cultural Heritage hearings (Salisbury, June 5-6, 2019) with respect to visual, spatial and landscape impacts, notably two particular of exceptional national and international significance:

2.1.2. Early Neolithic long barrow concentration

The greatest concentration of Early Neolithic long barrows in Britain, in the western part of the WHS clustered around the head of a dry valley (described by Prof. Parker Pearson: Parker Pearson 2019, cf. Roberts et al. 2018), will be bisected by the proposed road cutting. The scheme will therefore impact directly on the landscape setting and on the visual and spatial relationships of this group of monuments. The exceptional character of the Stonehenge landscape, already apparent in the Early Neolithic, will thus be irreversibly damaged if the road cutting takes place.

2.1.3. Early Bronze Age sacred and funerary landscape

The integrated Early Bronze Age sacred and funerary landscape, with large linear barrow cemeteries articulated around Stonehenge and spatially and visually inter-referencing one another, is unique at both national and international scales (described by Paul Garwood; cf. Garwood 2019a, 2019b; cf. Garwood 2007, 42-5; Darvill (ed.) 2005, 61-6, map I; Pollard et al. 2017, 290-92). The exceptional preservation of both Stonehenge, and the round barrows of this period, makes this by far the most visually appreciable of all the distinct phases of ceremonial landscape development at Stonehenge. The road cutting would slice through the south-west quadrant of this

Please see response to paragraph 10.1.1 above regarding the purpose of the draft DAMS (to be submitted at deadline 8).

See response to LV 2.1 in Highways England's response to the Examiners' Second Written Questions [REP6-030] (parts (iii) and (iv)). In summary, these matters were considered in detail in the Heritage Impact Assessment (HIA) [APP-195] and are also addressed in Highways England's comments on any further information submitted at deadline 4 [regarding long barrow concentration: REP5-003, items 34.1.12; 34.1.16(g); 34.1.24; 34.1.29; on the sacred and funerary landscape: REP5-003, items 34.1.12; 34.1.6; 34.1.12; 34.1.16(e); 34.1.24; 34.1.35; 34.1.36].

	<p>structured landscape, directly impacting on the immediate setting of the best- preserved Early Bronze Age funerary complex in northwest Europe, Winterbourne Stoke Crossroads barrow group, and on views between this group and the other great barrow cemeteries to the south of Stonehenge (the Normanton Down, Lake and Wilsford groups). The proposed scheme would seriously damage the Early Bronze Age landscape and thus seriously compromise the WHS OUV attributes identified above (cf. UNESCO 2019, 204).</p>	
10.1.4	<p>2.2. Research agendas and priorities: general points</p> <p>The dDAMS Archaeological Research Agenda identifies a number of research questions as the basis for: (a) assessment of what is or is not important about the sites and areas impacted by the road scheme; (b) assessment of the results of evaluation work along the route; (c) prioritization of sites and areas for investigation, and; (d) identification of methods and techniques to apply in advance of and during road scheme works. Even cursory examination of these ‘questions’, however, reveals how narrow and weakly informed they are. They are based primarily on just one research document: the Research Framework for the Stonehenge, Avebury and Associated Sites World Heritage Site (Leivers & Powell 2016). Whilst this is an important addition to the current literature relating to research agendas and priorities in this landscape area, it is inevitably short and selective of wider research issues in British prehistory. Moreover, while this work emphasises (ibid. 8, 10) that both of the previous research strategy/review documents relating to the Stonehenge landscape (Darvill ed. 2005; Darvill 2013) are still active, the research</p>	<p>See response to item 40.1.1 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which states that the Applicant refutes that the DAMS ‘<i>is based on a weak research strategy that displays limited consideration of current national and regional research frameworks in British prehistoric archaeology, both in general terms and with respect to period-specific and Stonehenge landscape-specific research agendas</i>’.</p> <p>The draft DAMS (submitted at deadline 8) states at paragraphs . 4.1.5-4.1.6: ‘<i>In order to allow ready comparison with other work in the area, both the Research Themes and Questions have been modelled on - and are intended to contribute to and expand from - those given in the Research Framework for the Stonehenge and Avebury and Associated Sites WHS (‘SAARF’, Leivers and Powell 2016), the South West Archaeological Research Framework (SWARF, Webster 2008) and other relevant period based and specialist agendas... The themes adopted for investigations ahead of earlier proposals to upgrade the A303 are also considered (Leivers and Moore 2008).</i>’</p> <p>The SAARF is focussed on the Stonehenge, Avebury and Associated Sites WHS and therefore is the most relevant and up-to-date archaeological research framework to tie the DAMS into. The SAARF</p>

	<p>questions identified in these are not addressed anywhere in the dDAMS.</p>	<p>references many national and regional research frameworks in British prehistoric archaeology both in general terms and with respect to period-specific and Stonehenge landscape-specific research agendas. Its author, Dr Matt Leivers, has inputted to and thoroughly reviewed Section 4 of the draft DAMS as submitted at Deadline 6 [REP6-013], with further revisions at Deadline 7 [REP7-019] and as submitted at deadline 8.</p> <p>Within the research agenda presented in the dDAMS, for each period, a brief resource assessment has been prepared, summarising the known remains within each route segment, both within and without the WHS. This informs the initial range of applicable research questions – and the selection of appropriate investigative techniques – which will be applied in the course of archaeological mitigation works [DAMS submitted at deadline 8, Section 4, Archaeological Research Agenda]. The dDAMS then sets out specific SAARF research themes and period-specific research questions relevant to each area [DAMS submitted at deadline 8, Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas].</p>
<p>10.1.5</p>	<p>(2.2. - cont.)</p> <p>Even the current Framework document is drawn upon only selectively for the purposes of the dDAMS. For example, in the case of Mesolithic research priorities, the dDAMS identifies three target questions while ignoring the other three without explanation (cf. Leivers & Powell 2016, 14-15) (see section 2.3.1 below). In the case of Neolithic research questions, again the dDAMS picks out just four from the framework and ignores the other 19 (cf. Leivers & Powell 2016, 15-19), including C2 concerning the significance of flint scatter and ploughzone evidence (see section 4.1 below). The Framework document is notably thin and extremely limited with respect to current research issues in Beaker and Early Bronze Age studies (ibid., 18-19), focusing on just two and avoiding mention, for example, of J3 concerning</p>	<p>See responses to paragraphs 10.1.3 and 10.1.4 above.</p> <p>As stated in para. 4.1.2 of the DAMS as submitted at deadline 8, <i>'the research themes and questions proposed... will be reviewed and updated during preparation of SSWSIs, during fieldwork and during preparation of the post-excavation assessment report.'</i> The ARA is therefore not static and will be further developed throughout the full life-cycle of the archaeological mitigation works and subsequent publication phase.</p>

	<p>spatial relationships of monuments and other sites. Indeed, as mentioned above, the dDAMS fails to treat the Stonehenge WHS as a landscape that has coherence and integrity as a whole (as the OUV attributes set out), and thus avoids addressing this intrinsic condition of the evidence in both research agenda and methodological statements.</p>	
10.1.6	<p>(2.2. - cont.)</p> <p>At a wider research scale, the dDAMS is impoverished. It pays no attention to the most recent national prehistoric archaeology research strategy (Historic England (English Heritage) 2010). This document identifies six ‘critical priorities’ for current and future research, which include: Critical Priority 1: Integrated approaches to prehistoric landscapes (see sections 2.1.2 - 2.1.3 above); Critical Priority 3: Understanding ‘sites without structures’ (see sections 2.3.1 – 2.1.4 below). The dDAMS also makes little or no use of period-specific research agenda/review documents either at a national scale, such as those for the Mesolithic (Blinkhorn & Milner 2014) and Bronze Age (Last 2008), or at regional and landscape scales (e.g. Pollard & Healy (ed.) 2007; Pollard et al. 2017; cf. Bradley 2014). It is apparent, therefore, that the ‘research questions’ used as the basis for defining dDAMS research priorities and thus methods are far too limited, narrow and selective to be convincing.</p>	<p>See responses to paragraphs 10.1.4 and 10.1.5.</p>
10.1.7	<p>2.3. Period-specific research questions</p> <p>The dDAMS period-specific research questions are problematic both generally and with respect to the evaluations made, which are at odds with other assessments of the evidence and its significance. An extremely worrying aspect of the Scheme has been the lack of transparency with regard to the process for determining ‘significance’ and ‘impact’, which has been</p>	<p>Assessments of the significance of heritage assets, and assessments of the anticipated impacts and effects of the Scheme, are set out in the Cultural Heritage Chapter of the ES [APP-044], the Heritage Impact Assessment [APP-198] and the Setting Assessment [APP-218]. These have been written in accordance with the Environmental Scoping Report and the HIA Scoping Report which was accepted as appropriate by HMAG, and also noting that the ICOMOS Mission 2018 also accepted as</p>

	<p>undertaken by Highways England with apparently minimal critical attention or oversight from any independent body. A few examples of contentious and unconvincing assessments of significance and potential are discussed below.</p>	<p>appropriate the HIA Scoping Report. The Applicant considers that these have been carried out accurately and with a full appreciation of the significance of heritage assets and the importance of the WHS and its OUV.</p> <p>The draft DAMS (submitted at deadline 8) recognises at para 1.2.2 that: ‘The Scheme passes through a landscape of high archaeological significance, both inside and outside the WHS. Accordingly, the intention of the Strategy is to apply the highest practicable standards of mitigation, employing innovative approaches to address a question-based research strategy that places the significance of the archaeological resource at the centre of decision-making both at design and implementation phases.’</p> <p>See response to item 40.1.1 (4ii) in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which states that the archaeological mitigation works will be monitored by Wiltshire Council, Historic England and for sites within the WHS, HMAG ‘to ensure the timely provision of on-site advice to the fieldwork team’ [DAMS submitted at deadline 8; para. 8.1.5]. Decisions regarding the significance of the remains and the sampling of those remains will be undertaken as part of these consultation meetings.</p>
<p>10.1.8</p>	<p>2.3.1. Mesolithic period research questions (dDAMS 4.3.12-16, p.38-39):</p> <p>Suggestions that the Scheme cannot contribute to an understanding of Mesolithic environments (B4), or cultural change over time (B6), are compromised by inadequate sampling and scientific analysis of ‘natural’ features in the evaluation fieldwork. Similarly, the argument that the Scheme has only limited potential for ‘better understanding the nature of Mesolithic activity’ (B5) is based on a limited appreciation of Mesolithic societies, material culture, and the potential of evidence in ploughzone and natural depositional contexts. The great research significance of</p>	<p>The potential of the Scheme for addressing research themes and questions related to the Mesolithic period is not dismissed: relevant priorities for research are identified [DAMS submitted at deadline 8, Section 4.4, Mesolithic], with reference to the evidence recovered during the archaeological evaluations. Appendix D of the dDAMS submitted at deadline 8 details the relevant archaeological baseline, survey results and rationale for mitigation for each of the identified mitigation areas. For those areas where archaeological investigation and recording is proposed, relevant research themes and period-based questions are indicated, as identified in consultation with specialists, within the Stonehenge and Avebury Archaeological Research Framework (SAARF) Agenda and Research Strategy (Leivers and Powell, 2016), the South</p>

Mesolithic material in these kinds of settings is clearly recognised in the most recent national Mesolithic research framework (Blinkhorn & Milner 2014: Strategy 2; Research themes T2.1–T2.3, T2.5, T2.8–10, T3.5, T3.9, T3.10, T3.14, T3.15, T3.17), yet the potential of the Scheme for addressing research themes and question identified in this document are largely dismissed (dDAMS 4.3.13-16).

The rationales for judging the potential research significance of Mesolithic evidence in this way are exceptionally weak. In particular, the dDAMS betrays a minimal understanding of the extensive character of Mesolithic hunter---forager inhabitation and activity, which by its very nature tends to be highly dispersed, low density and temporally episodic. As recent work in the Stonehenge landscape demonstrates (e.g. De Smedt et al. 2018, and results of the same project in 2018 led by the co-authors), much of the evidence occurs in ‘natural features’, either in situ or redeposited in ‘sediment traps’, and in the ploughsoil. At the same time, the Stonehenge Early Mesolithic landscape is exceptional at both British and northwest European scales because of the presence of large dug features, the ‘post pits’ near Stonehenge and the large pit excavated in 2017 (ibid.). In this light, all Mesolithic evidence is highly significant in research terms (e.g. in relation to landscape re-inhabitation after the last glaciation, occupation and land use relating to the unique early Mesolithic pit features, the major Blick Mead occupation site, and the Mesolithic-Neolithic transition).

The dDAMS takes no account of these facts, nor the points made with respect to this evidence during the Cultural Heritage hearings. Moreover, the low levels of sampling of topsoil and natural features such as channels, solution hollows and tree throws proposed in the dDAMS (see sections 4.3 and 4.4 below) are completely inadequate for recovering this evidence

West Archaeological Research Framework (SWARF) and relevant period or specialist agendas.

The version of the dDAMS submitted at deadline 8 makes reference to the Mesolithic Research and Conservation Framework (Blinkhorn & Milner 2013) [DAMS submitted at deadline 8 paras. 4.4.13 – 16].

Where relevant, the draft DAMS summarises the results of ploughsoil artefact sampling to date [DAMS submitted at deadline 8, Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas].

Sampling for the recovery of Mesolithic microliths is addressed in the dDAMS sections on Ploughzone Artefact Collection [DAMS submitted at deadline 8, paras. 5.3.29 – 36] and the Artefact Recovery Strategy [DAMS submitted at deadline 8, para. 6.3.28 – 34].

Highways England will be sampling natural features and tree throws [DAMS submitted at deadline 8, Excavation Sampling Strategy, para. 6.3.49 – 51], solution hollows and palaeochannels which can act as sediment traps, and geoarchaeological sequences and the ploughsoil [DAMS submitted at deadline 8, Section 6.7 Strategy for Geo-archaeological Investigation]. This approach to sampling natural features has been revised in the updated dDAMS following consultation with HMAG.

With regard to the concept of 100% sampling, please see Highways England’s previous response to Mark Bush for Consortium of Archaeologists in Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003, para. 34.1.17 & 34.1.32] and Highways England’s response as recorded in its written summary of oral submissions made at ISH2 in relation to agenda items 7 (i) and (ii) [REP4-030] regarding the developing sampling strategy for the ploughzone artefact scatters as set-out in the draft DAMS submitted at Deadline 4 [REP4-024]. This was also discussed at the issue specific hearing on 21

	<p>comprehensively. The only research-coherent investigative strategy that would fully take account of these conditions of the Mesolithic evidence and its research potential is 100% sampling of the ploughzone and all natural features and deposits containing cultural material in the areas that the A303 roadworks would destroy.</p>	<p>August 2019, as recorded in the Applicant's written summary of oral submissions in relation to Agenda Item 5.4 (submitted at Deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained. As noted in ISH8, the deadline 8 DAMS proposes at paragraph 6.3.16 that a representative sample will be identified for further ploughzone sampling, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. In some areas, a sample of up to 100% of the artefact content of the ploughsoil may be necessary, combined with a systematic sample to capture background distributions and transitional areas. The strategy will adopt a reflexive approach such that the sample size may be increased locally in response to the results of the systematic sampling.</p>
10.1.9	<p>2.3.2. Neolithic period research questions (dDAMS 4.4.25-26; p.42-44):</p> <p>The dDAMS recognizes some research potential with respect to Neolithic occupation of the landscape, although in 'a limited fashion' (C1) and with limited expectations based on the evaluation work (C2, C3), while making no mention of the significance of the ploughzone evidence highlighted in C2. As with the Mesolithic questions, assessments of potential and significance are based on a mis-appreciation of the nature of Neolithic settlement evidence (often extensive, dispersed, and relating to transient and episodic settlement activities) and thus its potential: exactly the same observations apply as in Section 2.3.1. It is not possible to gain an informed understanding of Neolithic landscape inhabitation in space or time without highly intensive, preferably 100%, investigation of the ploughzone and all sub-surface features, both anthropogenic and natural.</p> <p>As discussed in Section 2.1.2, the exceptional spatial and visual significance of the group of Early Neolithic long barrows in the western part of the WHS is also completely ignored in the</p>	<p>As noted in the response to paragraph 10.1.8 above, the dDAMS (submitted at deadline 8) has been updated in terms of Research Agendas and also the sampling of the ploughzone and subsurface features. With regard to SAARF questions C1, C2 and C3, the text has been expanded [DAMS submitted at deadline 8, para. 4.5.24].</p> <p>As noted in the response to paragraph 10.1.8 above, the revised dDAMS contains strategies for Ploughzone Artefact Collection [DAMS submitted at deadline 8, paras. 5.3.29 – 31] and Artefact Recovery [DAMS submitted at deadline 8, para. 6.3.28 – 35], and both anthropogenic and natural features will be investigated [DAMS submitted at deadline 8, Excavation Sampling Strategy, para. 6.3.36 – 51]; DAMS submitted at deadline 8, Section 6.7 Strategy for Geo-archaeological Investigation].</p> <p>Regarding the appreciation of evidence for Neolithic activity, please see the Applicant's previous response regarding the significance of ploughzone artefact scatters of Neolithic or Early Bronze Age date, isolated and discrete archaeological features in Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, item 6.3.1; 40.1.4] and Comments on any further information</p>

	<p>dDAMS. The presence of evidence for late Mesolithic and Neolithic activity throughout this area, which would be cut through by the proposed road, in this context becomes even greater.</p>	<p>requested by the ExA and received at Deadline 4 [REP5-003, para. 34.1.4].</p> <p>With regard to the spatial and visual impact of the Scheme and impacts on the setting of heritage assets including the concentration early Neolithic longbarrows around the Wilsford Dry Valley, please see response to LV 2.1 (iii) in Highways England's response to the Examiners Second Written Questions [REP6-030].</p>
10.1.10	<p>2.3.3. Beaker and Early Bronze Age research questions (dDAMS 4.5.17-21; p.46--47):</p> <p>Although the dDAMS notes the potential for evidence from both subsurface cut features and the ploughzone to contribute to research questions concerning Beaker and Early Bronze Age settlement, it fails to relate this evidence to the identification of the most extensive area of Beaker-related occupation known in Britain and northwest Europe (as described by Prof Parker Pearson at the Cultural Heritage hearings; cf. Pollard et al. 2017, 29092, fig.18.8a). This settlement zone, running roughly north-south on the high ground to the west of - and overlooking - Stonehenge, would be cut through by the road scheme. As Prof. Parker Pearson notes, settlement evidence in this period often only survives in ploughzone contexts, analysis of which suggests minimal lateral movement where the terrain is relatively flat or undulating.</p> <p>There is considerable potential, therefore, for investigating occupation at the level of activity areas such as houses, middens, lithic working floors, etc. This would require 100% sampling in order to be able to contextualize areas of activity (and their interpretative significance) in a systematic and coherent manner.</p> <p>As discussed above, the dDAMS is altogether deficient in its complete lack of consideration of the character and significance of</p>	<p>As stated in Highways England's Comments on any further information submitted at deadline 4, [REP5-003, paras 34.1.2, 34.1.3 and 34.1.5], "The suggestion of a 'large settlement' is not demonstrated by the evidence from the evaluation and any such settlement lies outside the Scheme boundary." This is further detailed in the Applicant's Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 6.3.1] and Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003, para. 11.2.35; 34.1.2; 34.1.3; 34.1.5].</p> <p>The Applicant's Comments on Written Representations at Deadline 3 [REP3-013, para. 12.3.125] notes that the Late Bronze Age settlement was archaeologically excavated in advance of the construction of the present roundabout in 1967 (Vatcher and Vatcher, 1968). The excavation revealed four circular features thought to be Late Bronze Age huts in the area of the roundabout and a number of pits south of the A303 [APP-195, p.451]. Archaeological evaluation on the line of the realigned A360 northwest of the existing Longbarrow roundabout identified Bronze Age features suggesting activity on the periphery of a more densely occupied area to the east [REP1-042, 043]. The Scheme design therefore avoids this Late Bronze Age settlement.</p> <p>With regard to Professor Parker Pearson's evidence, please see the Applicant's Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 40.1.2].</p>

the Early Bronze Age sacred and funerary landscape (section 2.1.3). The dDAMS is based on evaluations of the impact of the Scheme at a 'heritage asset' (i.e. 'monument' or 'site') level, and so fails completely to conceptualize or evaluate the cultural heritage resource in areal or visual terms. The consequences for understanding prehistoric settlement are seriously damaging, and inconsistent with research priorities in current prehistoric archaeology. The implications for informed and coherent evaluation of the scheme's impact on the cosmographically structured ceremonial landscapes of the Late Neolithic and Early Bronze Age (in which the spatial and visual relationships among monuments were fundamental to their experiential qualities and meanings, and in which 'empty spaces' were as significant as monumentalized locales) are even more profound. The complete failure of both the Heritage Impact Assessment (Highways England 2018) and the dDAMS to address these themes in research terms, or with respect to the WHS OUV attributes, fundamentally undermines the credibility of both documents.

With regard to sampling, please see the Applicant's deadline 7 Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 13.2.14, p. 161]. Highways England acknowledges that, in some areas, a sample of up to 100% of the artefact content of the ploughsoil may be required, combined with a systematic sample to capture background distributions and transitional areas. Please see the Applicant's Deadline 5 Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, p. 11-96, item 11.2.26, pp. 11-79 to 11-81 & item 11.2.32, pp. 11-90 to 11.91], and the Applicant's written summary of oral submissions in relation to Agenda Item 5.4 from the issue specific hearing on 21 August 2019 (submitted at Deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained.

As noted in response to paragraph 10.1.8 above, the revised dDAMS contains strategies for Ploughzone Artefact Collection [DAMS submitted at deadline 8, paras. 5.3.29 – 31] and Artefact Recovery [DAMS submitted at deadline 8, para. 6.3.28 – 35], and both anthropogenic and natural features will be investigated [DAMS submitted at deadline 8, Excavation Sampling Strategy, para. 6.3.36 – 51; DAMS submitted at deadline 8, Section 6.7 Strategy for Geo-archaeological Investigation].

Regarding the anticipated types of Bronze Age features present, there is no evidence to suggest in situ settlement deposits ('houses, middens, lithic working floors, etc.') – however, the dDAMS includes sampling strategies for discrete features [DAMS submitted at deadline 8, para. 6.3.42], buried ground surfaces, floor surfaces, hearths [DAMS submitted at deadline 8, para. 6.3.43], structured deposits [DAMS submitted at deadline 8, para. 6.3.44], structures [DAMS submitted at deadline 8 paras. 6.3.45 – 47], tree hollows DAMS submitted at deadline 8, para. 6.3.49 – 51] and burials [DAMS submitted at deadline 8, para 6.3.48 & Strategy for the Recovery of Human Remains, paras. 6.3.75 – 88].

The dDAMS is a mitigation strategy for archaeological remains directly physically impacted by the proposed Scheme. Setting impacts are addressed in the Environmental Statement [APP-044, Chapter 6 - Cultural Heritage; Chapter 7 - Landscape and Visual Effects], the Setting Assessment [APP-218] and the Heritage Impact Assessment [APP-195]. The dDAMS aims to address a range of relevant research agendas derived from the SAARF and related to understanding landscape change, history and memory, the siting and form of monuments – see, for example, the research questions for Sites 55.1, 55.2 and 55.3 between the Winterbourne Stoke link road and the WHS boundary on the A360 [DAMS submitted at deadline 8], and Sites 56.1 to 56.6 within and along the boundary of the WHS [DAMS submitted at deadline 8].

Regarding 'empty' spaces, please see the Applicant's Comments on any further information requested by the ExA and received to Deadline 5 and 6 response to ICOMOS-UK [REP7-021, para 31.1.5]: the HIA [APP-195] explicitly notes theories regarding apparent 'gaps' and details these areas; it also considers theories regarding the spatial and topographical arrangement and visual relationships of monuments and the spaces between them. The DAMS (submitted at deadline 8) provides for archaeological mitigation fieldwork within the road construction footprint. This commitment allows for the careful archaeological excavation of areas that are considered to be 'spaces between monuments' allowing for a better understanding and interpretation of their use and meaning.

Experiential aspects of the experience of the landscape are considered in the Setting Assessment [APP-218] and the HIA [APP-195], as noted in the Applicant's Response to the Examining Authority's Written Questions - 8.10.5 Cultural heritage (CH.1.4) [REP2-025]

The Applicant considers that the HIA has been carried out accurately in compliance with the Guidance on Heritage Impact Assessments for Cultural World Heritage Properties adopted by the International Council on Monuments and Sites (ICOMOS 2011) and with a full appreciation and

		understanding of the importance of the WHS and its OUV including the Integrity, Authenticity and the Attributes that convey OUV.
10.1.11	<p>2.3.4. Middle and Late Bronze Age research questions (dDAMS 4.6.11; p.49-50):</p> <p>The dDAMS identifies some potential for investigating the changes that took place in the Middle and Late Bronze Age when the Stonehenge landscape (especially in the western half of the WHS) was divided and enclosed for the first time by field systems and linear ditch land boundaries (Pollard et al. 2017, 290-92, 292-95, fig.18.8b). However, research expectations seem to be low, in part because of recognized difficulties in dating field systems and recovering environmental data from shallow features and deposits. Yet this is a self-inflicted problem that arises from low levels of sampling: if just 20% of a linear ditch is sampled, for example, it follows that 80% of potential sources of high quality dating evidence are lost. The dDAMS generally presents a flawed rationale (see section 4) that demands lower levels of sampling where evidence is predicted to be less concentrated or less frequent, whereas the opposite should be the case in order to answer research questions relating to past social and cultural contexts where activity was less intensive or less materially rich.</p>	<p>The dDAMS section on Middle to Late Bronze Age research questions has been updated, highlighting the investigation of changing land use and its economic and symbolic basis [DAMS submitted at deadline 8, Section 4.7]. These themes are further detailed in Appendix D Action Areas: Proposed archaeological fieldwork areas and preservation in situ areas, which sets out SAARF research themes and period-specific questions relevant to specific areas.</p> <p>With regard to sampling, please see the Applicant's deadline 7 Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 13.2.14, p. 161]. The Applicant's written summary of oral submissions in relation to Agenda Item 5.4 from the issue specific hearing on 21 August 2019 (submitted at deadline 8) explained the Applicant's iterative and reflexive approach to sampling in the DAMS. With regards to the sampling of features, the reflexive strategy has been updated and is as set out in the DAMS [as submitted at Deadline 8, paragraphs 6.3.36 – 51] which will respond to the significance of the remains as they are uncovered on site and in consultation with Wiltshire Council, Historic England and within the WHS, HMAG. There are therefore opportunities to increase the sample, and to further target areas where there is a low recovery, to ensure an accurate interpretation of an area.</p>
10.1.12	<p>3. Comments on dDAMS Section 5.2: Archaeological Mitigation Requirements (p.60-9)</p> <p>The dDAMS (sections 5.2.9-16) identifies the need to plan for the removal and disposal of excavated topsoil in a controlled manner. It does not, however, take account of the huge volume of chalk bedrock removed from the road cuttings that will accidentally</p>	<p>See response to Written Question CH.2.9 part iii [REP6-022] which explains that the Preliminary Works and Main Works Contractors will develop Soil Management Strategies (as set out in the updated OEMP as submitted at deadline 6) to control and manage the movement of topsoil from within the order limits of the Scheme, both within the WHS and outside the WHS.</p>

	<p>contain thousands of artefacts from features and deposits (anthropogenic and natural) that are unexcavated at the end of archaeological fieldwork because of the proposed sampling strategy. Highways England admitted at the Cultural Heritage hearings that they intend to use the chalk for temporary compound foundations as well as permanent landscaping purposes, etc, yet there is no plan in place to ensure this material causes no contamination of other areas. Despite being raised at the Hearings, the dDAMS fails to take any account of this issue. This is a careless approach, risking serious impacts on the integrity and authenticity of cultural heritage assets within and without the WHS. At the very least, all sub-surface features and deposits that may contain cultural material should be 100% excavated and sieved to ensure that no 'escaped artefacts' would be redeposited through road scheme activities.</p>	<p>With regard to the need for full recovery of archaeological evidence from the topsoil and sub-soil features, as stated in response to item 6.4.6 in the Comments on any further information requested the ExA to Deadline 5 and 6 [REP7-021]. This has also been discussed above in response to paragraphs 10.1.8 (100% recovery of artefacts from the ploughzone) and paragraph 10.1.11 (reflexive sampling of features). The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS.</p>
10.1.13	<p>4. Comments on dDAMS Section 6: Overarching Scheme of Investigation (p.77-107)</p> <p>4.1. Ploughzone sampling (dDAMS 6.3.11-18; p.84-5)</p> <p>The rationales for ploughzone sampling identified in the dDAMS are misguided and unjustifiable, apparently founded on basic industry standard estimations of appropriate levels of sampling intensity concerned with the identification of 'sites', rather than the kinds of research questions fitting for the WHS. Indeed, it is well known that intensive sampling is the only means to address such questions in the Stonehenge landscape (e.g. with respect to prehistoric settlement; see section 2.3). Trial trenching methods to 'evaluate' the sub-surface resource are also hugely destructive of the ploughzone and in themselves ineffective for identifying earlier prehistoric sites (cf. Hey & Lacey 2001, 59). It is deeply worrying that the kinds of sampling levels required of research investigations in the Stonehenge landscape – e.g. as specified by</p>	<p>See response to item 3.3.4 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which explains that Highways England had updated the deadline 6 submission of the dDAMS [REP6-013], the deadline 8 submission of the DAMS includes updated proposals for ploughzone artefact collection at paragraphs 6.3.11 to 6.3.19, following discussions with HMAG, including the mechanism for robust decision making. The artefact recovery strategy has been updated to include in situ lithic scatters at paragraph 6.3.30.</p> <p>See also the Applicant's written summary of oral submissions in relation to Agenda Item 5.4 from Issue Specific Hearing 8 on 21 August 2019 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS is explained. Both the National Trust and Historic England indicated at ISH8 that it was not correct that a 100% industry standard is applied, nor is there a blanket approach to requiring 100% sampling in every case.</p>

	<p>the National Trust and WCAS - should be suspended for the purposes of Highways England's fieldwork, or that anything short of the minimum requirements expected of research projects should be accepted.</p>	
10.1.14	<p><i>(4.1 cont.)</i></p> <p>The ploughzone sampling strategy outlined in the dDAMS is intrinsically flawed in three respects:</p> <p>(i). The proposed standard 1% to 4% sample level identified in the dDAMS issued by Highways England in June 2019 is insufficient for mapping ploughzone distributions of artefactual material, given that many excavated prehistoric structures and in situ activity areas are less than 5m in diameter, and that most sub-surface prehistoric features from which some ploughzone assemblages may be derived (through plough truncation) are less than 3m in diameter. A 4% sample strategy, therefore, has a high likelihood of missing localized concentrations of material. In the current version of the dDAMS (July 2019), mention of 4% has been deleted, and both this document and Highways England's 2018 AESR and OWSI documents (identified in dDAMS 6.3.13) make no commitment to any specific sampling level over 1% (see dDAMS p.85).</p>	<p>See response to item 13.2.14 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which explains that the DAMS submitted at deadline 6 sets out updated proposals for ploughzone artefact sampling, following further discussions with Historic England and other members of HMAG [REP6-013, p. 84 – 85, paragraphs 6.3.15 and 6.3.16]. The updated proposals, which are reflected in the DAMS submitted at deadline 8 [para 6.3.16], provides for a reflexive strategy for further sampling of the ploughzone to be developed in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. Statistical analysis of the distribution of the artefacts recovered during the archaeological evaluations will be developed to inform the identification of a representative sample size and distribution for further investigation, Highways England acknowledges that, in some areas, a sample of up to 100% of the artefact content of the ploughsoil may be required, combined with a systematic sample to capture background distributions and transitional areas. The strategy will adopt a reflexive approach such that the sample size may be increased locally in response to the results of the systematic sampling. See also the Applicant's written summary of oral submissions in relation to Agenda Item 5.4 from Issue Specific Hearing 8 on 21 August 2019 (submitted at deadline 8) where this approach was discussed.</p> <p>As stated in response to item 31.1.5 [Archaeological evaluation and sampling] in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021], the Applicant believes that the draft DAMS as issued at deadline 6 [REP6-13] (and carried through in that submitted at deadline 8) provides a proportionate</p>

		and reasonable approach that has fully considered the Scheme impacts on the archaeological resource situated within the order limits and proposes suitable mitigation in the form of preservation in situ or preservation by record as appropriate, including sub-surface features and their sampling and an intelligent and reflexive approach to ploughzone artefact sampling.
10.1.15	<p><i>(4.1 cont. - The ploughzone sampling strategy outlined in the dDAMS is intrinsically flawed in three respects:)</i></p> <p>(ii). The ‘scalable test pitting strategy’ proposed in the dDAMS takes no account of the fundamental need for intensive ploughzone recovery at consistent sampling levels in order to map presence/ absence and different kinds and scales of activity areas comprehensively. The ‘reflexive’ approach proposed would in fact be both relative and value-laden, with no objective mechanisms for judging why and to what extent the “sample size may be increased locally in response to the results of the systematic sampling” (dDAMS, 84). For example, it is suggested that more intensive sampling may be undertaken where there is some coincidence between artefact concentrations, dateable material, and/or subsurface features revealed in test trenching, etc (ibid.; cf. Highways England 2019b, 11). Yet no criteria are specified for deciding what is a ‘concentration’, the problems of recovering dateable material at low sampling levels are ignored (discussed in the next paragraph), and the assumption that lithic concentrations in the ploughsoil will simply be related to subsurface features is groundless. The only effective method is intensive sampling at a standardized – preferably 100% - level.</p>	<p>See response to item 40.1.5 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021] which explains that the Applicant has responded previously to the point regarding the sampling levels within the WHS [see REP5-003 paragraphs 34.1.17, 34.1.28 and 18.1.29]. See also above in response to paragraphs 10.1.8 (100% recovery of artefacts from the ploughzone) and paragraph 10.1.11 (reflexive sampling of features). The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS. The reflexive strategy will respond to the significance of the remains, whether that is artefact scatters in the ploughzone or archaeological features, as they are excavated on site, their significance is understood and in consultation with Wiltshire Council, Historic England and within the WHS, HMAG. There are therefore opportunities to increase the sample size through consultation, and to further target areas and increase the sample size in response to the significance of the remains as they sample excavated.</p>
10.1.16	<p><i>(4.1 cont. - The ploughzone sampling strategy outlined in the dDAMS is intrinsically flawed in three respects:)</i></p>	<p>See response to item 40.1.5 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 Report [REP7-021]. The ploughzone sampling strategy has been revised, following</p>

	<p>(iii). The very low proportion of dateable lithic artefacts in any assemblage, critical for establishing chronological frames of references for interpreting lithic scatters (which make up most ploughzone artefactual material), means that these are far more likely to be missed as sampling level decreases. As Prof. Parker Pearson (2019) has emphasized, by far the most research-effective methodology is a 100% sieved sample using a 1m grid. These observations are supported by recent experience during the SLE Project (De Smedt et al. 2017, further elaborated during the 2018 field season), which also trialled wet sieving of 10% of the topsoil sample, producing quantities of lithic microdebitage and smaller artefacts that might otherwise be lost through standard dry sieving techniques.</p>	<p>consultation with HMAG, and can be found in the draft DAMS (submitted at deadline 8; paragraphs 6.3.11-6.3.18 on Ploughzone Artefact Collection and paragraphs 6.3.28-6.3.35 on Artefact Recovery Strategy) and aims to respond to the distribution of lithic material in the ploughzone so far encountered (including concentrations, transitions and blank areas), incidence of chronologically and/or typologically distinctive pieces, coincidence with sub-surface features encountered in trial trenching, and possible topographical or activity-related distributions in order to comprehensively respond to the results of the archaeological evaluation and to ensure that sampling is implemented through the sieving process for the recovery of microliths and microdebitage.</p>
<p>10.1.17</p>	<p>4.2. Excavation sampling: general points (dDAMS 6.3.19-50, p.85-92; 6.4.1-6.6.3, p.98101)</p> <p>The totality of the destruction that will result in the areas affected by the proposed road cuttings should provide the fundamental basis for determining a ‘mitigation’ strategy in the WHS setting, but the approach taken by Highways England focuses on sample ‘recovery’ of data rather than what will be lost. Highways England and Heritage advisory bodies make no attempt – and, indeed, have no means - to define ‘acceptable’ levels of destruction of evidence.</p> <p>Unlike sampling strategies applied in research projects, where it is common to leave at least 50% of the fills of features undisturbed in situ, to allow future researchers opportunities to re- examine these, the A303 scheme will result in total erasure of the entirety of the road cutting areas (e.g. from the western tunnel portal to the western boundary of the WHS, c.8-10 hectares). Any ‘sampling’ regime for the A303 scheme has nothing to do, therefore, with maximizing research outcomes or conserving</p>	<p>See responses to paragraphs 10.1.14 to 10.1.16 inclusive above.</p> <p>Highways England understands Mr Garwood’s concerns regarding sampling regimes within road cutting areas but maintains that the excavation sampling that is proposed is sufficiently flexible and robust for the Scheme.</p>

	<p>future research potential, but only the extent to which fieldwork and post-excavation can be minimized. This rationale should have no place in such a research-sensitive and significant setting as the Stonehenge WHS area, where exemplary research-defined fieldwork methodologies only should apply.</p> <p>The dDAMS defines ‘acceptable’ sampling scales for some feature categories (e.g. 20% of a linear feature, 40% of an enclosure ditch, etc; dDAMS 6.3.42), but these are groundless: there is no objective basis for judging how much should be destroyed unrecorded, and there is no way in which research significance of one part of a feature can be determined as greater or lesser than another in advance. In effect, therefore, the destruction process is arbitrary and not led by any coherent means of judging real (rather than ‘potential’) research value a priori.</p>	
10.1.18	<p>(4.2. – cont.)</p> <p>More generally, the dDAMS seriously underestimates the research potential of lithic scatter evidence found in situ in anthropogenic features and natural features and deposits. The research potential of this material, and methodological approaches to its investigation, are clearly addressed in the current Historic England draft guidance document (Historic England 2018). This observes, with respect to lithic sites, that “standard archaeological methodologies presently employed are often not sufficiently subtle to ensure their effective identification, characterisation and preservation. Archaeological interventions (trench evaluation, strip and record, and area excavation) can actually result in the destruction of the resource” (ibid. 15). The minimal, inadequate assessments of research potential in the dDAMS (outlined in section 2.3 above) are a clear measure of the</p>	<p>The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS. This includes consideration of an appropriate research-led strategy for the lithic assemblages in the ploughsoil and [DAMS submitted at Deadline 8, paragraphs 6.3.11 – 6.3.10 and 6.3.28 – 6.3.35].</p>

	limited methodologies and low expectations of the evaluation fieldwork conducted for the scheme.	
10.1.19	<p>(4.2. – cont.)</p> <p>A further matter of concern is the intention to use machining as a means of excavation (e.g. see dDAMS sections 6.4.5-7, 6.5.6-9), especially for topsoil (ploughzone) stripping (the first stage of strip, map and sample techniques). This would not normally be allowed within the WHS in a research context (unless serious disturbance of deposits is already known). Instead, in all research-led fieldwork, hand-excavation is required in order to maximise artefact recovery and ensure that archaeological surfaces are less likely to be truncated in the course of excavation. As with ploughzone sampling, there seems no justification for allowing different rules to apply for A303 scheme fieldwork in the WHS, when the highest research standards should apply.</p>	The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS including appropriate measures in the strategy for the careful use of machine excavation and also hand excavation where this is appropriate.
10.1.20	<p>(4.2. – cont.)</p> <p>In summary, the target should be 100% excavation as the only reasonable ‘mitigation’ for 100% destruction of the ploughzone, all subsurface anthropogenic features and all natural features and deposits that contain cultural material. This is true not only in principle but also in terms of research effectiveness and the potential to address research questions in a comprehensive and analytically robust manner. This should be based on total recovery of all detectable and recordable evidence of all aspects of past human activities, and their environmental contexts, within the areas affected.</p>	See responses to paragraphs 10.1.14 to 10.1.16 inclusive above.

10.1.21

4.3. Excavation sampling: tree throws and hollows (dDAMS 6.3.48-50; p.91)

The proposed methodology for dealing with tree throws and hollows (dDAMS sections 6.3.42-43) is a good example of the flawed character of the dDAMS with respect to excavation sampling strategies. The decision-making process that is outlined for determining whether or not to sample-excavate is specious. The argument that a 'representative sample of tree throws' can be identified for investigation based on 'proximity and location' in relation to lithic scatters, monuments, 'landforms', and known archaeological remains (such as tree throws near identified pits) does not have any obvious archaeological basis. There is no rationale that privileges these attributes over others.

Identification of 'cultural settings' as a way of defining specific tree throws as more or less potentially research-valuable, and therefore most suitable for investigation, is not only exceptionally difficult a priori (in part, because tree throws/hollows are themselves part of the cultural landscape), it also ignores all other possible research-significant data that may be recovered (including comprehensive spatial and dating evidence for tree fall, clearance episodes, extensive occupation practices, etc). The approach proposed in the dDAMS misses the fundamental importance of gaining a full and comprehensive landscape-scale understanding of these features irrespective of whether they contain cultural material, and whether they are close to locations deemed to be culturally significant or not. As with all sub-surface features that may be destroyed by the road scheme, the primary aim should be 100% excavation.

The DAMS being submitted at deadline 8 has been revised with regard to the methodology for dealing with tree throws and hollows. Tree hollows were encountered across all evaluation areas, with some local variations in density which may relate to historic ploughing, topography and drainage, or possibly to specific prehistoric land use. The distribution of tree hollows has potential to contribute to studies of landscape evolution and change across the WHS and its environs. The comprehensive mapping and investigation of a representative sample of tree throws for artefactual, ecofactual and palaeoenvironmental evidence is therefore proposed, comprising:

- mapping and investigation of all possible tree hollows encountered in mitigation areas (i.e. interpretation);
- archaeological excavation of a sample of confirmed tree hollows; and
- recovery of a sample of 150 litres of the fill of excavated tree hollows to be sieved for small artefact recovery. If sieving produces significant quantities of settlement debris, particularly hazelnut shell, then flotation samples will also be processed, in line with the iterative approach taken in the Environmental Sampling Strategy.

The following factors, informed by the results from the evaluation stage and in general in this landscape, will be considered in identifying a representative sample for excavation, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG:

- Proximity and location in relation to lithic scatters;
- Proximity and location in relation to monuments;
- Proximity and location in relation to landform;

		<ul style="list-style-type: none"> □ Proximity and location in relation to known archaeological remains e.g. tree throws near identified pits. <p>A representative sample (but no less than 12.5% of the confirmed tree hollows) will be identified for excavation as above. The strategy will adopt a reflexive approach such that the sample size may be revised in response to the results of the systematic sampling, in order to ensure the sample remains representative and areas of high potential for meaningful interpretation are maximised. The agreement of the tree hollow sample excavation requirements will be sought through the consultation meetings with Wiltshire Council, Historic England and within the WHS, HMAG. Thus, a landscape-scale understanding of these features, irrespective of whether they contain cultural material or not, will be possible.</p> <p>The reflexive strategy will respond to the significance of the tree hollows and the material that they contain, so that their significance is understood and in consultation with Wiltshire Council, Historic England and within the WHS, HMAG. There are therefore opportunities to increase the sample size through consultation, and to further target tree hollows and increase the sample size in response to the significance of the remains as they are tested / excavated.</p>
<p>10.1.22</p>	<p>4.4. Excavation sampling: natural features and deposits (dDAMS 6.7; p.101-2)</p> <p>As with tree throws, the dDAMS strategy for investigating ‘natural’ features and deposits in the Stonehenge landscape, such as channel fills, colluvial slope sediments, solution hollows and pipes, etc, is narrow and research-limited. This strategy focuses on geo-archaeological sampling (except when cultural deposits are found accidentally). A significant outcome of the current SLE Project (De Smedt et al. 2017, and fieldwork in 2018) is recognition that a high proportion of the supposedly ‘natural’ features investigated contain cultural material, in some cases</p>	<p>The dDAMS being submitted at deadline 8 contains an updated strategy for both anthropogenic and natural features, which will both be systematically sample excavated following a reflexive approach [DAMS submitted at deadline 8, Excavation Sampling Strategy, para. 6.3.36 – 51; DAMS submitted at deadline 8, Section 6.7 Strategy for Geo-archaeological Investigation], geo-archaeological and palaeoenvironmental investigation (including geo-archaeological sampling).</p> <p>The reflexive strategy will respond to the significance of the natural features (including ‘channel fills, colluvial slope sediments, solution hollows and pipes’ and the material that they contain, so that their</p>

	<p>probably in situ or only locally displaced, while in other cases redeposited in more high energy environments such as channels.</p> <p>As with tree throws and linear archaeological features such as ditches, any sampling strategy in the context of the road scheme is as much a strategy for not investigating and thus deliberate, planned loss of evidence. In this case, in order to gain as comprehensive an understanding as possible of the parts of the Stonehenge landscape that would be totally destroyed should the road scheme be approved, it is axiomatic that all potential sources of information should be 100% excavated. The neglect or avoidance of 'natural features' in many previous field projects, and clear underestimation of research potential in the light of recent work, reinforce this point.</p>	<p>significance is understood and in consultation with Wiltshire Council, Historic England and within the WHS, HMAG. There are therefore opportunities to increase the sample size through consultation, and to further target these features and increase the sample size in response to the significance of the remains as they are tested / excavated.</p>
10.1.23	<p>5. Conclusions</p> <p>The primary conclusion of this assessment is straightforward: the dDAMS is not fit for purpose.</p> <p>1. The dDAMS fails to recognize, evaluate or address the impacts of the proposed scheme on the WHS OUV attributes concerned with landscape settings and spatial and visual relationships. Consequently, the dDAMS incorporates no attempt whatsoever to prevent damage to these</p>	<p>Please see the responses to paragraphs 10.1.2 and 10.1.3 above.</p>
10.1.24	<p><i>(5. Conclusions – cont.)</i></p> <p>2. The dDAMS is based on an exceptionally weak appreciation of research agendas and potential, demonstrating only a limited consideration of current national and regional research frameworks and strategies in British prehistoric archaeology, both in general terms and with respect to period---specific research agendas.</p>	<p>Please see the responses to paragraphs 10.1.1 and 10.1.4 to 10.1.11 above.</p>

10.1.25	<p>(5. <i>Conclusions – cont.</i>)</p> <p>3. The use of research framework agendas and strategies (in the form of ‘research questions’) in the dDAMS is highly partial and selective. A wide range of research themes of special importance in the Stonehenge landscape are thus considered only cursorily or not addressed at all.</p>	Please see the responses to paragraphs 10.1.1 and 10.1.4 to 10.1.11 inclusive above.
10.1.26	<p>(5. <i>Conclusions – cont.</i>)</p> <p>4. The dDAMS (and the HIA document) demonstrate a lack of engagement with the WHS as an entity (i.e. in areal, landscape terms), and ignores fundamental spatial and visual aspects of the landscape, and the monuments and sites within it. In effect, this fails to take account of – and indeed risks compromising – many of the OUV attributes that define the Stonehenge WHS area.</p>	Please see the responses to paragraphs 10.1.1, 10.1.12, 10.1.3, 10.1.5 and 10.1.9 above.
10.1.27	<p>(5. <i>Conclusions – cont.</i>)</p> <p>5. Methodologically, the dDAMS is profoundly flawed both in principle and in terms of proposed ‘mitigation’ methods. There are several reasons for this: (i) failings in the specification of research agendas and questions resulting in major gaps and weak or groundless technical rationales; (ii) the lack of a coherent, transparent process for judging significance and prioritization; (iii) reliance on commercial rather than research archaeology baselines (as imposed on research projects within the WHS by the curatorial bodies that constitute the HMAG) for assessing both research value and appropriate methods; (iv) ‘sampling’ rationales that are founded on ‘cost/benefit’ estimations that are out of place in a WHS setting where the proposed works will result in total destruction of all features and deposits left uninvestigated (including most of the highly important ploughzone).</p>	Please see the responses to paragraphs 10.1.1 and 10.1.12 to 10.1.22 inclusive above.

10.1.28	<p>(5. <i>Conclusions – cont.</i>)</p> <p>6. The dDAMS demonstrates no engagement with any of the serious matters raised by a wide range of experts, including the Consortium of 22 Archaeologists that represents most of field research projects conducted in the Stonehenge landscape in the last 20 years.</p>	<p>See response to item 40.1.1 point 5 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021] which states that Highways England disagrees with the assertion that the DAMS demonstrates no engagement with the matters raised by experts.</p>
10.1.29	<p>(5. <i>Conclusions – cont.</i>)</p> <p>In this light, the dDAMS is a fatally compromised document in all respects that ultimately fails to pay due care and attention to what defines the Stonehenge WHS area as a landscape “without parallel” (cf. Simmonds & Thomas 2015, 27; ICOMOS 2018). In the view of the present author, the dDAMS should be rewritten completely in order to meet the basic requirements of such a document with respect to the nature of the WHS and its exceptional research significance. It would be far better, of course, not to destroy swathes of the WHS and permanently damage its OUV attributes. The best solution for avoiding the negative archaeological and cultural heritage impacts of the scheme is to move the western tunnel portal to a point outside the WHS, as recommended again in the most recent UNESCO report on the WHS (UNESCO 2019, 203-5).</p>	<p>See response to item 6.3.5 in the Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021] which states that Highways England has explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the World Heritage Site and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified [see REP1-015]. The Applicant also refers to its written summary of oral submissions made at the most recent Issue Specific Hearing 8 on 21 August 2019, where the July 2019 decision of the World Heritage Committee was discussed at Agenda Item 3.2. The Applicant’s written summary of oral submissions made at that hearing (submitted at deadline 8) records the Applicant’s (and DCMS’s) response to the decision, as well as the Applicant’s submissions related to the test that the World Heritage Committee appeared to apply and the evidence available to the World Heritage Committee, compared with the far more detailed evidence before the Examining Authority and Secretary of State, including with respect to the consideration of longer tunnel alternatives. Highways England continues to work closely with heritage stakeholders and will continue to report to and engage with UNESCO, ICOMOS and the World Heritage Committee through DCMS.</p> <p>The earlier responses in this document demonstrate why the DAMS is not a “fatally compromised document”. The Applicant has had full regard to the international status of the WHS in its design of the Scheme and its heritage impact assessment reflects that, concluding that overall the</p>

		Scheme will have a Slight Beneficial effect on the OUV of the WHS as a whole, and will sustain the OUV.
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11 M&R Hosier (REP6-087)

11.1	Comments on Deadline 4 comments (REP5-003)	
	Matter Raised	Highways England's Response
11.1.1	<p>18.1.1</p> <p>Appropriate management measures would depend on the condition of the soil. The contractor is responsible for the protection of geology and soil resources during construction, including in relation to the removal, handling, and storage, as well as reinstatement, will be delivered through measures contained in the Outline Environmental Management Plan (OEMP) [APP- 187] (a revised version of which is submitted at Deadline 3). The primary mechanism for this protection will</p> <p>be the Soils Management Strategy (SMS) (MW-GEO3), which will identify the nature and types of soil that will be affected and the methods that will be employed for stripping and storing soil (with topsoil and subsoil being stored separately (where present)) and the restoration of agricultural land. Compliance with the OEMP is secured through paragraph 4 of schedule 2 of the draft development consent order [REP2-003]. Stone curlew deterrent measures will be included in the CEMP (PW-BIO5 and MW-BIO8) as specified within the Outline Environmental Management Plan (OEMP) [APP-187].</p> <p>40.3.47 refers to soil and protection to soil, with a short sentence directing to PW-BIO5 and MW-BIO8. We believe both responses to be lacking in the necessary detail to provide adequate deterrents to nesting Stone Curlews within the boundaries of the Scheme. We continue to raise this point yet PW-BIO5 and MW-BIO8 remain unchanged.</p>	<p>Please see response to item 5.1.2 in the Comments on any Further Information received at Deadline 5 and 6 [REP7-021]. It is not considered to be suitable to specify deterrent or screening measures to be incorporated at this stage, as the measures will be determined on a site by site basis. Stone curlews nest in open bare ground habitats, away from habitat that impedes line of site, such as hedgerows and trees as these features can be used as perching locations for predators.</p> <p>As stated within PW-BIO5 measures to deter stone curlew include (but are not limited to), maintaining areas of dense crops, or, visual deterrents such as lines with flapping attached in areas to be affected by construction (although these would need to be confirmed on a site by site basis). The RSPB will be consulted on suitable mitigation measures to be incorporated on a site by site basis.</p> <p>It should be noted that once the Scheme is under construction, the combination of deterrence measures and human activity would mean it is likely that birds would be deterred from nesting within the active working areas or in close proximity.</p>

	<p>We have previously asked what these bird deterrent measures may be, but have had no answers.</p> <p>In areas where work is not expected to commence immediately, we would expect the Scheme to retain ground cover between the months of March to July to minimise the risks of a Stone curlew breeding attempt.</p>	
<p>11.1.2</p>	<p>18.1.2</p> <p>The Applicant continues to show a lack of understanding for the Stone curlew species and their behaviour.</p> <p>Firstly refer to our comments in item 18.1.1 above, the Applicant's mitigation to prevent Stone curlews from nesting within the Scheme area is exactly the same as the measures intended for "creating" the new Stone curlew mitigation plot at Parsonage Down. As such, this is inadequate.</p> <p>Item 9.7.17 of the Comments received to Deadline 3 [REP4-036], is in breach of Habitats Regulations. It is not only the nest that is in need of protection. The chicks are dependent upon their parents for food for up to 10 weeks. During this time, they are vulnerable to being run over by construction traffic. See our comments in response to Comments received to Deadline 3 [REP4-036].</p> <p>There are no references within the OEMP in respect of the autumn Stone curlew roost, so we do not agree that the Applicant has taken suitable and proportionate measures.</p>	<p>Please see response to item 5.1.1 in the Comments on any Further Information received at Deadline 5 and 6 [REP7-021] and responses to 18.1.2, 18.1.3 and 18.2.40 in the Comments on any further information requested by the ExA and received at deadline 4 [REP5-003]. Clearance of vegetation and soil (a scrape) are proposed for the creation of the plot at Parsonage Down [please refer to response to 18.1.2 within REP5-003]. PW-BIO5 and MW-BIO8 of the OEMP [AS-085] require measures to be implemented to protect stone curlews during construction.</p> <p>As set out in the OEMP, a deterrent measure that could be employed is topsoil only being stripped where works are planned to occur, prior to this, crops will be retained (where necessary and appropriate) to deter stone curlew from nesting. Depending on topography and crop, it could also help to impede line of sight for birds on the ground. Where high intensity of human activity commences in areas for construction prior to the breeding season for stone curlew, this activity would provide deterrence when the birds arrive in the spring. If works are required to start during the breeding season in some areas, deterrence measures could be applied in advance, for example silent bird deterrents could be used, such as lines of moving tape, or bird predator kites (all measures are to be confirmed following consultation with the RSPB and on a case by case (and site by site) basis).</p> <p>Once topsoil stripping is carried out during the main construction period it is expected that there would be high levels of human activity within the construction site because excavations would be expected to commence concurrent with or soon after removal of soil in sections of the Scheme. Whilst bare chalk is a favourable substrate for nesting sites for stone curlew, it would be unlikely to attract stone curlew to areas adjacent to daily activity of</p>

		<p>construction vehicles which would be excavating, moving or placing material in the vicinity. The bunds around the construction compounds would have vegetation established to soften their appearance in the landscape so they would not be likely to provide suitable conditions, or not for long and certainly not given the high level of human activity that would be carried out within the compounds during setting up and subsequently.</p> <p>It should be noted that all wild bird species, their eggs and nests are protected by law, the response to 19.7.17 was specifically about the legal protection of the nest, and the nest considered to be active. Should any chicks be present within the construction site suitably experienced specialists would check daily for activity and ensure measures were in place to protect them from harm during construction (as set out in the OEMP).</p> <p>The measures that have been previously stated within the OEMP [AS-085] and the response to 9.5.1 of the Comments on any further information requested by the ExA and received to Deadline 3 [REP4-036], are considered sufficient to avoid an adverse effect on the integrity of the local population of stone curlew from disturbance associated with the construction phase of the Scheme.</p>
<p>11.1.3</p>	<p>18.1.3</p> <p>We dispute the fact that the Applicant has used specialists with Stone Curlew experience; if this had been the case, they would have been able to detect the Stone curlews they were already monitoring on the archaeological site without the need to call in the RSPB Stone curlew team. As such, we have no confidence that the Applicant has taken on board the Annex 1 status of the bird, giving no reassurance as to the protection of the birds during the 6 years of construction of the Scheme.</p> <p>We stand by all our comments within our reply to Comments received to Deadline 3 [REP4-036].</p>	<p>Highways England has noted your comments. Please refer to the response of 18.1.3 of Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003]. It should be noted that it was within the method of works that the RSPB should be consulted if stone curlew activity was detected in the vicinity of works, the RSPB had agreed to the methods and provided support where necessary when the project staff identified the presence of stone curlew during archaeological investigations in 2018. This was an example of collaborative working to achieve a common goal.</p>

11.1.4	<p>18.1.4</p> <p>Comments received to Deadline 3 [REP4-036] item 30.1.9. We are unable to locate this reference as the report only goes up to item 27.1.9!</p> <p>The Applicant states that they stand behind the contents of the SIAA, yet the Scheme as presented would fail to meet Habitats Regulations as it fails to “<i>dispel all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned as well as the unknown impact of recreational pressures once the Scheme is in operation</i>”</p> <p>Therefore, in order to avoid triggering Habitats Regulations, the Applicant HAS TO provide the additional two Stone curlew plots to mitigate any potential negative effects due to potential recreational pressures upon the two Normanton Down Stone Curlew breeding plots. Parsonage Down, being in the path of the proposed Scheme, had to be mitigated. Winterbourne Downs plot was a net gain in respect of the biodiversity legacy of the Scheme (as stated within Chapter 8</p> <p>Biodiversity [APP-046]), and would therefore not be counted as mitigation for Normanton Down plots. This is also noted within RSPB Written Representation [REP3-013]</p> <p>Mitigation for the two Normanton Down plots would need to follow the same criteria used to locate the new Parsonage Down plot, ie to be in as close a proximity as possible, for the displaced breeding pair to use. This is reference Chapter 8 Biodiversity [APP-046] paragraph 8.9.28</p> <p>8.9.28</p> <p><i>“As part of the embedded mitigation of the Scheme a new 1.2ha stone curlew breeding plot would be created within Parsonage Down SSSI and NNR. The new breeding plot would be created, under</i></p>	<p>As stated in HRSA Clarification Note (Appendix A of the Statement of Common Ground with Natural England [REP7-011] submitted at deadline 7), the additional plots are considered to provide confidence beyond reasonable scientific doubt that there would be no loss of nesting opportunities for stone curlew in the event of any in-combination impacts from increased recreational usage of the existing byways adjacent to Normanton Down RSPB Reserve following the landowners refusal to the offer of improved fencing. Highways England has already identified a selection of suitable locations for additional stone curlew plots (all of which have been confirmed by RSPB as suitable) and is in discussion with landowners who are interested in providing the plots. For the additional plots, which mitigate the risk of an in-combination impact, the commitment by Highways England to provide additional plots provides the surety required for the Habitats Regulation Assessment.</p> <p>The stone curlew plot provision will provide a net gain of optimal stone curlew nesting opportunities. For the purpose of Habitat Regulations Assessment is it not necessary to provide mitigation against the possibility of future disturbance of individual pairs of stone curlew as such, but rather that the population of stone curlew within the SPA and the supporting area around it should be maintained by ensuring no reduction in the opportunities for nesting. The selection of locations for the stone curlew plots is being based on the parameters agreed with the RSPB and set out in the sift appraisal of the HRSA Clarification Technical Note (Appendix A (Appendix 1) of the Statement of Common Ground between Highways England and Natural England submitted at Deadline 7 [REP7-011]). This highlights the conditions suitable to provide an optimal stone curlew nest plot. Several suitable locations have been identified in the vicinity of the Scheme and Westfield Farm is one of several landholdings with suitable locations where the landowners have expressed an interest in additional stone curlew plots. Discussions are on-going with the landowners.</p> <p>With regards to great bustard, this species is not relevant to the HRA as it is not one of the features for which the Salisbury Plain SPA is designated. Notwithstanding, the mitigation measures incorporated within PW-BIO5 and MW-BIO8 of the OEMP [REP6-011] will be consulted upon with the Great Bustard Group and are considered suitable to avoid adverse effects on the local population.</p>
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agreement with Natural England, approximately 500m from the stone curlew breeding plot to be lost, in what is very likely to be the foraging area for the breeding pair on the plot to be lost; as such, it is very likely to be easily discoverable by the birds that breed on the plot to be lost”

Similarly, The Statement to Inform Appropriate Assessment paragraph 5.1.7 refers to:

5.1.7

“There is a high degree of confidence that this stone curlew plot will be utilised as it is to be provided in a suitable area on suitable soil close to an existing plot that has been regularly used by stone curlew, and the plot is being designed and delivered in conjunction with RSPB and Natural England in a manner that has been successful with the other plots around the Salisbury Plain area.” This also highlights the need for replacement plots to be placed as close as possible to an existing plot that has been regularly used by Stone curlews.

Issue Specific Hearing 7, Biodiversity and ecology [REP-035] under item 3 Effects on Stone curlew and adequacy of proposed mitigation measures, page 2-3

“Dr Peaye confirmed the intention that the replacement plot be as close as practicable to the lost plot”

With this in mind, and taking into account that Normanton Down Reserve is part of our farm and our main ecological focus, we believe that mitigation plots should also be established on our farm. This will act in part for compensation for the potential damage that increased recreational pressures may bring onto our Reserve on which a considerable amount of Government and private money has been invested.

The Great Bustards have indeed bred on and continue to frequent Normanton Down. There have been no surveys carried out by the

	<p>Applicant to establish this, however, data to support our claim can be gained from the GBG direct.</p>	
<p>11.1.5</p>	<p>18.1.5</p> <p>We acknowledge the Applicants response that <i>“grazing management measures to be incorporated into the Scheme will be confirmed through a combination of the detailed landscaping scheme to be submitted under Requirement 8 and the LEMP, prepared under the framework contained in the OEMP (MW-LAN1) [REP4-020]”</i>. However, we remain of the opinion that this needs to be agreed now to prevent problems developing in the future and avoid unnecessary expenditure.</p> <p>We respect the comments from the Butterfly Conservation, but there are a whole host of other invertebrate species other than butterflies that are already present in the area, some of which are on the endangered list. This was identified by the invertebrate studies carried out for the Scheme.</p> <p>6.3 Environmental Statement Appendices Appendix 8.11 Invertebrate survey report.</p> <p>Page 35, under item 5, conclusions notes <i>“all 8 sites included in the 2017 survey have been shown to have a significant invertebrate fauna.”</i></p> <p>The report goes on to say <i>“However, the Countess Cutting CWS and Arable 1 (Normanton Gorse Wood on its southern and western wide conservation margins) sample sites also have an exceptionally rich invertebrate fauna found in association with early-to mid-successional chalk grassland habitats and wide arable margins respectively;”</i></p> <p>The report continues to say <i>“these are also of at least county importance for invertebrates. That found on the wide arable margins</i></p>	<p>As previously discussed in the response to 18.1.7 of [REP5-003] any grazing units will be incorporated into the LEMP and Landscape Scheme under Requirement 8 of the DCO where practicable, where this is not the case a mowing regime will be incorporated into the management activities, the design of which (including the management regime) will fall within the detailed design phase. Where grazing is to be incorporated suitable water infrastructure and fencing will be installed.</p> <p>It is acknowledged that as shown in the invertebrate survey report [APP-250] the less-intensively managed areas of Westfield Farm include some diverse assemblages of invertebrate species, although none of those areas would be lost to the Scheme.</p> <p>Butterflies are certainly not the only group of species that contribute to biodiversity in local grassland habitats, although some butterfly species do have particular importance for nature conservation, for example Marsh fritillary butterfly is an Annex II species which is one of the primary reasons for the selection of Salisbury Plain as a Special Area of Conservation. Butterflies are regarded as useful indicator species owing to their sensitivity to environmental factors and their dependence on habitats of good quality. For these reasons, butterflies are used by the government as the indicators for assessing changes which affect broad assemblages of insect species of the countryside [1]. As such, it is generally considered that should the habitat be considered suitable to support a range of butterfly species of chalk grassland habitat, it would ultimately provide optimal habitat for all chalk grassland invertebrate species present within the study area for the Scheme.</p> <p>It is agreed that the habitat creation needs more than just uniform seeding with a seed mix containing the food plants of some key butterflies. Hence, in developing the LEMP and the landscaping scheme the aim will be to create diversity of locally appropriate habitat at a range of scales within the Scheme as a whole, by a combination of initial treatments and subsequent management. This will have the potential to develop habitats suitable for a</p>

at the Arable 1 site (Normanton Gorse) demonstrates that the adoption of conservation headlands here is certainly having benefits for invertebrates.”

Second paragraph notes *“Diamond Wood and the Arable 2 and Arable 3 sample sites are somewhat less diverse, but still have important invertebrate assemblages of local and county importance.”*

6.3 Environmental Statement Appendices Appendix 8.11
Invertebrate survey report.

Page 28 item 4.5 Arable 1

“The focus of invertebrate study effort here was on the side conservation headlands the owner has retained around the edge of the field, with these running along the entire southern and western edges of Normanton Gorse. The headlands have a two-tiered structure, with a more frequently ploughed strip adjacent to the crop and a less disturbed zone running up to Normanton Gorse. This structure creates an excellent range of vegetation structures, from sparse vegetated soil at the crop edge, through taller and more closed growth of forbs through to rank grassland and scrub. Such graduations in structure are known to allow the development of diverse assemblages of invertebrates.”

The above passage notes the excellent range of vegetation structures that have been created for invertebrates. This area is created by mowing no more than half the area once a year, and mowing the whole area only once every 3 years.

We would suggest that the Applicant has chosen to concentrate on only the colourful invertebrates within its management strategies, neglecting other Red Data Book species and others of National Scarcity that would require a range of habitat structures as noted within the survey document report above. Just because these invertebrates are small, not often seen and drab in colour, does not mean that they are of any less importance than the butterflies.

wide range of invertebrate species, including, but not limited to indicator species of butterflies of chalk grassland.

With regard to the management regime, it will be designed to achieve, amongst other things, favourable conditions of target habitat by managing it at suitable frequency and time of the year. The confirmation of the grazing / mowing regime adopted will be confirmed within the detailed design phase.

Reference [1] – JNCC website (Accessed 20/082019) <https://jncc.gov.uk/our-work/ukbi2018-c6-insects-of-the-countryside/>

	<p>Therefore, there is a duty to provide a habitat for these species as much as for the butterflies alone. As previously stated, we are concerned that the management of the chalk grassland around the western portal and cutting will act as a sink, drawing in the important species already present within the area, only to be destroyed by mowing more than once a year.</p> <p>The Scheme is billed for enhanced biodiversity, not for destroying the biodiversity that is already present within the area.</p>	
<p>11.1.6</p>	<p>18.1.6</p> <p>We now understand that the Scheme is targeting butterflies within this area with a short sward incorporating bare areas.</p> <p><u>Species requirements</u></p> <p>Adonis Blue feeds on Horseshoe vetch Chalkhill Blue feeds on Horseshoe vetch</p> <p>Small Blue feeds on Kidney vetch Marsh Fritillary feeds on Devils-bit scabious</p> <p>These wildflower species take a while to establish, so there is potential to require plant plugs to help them establish.</p> <p>As outlined in our response to Comments received to Deadline 3 [REP4- 036], this will not provide hunting habitat for Barn owls and may even lead to the unfortunate situation where Stone curlews will attempt to breed within sub optimal locations resulting in an unsuccessful breeding attempt.</p> <p>We therefore, urge the Applicant to consider these facts when finalising the grassland management of this area.</p> <p>We look forward to seeing the proliferation of butterflies within the area as their plant food establishes over the years, but hope it is not to the detriment of those species that are already present.</p>	<p>As stated within the paragraph 11.1.5, butterflies are a useful and recognised indicator species due to their sensitivity to environmental factors. Providing suitable habitat for butterflies of calcareous grassland is considered likely to enhance the area for a range of invertebrates of the area.</p> <p>The Landscape Scheme that will be produced, alongside the LEMP, will include details of seeding. To aid establishment of some species in the calcareous grassland planting of wildflower plugs may be used to enhance the composition, or other means to aid the establishment and development of the target habitat, although this will be determined on a site by site basis as part of the detailed design stage. As described in the OLEMP [APP-267] and in response to 18.1.6 of the Comments on any further information requested by the ExA and received at deadline 4 [REP5-003], the objective will be to promote heterogeneity within the habitat through the creation of a mosaic of early stages of successional calcareous grassland communities, ranging from sparsely vegetated bare ground and rock through to closed, species-rich swards, such as the more open calcareous grasslands traditionally present in areas of Salisbury Plain and Parsonage Down. It is agreed that the early stages of chalk grassland habitat will not have the closed sward and slightly tussocky structure favourable for small mammals and hence for barn owl, kestrel and other predators to hunt them and areas which are kept relatively short by grazing will not be as favourable for small mammals and their predators. However, this will be beneficial for species such as barn owl, as it would not encourage barn owls to hunt along the roadside verge (paragraph 8.9.216 of Chapter 8 of the Environmental Statement [APP-046]). Nonetheless, given the scale of the Scheme overall and the planned diversity of management within it, it is likely there would be scope for conditions highly</p>

		favourable for small mammals as habitats develop and are managed over time.
11.1.7	<p>18.1.7</p> <p>We stand by our comments that with a forward-thinking design, areas could, where possible, be managed by grazing rather than the more high maintenance option of mowing. Grazing requires fencing and water provision but does not need an area to dump mowing material. Livestock have been successfully managing grassland pastures for biodiversity for thousands of years.</p> <p>Presumably, the design will incorporate areas for mowing arisings to be composted, so this really is an area that needs to be sorted sooner rather than later, to avoid management issues.</p> <p>Can the Applicant tell us how the top 2.5m of the chalk grassland of the deep cutting will be safely mowed?</p>	<p>Please see paragraph 11.1.6 above, in addition, the appropriate management details would be determined as part of the framework secured by the detailed Landscaping Scheme and LEMP, along with the provision of stock-proof fencing and water infrastructure in areas to be grazed, as appropriate.</p> <p>It would not be suitable to confirm the management of the top 2.5m of the chalk grassland at this stage of the Scheme, however it would be managed either under a mowing regime or grazed.</p>
11.1.8	<p>18.1.8</p> <p>Items Referenced –</p> <p>9.5.2</p> <p><i>See response to item 40.3.7 and 40.3.9 in the Comments on Written Representations [REP3-013]. The Scheme would not change Byways 11 and 12. Visitor usage of the PRoWs adjacent to Normanton Down has been surveyed and this is ongoing. The results will provide a baseline for any subsequent monitoring of visitor usage of the PRoWs.</i></p> <p>9.7.1</p> <p><i>The scope of the cumulative and in-combination assessments undertaken for the Scheme, as well as the assessments contained in the Applicant's Habitats Regulation Assessment documentation</i></p>	<p>Highways England commissioned surveys of the use of Byways 11 and 12. These were initially undertaken 30th March 2018 to 19th April 2018, then 1st – 20th June 2018. The surveys were reinstated on 25th March 2019. These surveys are ongoing and continue to record user numbers and type.</p> <p>Fixed cameras are used to record movements along the byways from a point on the public highway. Data abstracted was provided at Issue Specific Hearing 6 and again at Hearing 9. See Agenda item 4.9 – 4.12 in the Written summaries of oral submissions made at the Traffic and transport hearing held on 13th June 2019 [REP4-034] and on 22 August 2019 (to be submitted at deadline 8).</p>

	<p><i>generally, are considered to be robust. Mitigation and enhancement measures are currently under discussion with the RSPB and Natural England and agreements will ensure that the measures provided will avoid any adverse impacts on the integrity of the SPA</i></p> <p>Please refer to our reply to 9.5.2 Comments received to Deadline 3 [REP4-036]. There have been no surveys undertaken of visitor monitoring along byways 11 and 12 in the location of Normanton Down Reserve. The Applicant has always courteously informed us when surveys will taking place within this area even, if they are carried out from the byways themselves. We have received no such emails relating to visitor monitoring surveys taking place along the byways. In addition, RSPB are unaware of any surveys that have taken place (Pers. Comm), which we would suggest they would know about, as they have been strong advocates of such a survey, as noted in their representations and SoCG.</p> <p>Please will the Applicant provide us with the alleged report relating to surveys taking place along byways 11 and 12 in the location of Normanton Down Reserve.</p>	
<p>11.1.9</p>	<p>18.2.1</p> <p>We understand the need for a consistency of land use in line with that used at the top of the cutting. This is why we are questioning the land management within this area. We take on board that it is common practice to cut grass along roadside verges and land adjacent to roads, but have health and safety concerns if the top of the cutting is proposed for mowing. If the grass tops of the deep cutting are to be long grass, and the grassland all around the remaining essential mitigation area is to be short early successional grassland, then there will be a distinct and unnatural difference in appearance of the area due to the grassland management regimes.</p>	<p>Please see response to item 34.1.1 in the Comments on any Further Information received at deadline 5 and 6 [REP7-021] – through the provisions of Requirement 8 of the DCO and the OEMP, grassland management will be able to be undertaken to minimise the risk of unnatural differences appearing.</p>

11.1.10	<p>18.2.2</p> <p>We acknowledge the Applicant's decision to explore alternative options to Compulsorily purchase in relation to the area around the western portal and green bridge 4 and look forward to a meeting to further these discussions. We are of the opinion that an alternative option would have benefits to both parties and could be agreed within a legal document.</p>	<p>See Agenda item 8 in the Written summaries of oral submissions made at the Compulsory Acquisition hearing held on 9th and 10th July 2019 [REP5-002]. The Applicant would welcome the opportunity to have a meeting to discuss an alternative agreement.</p>
11.1.11	<p>18.2.3</p> <p>As stated within our 8.31 response, we do not believe the Applicant is fully appreciating the water risks to our farming business. In the event that our water supply or quality is compromised during construction, or once the tunnel scheme is in operation, our farm reservoir only has capacity for 24 hours. Therefore, we would need an alternative source of water to be provided within one day or an emergency slaughter programme would have to be initiated. With this in mind, we believe that it is the Applicant's duty to undertake a feasibility study for the provision of temporary and permanent water supplies. This is not a "standard scheme" as referred to; "standard schemes" do not involve tunnelling yet alone tunnelling through a very complex geological area. Therefore, a "scheme of <u>this nature</u>" would carry a responsibility for the Applicant to carry out water feasibility studies so that prospective contractors are fully aware of all potential issues.</p> <p>The updating of OEMP Table 2.1 to include clause for the Agricultural Liaison Officer (ALO) to</p> <p>"establish measures to be implemented to maintain livestock water supplies" gives us no confidence. We have already provided a feasibility study of laying on water supplies to our business should this be needed, which highlights that it would not be possible to implement emergency measures within 24 hours. Added to this, there is no mention of what the ALO will do with the water network</p>	<p>As stated in Submission – 8.18 Comments on Written Representations [REP3-013], the risk to the Hosier boreholes has been fully assessed. The sensitivity of the borehole receptors is considered to be high which is in acknowledgement of the reliance on and quality of the abstracted water. No impact is anticipated, nevertheless, work is ongoing to access the Hosier boreholes so that monitoring of water levels and water quality can be undertaken before construction commences. The boreholes will form part of the ongoing programme of monitoring.</p> <p>Highways England considers that the protections within the OEMP are sufficient and appropriate, including the provision of a Water Supply Statement as set out at item MW-COM6, which provides for liaison and engagement with landowners in respect of their water supplies, including in respect of temporary re-provision.</p> <p>With regard to the comment on 'standard schemes' please see response in deadline 7 Submission - 8.44 - Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-21] paragraph 5.3.3. It states that the approach is standard for such a scheme, i.e. a tunnelling scheme. It has not taken the approach to and does not refer to a generic "standard scheme" and we hope this point is now completely clear in this response.</p>

	<p>information he will have collected, so this is merely a box ticking exercise.</p> <p>We do not believe OEMP {REP4-020} MW WAT11 is adequate to mitigate potential problems with our farm supply. See our response to Examining Authorities Second Written Questions at Deadline 6, Ag.2.10.</p>	
11.1.12	<p>18.2.5</p> <p>We stand by our reply to Comments received to Deadline 3 [REP4-036] item 9.4.6</p> <p><i>“We have concerns over the accuracy of the Conceptual site models used to assess the water movement within the geology of the Scheme landscape. See M & R Hosier Written Representation, Appendix 2 Groundwater Concerns – Report by Sweetwater Resources 2] Pages 2 to 6, Paragraphs 6.1 to 6.13 Paragraph 6.12 The model does not predict water levels to an accuracy which guarantees that there will not be a reduction of yield from boreholes during periods of low groundwater in summer, or that there will be no contamination. Therefore, HE is wrong to say there is zero risk to the water supply of Boreland and Westfield Farm. Mortimore et al Proc. Geol Assoc 2017 Figure 26 notes presence of many high permeability sub-horizontal fissures (dipping to the south) in the location of Stonehenge Bottom. As the tunnel is below the water table in this location and the exact location of the fissures will never be known unless the whole of the area is surveyed by core samples every few meters, it is not possible to assess the full damming effects that a tunnel will cause. Claims that the water will flow round cannot be accurately known until the tunnel is in place. There is a massive potential for the tunnel to alter groundwater flows far beyond the survey area.”</i></p>	<p>Please see response to item 11.1.3 in the Comments on any Further Information at deadline 4 [REP5-003] which explains that a conservative approach to modelling has been undertaken to simulate the effects of the Scheme on regional groundwater flow and sensitive receptors.</p> <p>The model has been refined in the area of the tunnel with data from pumping tests and preferential flow horizons have been considered using geological, geotechnical and geophysical data. It is therefore considered that the approach to modelling is robust and sound.</p> <p>The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors, the lowest groundwater levels on record, from the 1976 drought. Baseline surveys to date [AS-019] support the conceptual model and numerical modelling approach.</p> <p>The environmental assessment approach has been reviewed and considered appropriate by the Environment Agency and Wiltshire Council’s peer reviewers. This includes the interpretation of the significance of geological horizons for groundwater flow.</p>

11.1.13	<p>18.2.7</p> <p>We remain concerned that suitable fencing is noted as being a matter in consultation with HMAG,. With this in mind, there is every chance that it will be aesthetically pleasing to heritage organisations rather than fit for purpose, ie to keep trespassers out. We would also respectfully point out that any fencing intended to be located adjacent to our land will require consultation and agreement from ourselves as well.</p>	<p>Please refer to the Applicant's response to the Examining Authority's Second Written Question De.2.3 [REP6-023] which outlines the process for consultation with stakeholders on fencing and safety measures at the cutting. In addition to the measures discussed in that response, the Applicant notes that measure MW-COM3 of the OEMP requires liaison with landowners, occupiers and agents, as appropriate, to establish fencing requirements both during and after construction.</p> <p>MW-COM3 "Liaison with landowners: The main works contractor, through the Agricultural Liaison officer (ALO), shall liaise with landowners, occupiers and agents, as appropriate, to establish: a) measures to be implemented to maintain livestock water supplies which may be affected due to construction works; b) fencing requirements both during and post-construction; c) locations of potential carcass burial sites"</p> <p>At deadline 8, the OEMP has been updated to provide for the ALO to liaise with the SDCG, which will enable agricultural requirements to be taken into account in respect of fencing.</p> <p>In addition, it should be noted that principle P-PRoW2 of the OEMP [AS-085] explains that "Timber posts and strained wire fences to be used to separate PRoWs from adjacent private land in accordance with Highway Construction Details in the Manual of Contract Documents for Highway Works (MCHW) and Design Manual for Road and Bridges (DMRB). Where necessary for adjacent land use, appropriate stock-proof netting to be added to strained wire fences."</p> <p>Where appropriate, fencing requirements of landowners are being recorded as part of the Position Statements.</p> <p>These references and commitments demonstrate that there is appropriate provision for engagement with adjacent land owners for all purposes.</p>
11.1.14	<p>18.2.9</p> <p>The Applicant notes that the agricultural land at Parsonage Down will never be restored to agricultural status following the deposition of chalk from the tunnel boring machine, although it is deemed suitable for chalk grassland. We acknowledging that chalk grassland does</p>	<p>The restoration of land will be as set out in the Soils Management Strategy which will be prepared by the Contractor. This will be based on the Outline Soils Management Strategy included in Annex A.3 of the OEMP issued at deadline 8. The land forms part of the scheme landscape mitigation provision, therefore, material deposited will not be subject to structural compaction. The</p>

	<p>not require a nutrient rich topsoil, but it does require a good structure to allow drainage and root penetration or grass will not grow. There is also the risk that compacted areas will act like dew ponds, collecting water that is unable to penetrate through the geology in its post Scheme structural status. We have concerns that once the ground is remodelled the whole of the ground structure will be altered beyond all foreseen knowledge with implications to groundwater recharge. The existing fissures within the area will be compromised over a large area with devastating consequences to abstractors in the surrounding area.</p>	<p>fill placed will be the product of the Slurry Treatment Works, which will be ‘cakes’ of, predominantly, silt-sized chalk material. The material will be placed by dump trucks, and the only proposed compaction will be by the plant employed to place and spread the fill, i.e. the dump trucks and the dozers. It is expected that low ground pressure plant will be employed for this purpose to prevent over-compaction of the fill and to ensure that an open, permeable fill structure is maintained.</p> <p>Through the Water Management Plan, Groundwater Management Plan and the Soils Management Strategy measures in the OEMP, the risks suggested by Mrs Hosier will be able to be avoided - noting in particular the Outline SMS submitted at deadline 8 has now been updated to reflect the need for drainage characteristics to be taken into account in developing detailed soils restoration strategies.</p> <p>The placement of the material and very limited extent of compaction will produce a more open permeable structure. Even if there are some localised areas of compaction these will not affect groundwater recharge, as the runoff generated from surface compaction will recharge locally beyond the compacted works area. Recharge is on a catchment scale; groundwater levels are not dependent on recharge on a scale such as a construction site.</p>
<p>11.1.15</p>	<p>18.2.9</p> <p>The Applicant refers to construction traffic keeping within the footprint of the Scheme, yet when Parsonage Down is to be modelled with the tunnel spoil, there will be traffic movements from vehicles heavier in weight than agricultural machines that will be running over the ground compacting each successive layer of tunnel spoil. The consequences of this remodelling work, with heavy industrial plant on the structure of this area and groundwater recharge, are completely unknown.</p> <p>We challenge the Applicant’s statement that the particle size of the chalk fines are no smaller than that of topsoil and subsoil. Chalk, clay and silt are the building blocks of soil particles, which combine with organic matter to form soil particles. It is a known fact that</p>	<p>Please see paragraph 11.1.14 above with regard to soils, restoration and groundwater recharge.</p> <p>Highways England confirms that by adopting industry good practice measures, the risk of particulate pollution of watercourses would be reduced to an acceptably low level. The OEMP [AS-085] includes a requirement to control particulates in surface water run-off (MW-WAT6), as follows:</p> <p>“The main works contractor shall adopt measures to prevent the deposition of silt or other material in any existing watercourse, lake, borehole, aquifer or catchment area, arising from work operations. The measures will accord with the principles set out in industry guidelines, including CIRIA’s report C532: Control of water pollution from construction sites, and GPP 5: Works and maintenance on and near water.”</p>

	<p>heavy rains from summer thunderstorms, when falling on cracked sun baked ground, carry a risk of washing fine silt particles combined with organic matter down into fast flowing fissures, which have the potential to pollute the water courses.</p> <p>Similarly, modern agricultural machinery is designed with low ground pressure tyres to prevent damage to the soils structure which we rely on to maximise our cropping potential. Construction traffic is of greater weights than agricultural machinery.</p>	<p>With respect to the concerns expressed regarding silt washing into fissures and, potentially disrupting or polluting groundwater flow, we would comment as follows.</p> <p>"Chalk, clay and silt" are not the "building blocks of soil particles". Soil is built up from a variety of particles of assorted sizes. Those particles are derived from a variety of sources; some are the product of weathering of the parent rock present in the region, others from material that has been transported to the location by diverse natural processes over many thousands of years (wind, glaciation, river transport, pre-historical ocean currents, etc). The terms 'clay', 'silt' and 'sand', which refer to the size of the individual particles, are defined in Table 7 of BS5930:2015.</p> <p>The weathered chalk (Classes Dm and Dc), which is found below the topsoil and subsoil in many of the boreholes excavated in the Winterbourne Stoke area, is composed of particles of clay, silt and sand. The site-wide data presented in the Preliminary GIR, which is included in the ES, demonstrate the wide range of particle sizes within this grade of chalk, ranging from clay (<0.002mm) to gravel (<60mm). A similar range of particle sizes is reported for all the superficial materials present across the site above the structured chalk rock at depth. What this means is that the smallest particles that will be present in the chalk fill are no smaller than those that are already present in the materials that are currently present at shallow depth across the site.</p> <p>For silt sized material to be washed into fast flowing fissures via "cracked sun baked ground", requires the "fast flowing" fissures to be within the depth of a tension crack from the surface. No such fissures have been found.</p>
11.1.16	<p>18.2.10</p> <p>We thank the Applicant for informing us about the Agricultural Land Classification situation. We would ask for a copy of this report as well as the survey carried out in 2018 on areas that were not included in the 2003 survey.</p> <p>From this we understand that there have been no surveys carried out in respect of soil nutrient status. As it is the "good heart" of the soil that is as important as its classification and structure, we do not</p>	<p>As noted in Table 2.1 of the Outline Environmental Management Plan (OEMP), the Agricultural Liaison Officer (ALO) will coordinate the provision of the detailed pre-construction condition soil surveys to agricultural landowners and occupiers.</p> <p>The agricultural land classification was undertaken in accordance with the recognised guidance produced by MAFF in 1988 (Agricultural Land Classification of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land, HMSO, 1988). The methodology provides "a framework for classifying land according to the extent to which its</p>

believe that the Applicant will take this into account when discussions with the District Valuer finally take place.

We would like to know what the Preconstruction Soil Statement will include and would wish to have a copy of this report when it is completed as well as a copy of the Record of Condition Surveys.

With no surveys to take place on soil fertility, how can the Applicant say that soil restoration will be to the pre Scheme status?

physical or chemical characteristics impose long-term limitations on agricultural use”.

The nutrient status of the soil does not “*affect ALC grading where nutrient levels can be maintained or corrected by normal applications of fertiliser or lime. Chemical factors will only affect grading where they have, or are likely to have, a detrimental long-term effect on the physical condition of the soil, the crop yield, the range of crops that may be safely grown, stocking rates or grazing management”.*

No nutrient analysis is therefore necessary to establish the ALC of a site. However, samples will be taken, in advance of works taking place, for nutrient analysis of topsoils and upper subsoils in areas to be affected by temporary works that will be returned to agricultural use in order to establish the baseline nutrient conditions and provide a specification for the nutrient status of the topsoil once returned to the landowner.

The Outline Soils Management Strategy (OSMS) (Annex A.3 to the OEMP) identifies that the Contractor shall prepare a detailed Soil Resource Plan for all land parcels within the Scheme where the soil resource will be disturbed for either temporary or permanent works. For land affected by temporary works, the purpose of the Soil Resource Plan is to accurately record the existing soil resources within each land parcel that is to be used temporarily in the construction of the Scheme. This will then be used to inform Preconstruction Soil Statements (refer to items PW-COM2 and MW-COM4 of the OEMP) to provide a specification for its restoration following the construction period.

Paragraph 2.1.3 of the OSMS indicates that the Soil Resource Plan shall identify:

- a) the texture of each soil horizon present;
- b) the depth of each soil horizon;
- c) the colour of each soil horizon;
- d) the stone content of each soil horizon;
- e) the pH, organic matter and major nutrients of the topsoil horizon;

		<p>f) the pH, organic matter and major nutrients of the upper subsoil horizon; and</p> <p>g) the Agricultural Land Classification (ALC) grade.</p> <p>The Contractor shall be responsible for ensuring adequate data is available for the Soil Resource Plan including collecting data on organic matter content and major nutrients.</p> <p>The data on the physical attributes (texture, depth and stone content) shall be collected at an observation density of one observation per hectare (ha). The data on organic matter content and major nutrients shall be collected at a density of one sample per 3ha or, if the land parcel is smaller than 3ha, one sample per land parcel.</p>
<p>11.1.17</p>	<p>18.2.11</p> <p>We thank the Applicant for providing more information and directing us to the Soil Management Strategy to enable better understanding.</p> <p>We note that there is also to be a Pre-construction Soil Statement. Please can you direct us to where we would find out more information as to what this Statement will entail. We would ask to have a copy of the Pre-construction Soil Statement when it is completed.</p>	<p>Please see response to item 8.2.1 in the Comments on any Further Information received at deadline 5 and 6 [REP7-021].</p> <p>PW-COM2 and MW-COM4 of Table 3.2a of the OEMP indicates that:</p> <p>The preliminary works and main works contractors shall produce Preconstruction Soils Statements for areas of agricultural land within individual land holdings that will be temporarily occupied during the construction of the Scheme. These shall provide a baseline schedule of soil condition against which the restoration of the soil will be assessed. The statements shall identify soils resource topsoil and subsoil unit plans and shall include, as a minimum, all pre-construction soil survey information obtained to inform the ES, the development of the Soils Management Strategy (refer to PW-GEO3 and MW-GEO3) and the information gathered from the record of condition surveys (refer to item PW-COM3 and MW-COM8).</p> <p>Paragraph 2.1.3 of the OSMS indicates that the Soil Resource Plan shall identify:</p> <ul style="list-style-type: none"> a) the texture of each soil horizon present; b) the depth of each soil horizon; c) the colour of each soil horizon; d) the stone content of each soil horizon;

		<p>e) the pH, organic matter and major nutrients of the topsoil horizon;</p> <p>f) the pH, organic matter and major nutrients of the upper subsoil horizon; and</p> <p>g) the Agricultural Land Classification (ALC) grade.</p> <p>Data on the physical attributes (texture, depth and stone content) shall be collected at an observation density of one observation per hectare (ha). The data on organic matter content and major nutrients shall be collected at a density of one sample per 3ha or, if the land parcel is smaller than 3ha, one sample per land parcel.</p> <p>The Pre-Construction Soil Statements will be made available to landowners once completed and prior to the commencement of construction.</p>
11.1.18	<p>18.2.14</p> <p>We are concerned that a lot of responsibility is being placed onto the main works contractor to complete numerous reports:</p> <p>Soil Resources Plan, Preconstruction Soil Statement, Record of Condition survey, Soils Management Strategy, Soils Management Plan.</p> <p>As the main works contractor has not been part of the Scheme, feeding in for necessary survey work, they will only be using the information provided for them by the Applicant. We do not believe that it is right that the Main Works Contractor shoulders all this responsibility, when it is the Applicant that is proposing the Scheme, having carried out all the survey work prior to Scheme construction. There is the risk that not only will the Scheme will be delayed due to unforeseen problems, but also construction costs will spiral out of control.</p>	<p>This approach is entirely appropriate for a Scheme of this nature. The aforementioned plans are to be reviewed and approved by the Authority (and the Secretary of State for the Soils Management Strategy) following consultation with relevant stakeholders. These will therefore have the appropriate level of scrutiny required to ensure the contractor is undertaking the works in accordance with the provisions of the DCO. The risk that Scheme will be delayed or that construction costs will spiral out of control is no more than that of any other significant infrastructure project.</p>
11.1.19	<p>18.2.16</p> <p>The approach to the gates must be wide enough to negotiate gates when turning with long trailers to avoid vehicles getting wedged between the gateposts or eroding the surface edge of the byway in</p>	<p>As stated within P-PRoW4 of the OEMP [AS-085], "No gates on byways open to all traffic. On restricted byways full width gates with Kent Carriage Gaps to be used based on details in the Manual of Contract Documents for Highway Works - Highway Construction Details, and in accordance with the Design Manual for Roads and Bridges and the relevant elements of the 'Advice on</p>

	<p>an attempt to get adequate space for turning. Erosion at the edge of the byway will lead to the byway surface being ripped up or developing deep potholes to the sides.</p>	<p>Gate installation' and 'Advice on Vehicle Barriers' published by the British Horse Society.</p> <p>Gates to be sufficiently wide and appropriately placed to accommodate authorised users as necessary, including agricultural vehicles and other agricultural machinery and appropriate locking measures to be employed to ensure that those entitled to exercise rights of vehicular access over restricted byways would be capable of doing so freely. Equestrian gates to be provided on bridleways, while on footpaths, pedestrian gates would be installed."</p> <p>All the new Public Rights of Way (PRoW) proposed along the length of the Scheme would be constructed in a way that will make them fit for all the uses permitted by their designated status, as stated in principle P-PRoW1.</p>
11.1.20	<p>18.2.17</p> <p>UNESCO Convention Concerning the Protection of The World Cultural and Natural Heritage World Heritage Committee 43rd session 30 June-10 July 2019 adopted unchanged its Draft Decision on the proposals for the A303 Stonehenge tunnel scheme (24th June -4th July 2018 in Manama).</p> <p>WHC/19/43.COM/7B Page 205 under Draft Decision: 43 COM 7B.95 item 4:</p> <p><i>Notes with concern, that although the current scheme, which is now subject to the Development Consent Order (DCO) examination process, shows improvement compared with previous plans, it retains substantial exposed dual carriageway sections, particularly those at the western end of the property, which would impact adversely on the Outstanding Universal Value (OUV) of the property, especially its integrity, and therefore encourages the State Party to not proceed with the A303 route upgrade for the section Amesbury to Berwick Down project in its current form;</i></p> <p>The above passage is contrary to the Applicants statement that "Integrity" of the WHS has been fully considered, and notes the</p>	<p>Regarding the recommendations of UNESCO / ICOMOS and the World Heritage Committee, Highways England has fully considered these in relation to the Scheme which includes features and controls that have been put in place in response to those recommendations. See the Applicant's Comments on any further information requested by the Examining Authority and received at deadline 4 [REP5-003, para. 10.1.3; para. 11.2.28].</p> <p>See also the Applicant's written summary of oral submissions made at the Issue Specific Hearing on Cultural Heritage on 5th and 6th June 2019, with respect to Agenda item 3(v) in the written summary of oral submissions from the hearing [REP4-030] at which Mr Nichol of the Department of Culture, Media and Sport (DCMS) reported that the view of DCMS was that the then draft decision amplifies the perceived negative impacts of the Scheme and does not adequately reflect the extent to which the World Heritage Committee's 2018 decision had been taken into account by DCMS as the State Party and Highways England.</p> <p>The Applicant also refers to its written summary of oral submissions made at the most recent issue specific hearings on 21 August 2019, where the July 2019 decision of the World Heritage Committee was discussed at Agenda Item 3.2. The Applicant's written summary of oral submissions made at that hearing (submitted at Deadline 8) records the Applicant's (and DCMS's) response to the decision, including the points referred to in this written submission. Submissions at the hearing related to the test that the World</p>

adverse impact that the Scheme would have on the OUV. The document continues under point 5.

Urges the State Party to continue to peruse design solutions which reduce further the impact on the cultural landscape and OUV of the property through longer tunnel sections, so that the western portal is located outside the property.

This highlights the significant negative impact the proposed Scheme will have on both the cultural landscape and the OUV which is contrary to the Applicants statements.

The Government is responsible for the final decision for the Scheme to proceed, but under the Governments obligations to the World Heritage Conventions (Article 4), constructing the Scheme as proposed would be in breach of its international obligations.

For all the above reasons we cannot agree with the Scheme in the current proposal. Covering the exposed deep cutting would comply with OUV criteria, but removing the scheme to a surface route outside of the WHS would both comply with OUV criteria and remove issues with groundwater impacts.

Heritage Committee appeared to apply and the evidence available to the World Heritage Committee, compared with the far more detailed evidence before the Examining Authority and Secretary of State, including with respect to the consideration of longer tunnel alternatives.

With regard to the integrity of landscape and cultural heritage see Highways England's response to Second Written Questions on Landscape and Visual, specifically LV.2.1 [REP6-030]. See also the Applicant's written summary of oral submissions made at the issue specific hearing on 21 August 2019 (submitted at deadline 8) with respect to Agenda Item 3.1(i).

With regard to a longer tunnel, see Highways England's response to Written Questions AL.1.29 – 32 inclusive [REP2-024] which explain the longer tunnel options that were considered in response to UNESCO/ ICOMOS comments and explain why they were determined to be less preferable than the Scheme option by reference to a full appraisal on a range of grounds. Highways England (and DCMS in its State of Conservation Report submitted to the World Heritage Centre in February 2019) has explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the WHS, and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified (see [REP1-015] (which is a 1 page letter from the DCMS, attaching a report entitled, "Stonehenge, Avebury and Associated Sites (United Kingdom) C373 bis"). The relevant section is part 2 of the said report, in the fifth paragraph) and also see [REP5-003], paragraph 11.2.28).

With regard to a surface route outside of the WHS, the basis of the decision not to select route F10 is summarised in Highways England's responses to Written Questions AI.1.11, 12 and 13 [REP2-024], See also Comments on Written Representations at Deadline 3 [REP3-013, response to questions 3.1.17, 16.2.26, 21.2.32 and paras 24.1.26 – 35] The Applicant notes that whilst ICOMOS and the World Heritage Committee have previously referred to an alternate surface route, this option is no longer pursued by ICOMOS or the World Heritage Committee and is not referred to in the recent decision.

Regarding compliance with international obligations, please see response to item 11.2.25 in the Comments on any Further Information at deadline 4 [REP5-003], the Applicant's response to Written Question G.1.1 [REP2-021], the Applicant's Written Summaries of oral submissions at Cultural Heritage

		<p>Issue Specific Hearings (ISH2) [REP4- 030] (specifically Agenda Items 3(i), 3(v), 3(vi) and Appendix A to that document), and the Applicant’s written summary of oral submissions made at the issue specific hearing on 21 August 2019 (submitted at Deadline 8) with respect to Agenda Item 3.1(i) and 3.2(ii). The Applicant does not agree with the assertion that consenting the Scheme as proposed would put the UK in breach of its international obligations.</p>
<p>11.1.21</p>	<p>18.2.18</p> <p>The Applicant has chosen to misinterpret the question. The footprint of the land where the western portal and the deep cutting of the approach carriageways are proposed, is on arable farmland. Therefore, it is not disturbing the archaeological remains of our cultural heritage and the impact on the OUV of the property. We would also like to draw attention to the fact that the current A303 infrastructure can be removed from the WHS whereas the deep cutting will not only destroy the integrity of the WHS, it can also not be removed. We therefore we deem it to be more damaging to the Property.</p> <p>Whilst recognising the measures that the Applicant has put in place at the western portal and deep cutting, there is still 800m of exposed dual carriageway and the western portal still remains within the WHS. UNESCO have already urged the Applicant not to proceed with this current design, and the Government would be in breach of its international obligations if it chose to disregard UNESCO’s advice and proceed.</p> <p>We would prefer to see the upgraded A303 to be located outside the WHS, rather than choose a longer tunnel or cut and cover of the exposed carriageway, as this will solve our issues with groundwater impacts on our farm borehole supply. However, removing the road from the WHS will not prevent potential negative impact on the Stone curlews at Normanton Down Reserve from any increase in recreational pressures as a result of the Scheme.</p>	<p>See Highways England’s response to Second Written Questions on Landscape and Visual, specifically LV.2.1 [REP6-030].</p> <p>The existing A303 is assessed as having a negative impact on OUV [see APP-195, Section 9.1, Impacts and effects of existing A303 on Attributes of OUV]. The Applicant acknowledges that the cutting itself will retain an adverse impact to the landform within the Stonehenge, Avebury and Associated Sites World Heritage Site, as set out in paragraph 7.9.44 and 7.9.45 of APP-045. However, the Applicant remains of the view that the proposed Scheme is the optimal solution both to the transport problems on the A303 and delivering benefits to the WHS.</p> <p>With regard to reversibility, please see Comments on Written Representations at deadline 3 [REP3-013, paragraphs 21.3.21 - 24]. In summary, it is highly unlikely that the Scheme would be demolished after its design working life (not less than 120 years) as the road would have become an integral part of nationally important infrastructure. However, the Heritage Impact Assessment (HIA) [APP-195], section 9.2 explains how the tunnel and associated road infrastructure may, theoretically be decommissioned at some point in the future.</p> <p>Regarding the decision of the UNESCO World Heritage Committee, international obligations, a longer tunnel, and a surface route outside the WHS, please see paragraph 11.1.20 above.</p> <p>Regarding Stone Curlews, please refer to paragraph 11.1.4 above, which states that the stone curlew plot provisions will provide a net gain of optimal stone curlew nesting opportunities.</p> <p>With respect to the positioning of the western portal outside the WHS - this has been considered in Highways England’s previous submission to the</p>

		<p>Examining Authority in our response to Written Question AL.1.29 [REP2-024]. In summary, there is no evidence that the additional investment required to extend the tunnel length would deliver meaningful additional benefits to the WHS that would justify the additional cost and other land and consequential effects.</p> <p>With respect to groundwater, please see response to item 11.1.3 in the Comments on any Further Information at deadline 4 [REP5-003] which explains that a conservative approach to modelling has been undertaken to simulate the effects of the Scheme on regional groundwater flow and sensitive receptors. The model has been refined in the area of the tunnel with data from pumping tests and preferential flow horizons considered using geological, geotechnical and geophysical data. Baseline surveys to date [AS-019] support the conceptual model and numerical modelling approach. It is therefore considered that the approach to modelling is robust and sound.</p> <p>The Groundwater Risk Assessment [APP-282] considered the worst case for effects on water levels at receptors, the lowest groundwater levels on record, from the 1976 drought, and no significant impacts are predicted at private supply boreholes.</p>
<p>11.1.22</p>	<p>18.2.18</p> <p>The Applicant has an unrealistic approach to the archaeological remains along the line of the western approach and western portal. The “<i>detailed archaeological excavation and recording prior to construction</i>” will, due to the Applicants inflexible time table, be reduced to a level that only permits a basic investigation. This is akin to excavations that would take place for a car park in an area of little known archaeology. The quality of the excavations prior to Scheme construction need to be of WHS standards and agreed in advance with UNESCO.</p> <p>The Applicant concludes that there will be an improvement to the setting of the AG12 Winterbourne Stoke Crossroads barrows by removing the A360, but the A303 is still within the WHS all be it 150</p>	<p>Highways England disagrees that it ‘has an unrealistic approach to the archaeological remains along the line of the western approach and western portal’. Highways England has engaged regularly with key heritage stakeholders, throughout the Scheme’s development, including through the Heritage Monitoring and Advisory Group (HMAG), which includes Wiltshire Council, Historic England, National Trust, and English Heritage, and the Scientific Committee of eminent archaeological experts. Their involvement will continue up to and through construction and is secured as part of a Detailed Archaeology Mitigation Strategy (DAMS) [REP7-019, a revised version of which is submitted at deadline 8], which has been developed in consultation with Wiltshire Council and HMAG and which is secured by paragraph 5 of Schedule 2 of the draft Development Consent Order [REP6-005]. The draft DAMS notes,</p> <p><i>“The Main Contractor will allow sufficient time for the archaeological monitoring, recording and excavation of the archaeological remains. The</i></p>

m south of its current alignment. Therefore, it will still be seen and heard, creating a negative impact of modern infrastructure on the OUV and integrity of the WHS property.

The Applicant is now saying that the “*limited archaeological remains*” are instead within the footprint of the western approach road, cutting and portal rather than in the alignment of the tunnel. Perhaps this is linked to the statements put out by the Applicant stating that “they had not found anything unexpected” during the archaeological excavations within this area. In fact, burials and large quantities of worked flint, along with other artefacts were removed and recorded from the site. All of these things would have been “expected” to have been found by the very nature of carrying out archaeological excavations among barrow cemeteries. In respect of the percentage

area of the Scheme footprint that was surveyed in 2018, the stated low level of burial activity will be significantly higher once the whole area is excavated prior to the Scheme commencing. Cremations are also human burials although this fact seems to have been omitted when stating the low levels of burials within the area. If the Applicant says the archaeological remains found are limited then they can return them to our care, including the exhumed skeletons and cremations.

TPA [Technical Partner’s Archaeologist] and the AcoW [Archaeological Clerk of Works] in consultation with Wiltshire Council and Historic England (and, for sites within the WHS, HMAG, will determine the scope of work and timetable for the completion of the investigation at each site.” [REP7-019, para. 6.5.3].

“Modification of the works specification may be required during the investigations to enable detailed recording to take place, and to allow adequate time within the construction programme in the event of important discoveries. In this situation a revised SSWSI will be prepared by the Archaeological Contractor in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG and approved by Wiltshire Council (in consultation with Historic England.), prior to works commencing in the area to which the SSWSI applied” [REP7-019, para. 6.5.4].

The Applicant disagrees that it has an ‘inflexible timetable’ or that investigation will be at a ‘basic’ level. With regard to timescales, at the ISH2 as recorded in relation to agenda item 7(i) & (ii) of the written summary of oral submissions [REP4-030], “Mr Taylor QC explained that the focus is on the identification of an approach to mitigation that is appropriate given the international status of the WHS and delivering the public benefits of the A303 scheme.” Appendix A.10 of the draft DAMS presents an indicative timeline for implementation of Preliminary Works and Main Works stage archaeological works. [REP7-019, Appendix A.10]. The draft DAMS submitted at Deadline 7 records that “*The Main Contractor will allow sufficient time for the archaeological monitoring, recording and excavation of the archaeological remains.*” [REP7-019, para. 6.5.3] (as already noted above), and “*The Archaeological Contractor will meet the set time frames in order that the post-excavation assessment, analysis and publication phases can be programmed and resourced properly, and so that the completion date for all construction and post-excavation works can be met.*” [REP7-019, para. 9.2.3]. The Scheme aims to deliver the majority of the archaeological works during the PW stage, and as a result it is expected that archaeology would be removed before the MW stage commences. Highways England is therefore content that the risk in terms of programme delay to construction from unexpected archaeological discoveries is inbuilt into the Scheme programme and will be managed through the way the works are being contracted. The

DAMS is secured by paragraph 5 of Schedule 2 of the draft development consent order [REP6-005]. Please see also the Applicant's response to Question CH.1.52 regarding unforeseen finds [REP2-025, pp. 5-83 to 5-84]

The Detailed Archaeological Mitigation Strategy (DAMS) [REP7-019] will be implemented as part of the Outline Environment Management Plan (OEMP) [August 2019 Revision 4 version of the OEMP [AS-085] submitted as part of the DCO application. The OEMP is updated at deadline 8.

All archaeological work has conformed to, and will continue to conform to, the Chartered Institute for Archaeologists' (CIfA) Standards and Guidance and has been undertaken in accordance with the relevant guidance, including DMRB Volume 11, Section 3 Part 2

(<http://www.standardsforhighways.co.uk/ha/standards/dmr/vol11/section3/ha20807.pdf>).

The quality of investigations will follow the methodologies as set out in the DAMS submitted at Deadline 8. As stated in paragraph 1.2.2 of the DAMS, *'the intention of the Strategy is to apply the highest practicable standards of mitigation, employing innovative approaches to address a question-based research strategy that places the significance of the archaeological resource at the centre of decision-making'*. As noted in the OEMP, "The preliminary works contractors (all) shall undertake the archaeological works, at all times, in accordance with the DAMS and DCO Requirement 5" [REP6-011, MW-CH2]. UNESCO, the World Heritage Committee, ICOMOS and ICOMOS-UK have no role in setting standards or monitoring fieldwork in England. As noted in the draft DAMS, "Wiltshire Council has a statutory role in relation to the archaeological works for the entire Scheme for the local planning authority as does Historic England in relation to designated heritage assets." [REP7-019, para. 1.3.3]. The DAMS has been prepared in full consideration of the Research Framework for the Stonehenge, Avebury and Associated Sites WHS (2016) (<http://www.stonehengeandaveburywhs.org/assets/Stonehenge-Update.pdf>), relevant earlier WHS research agendas, and applicable national and regional period-, materials- and theme-specific research agendas.

Visual and aural impacts have been assessed in ES chapter Chapter 7 - Landscape and Visual Effects [APP-045] and Chapter 9 - Noise and Vibration [APP-047] and are considered in the HIA [APP-195, paras. 5.2.10 & 5.3.24].

The footprint of the western approach road, cutting and portal is the area within which archaeological remains would be subject to direct physical impacts from construction, and therefore will be subject to archaeological mitigation. The significance of the evidence from the archaeological evaluation of the Western portal approach is addressed in Highways England's Comments on any further information requested by the Examining Authority and received at deadline 4 [REP5-003, items 34.1.2, 34.1.3, & 34.1.5] and Comments on any further information requested by the Examining Authority and received to Deadline 5 and 6 [REP7-021, para. 40.1.4]. With regard to the question of the anticipated number of burials, please see the Applicant's Comments on any further information requested by the Examining Authority and received to Deadline 5 and 6 [REP7-021, item 40.1.2 and 6.3.3 (2.2)].

The application is supported by a comprehensive archaeological evaluation. The Applicant has utilised the most relevant research themes and questions based on the results of the archaeological evaluations and has tailored these to be Scheme-specific; the Applicant has taken a precautionary approach and considered what potential archaeology may be uncovered by the Scheme, what research questions that archaeology could address and what investigative methods need to be applied and where in consultation with Wiltshire Council, Historic England and HMAG. The draft DAMS, as submitted at deadline 7 [REP7-019; paras. 6.3.36 – 6.3.52] is iterative in terms of the levels of sampling and the significance of the archaeological remains uncovered – it is a proportionate and reasonable strategy that has been developed in consultation with Wiltshire Council, Historic England and HMAG, and takes into account the potential for finding human remains and concentrations of finds.

According to the Forum on Information Standards in Heritage Monument Type Thesaurus, the term 'burial' includes both cremations and inhumations [http://www.heritage-standards.org.uk/wp-content/uploads/2019/03/Mon_alpha.pdf](accessed 05.09.2019). The term 'burial' has been used in this sense in all cultural heritage reporting associated with the Scheme.

With regard to the curation of archaeological remains, the draft DAMS states that "*The dissemination strategy will include the transfer of the complete*

		<p><i>project archive (site archive and research archive) to Salisbury Museum for long-term storage and curation. This will preserve the archive for use in future research projects and allow continued presentation of material to the public by the Museum.” [the DAMS as submitted at Deadline 8, para. 5.3.41].</i></p> <p>With regard to human remains, the DAMS submitted at deadline 8 states at paragraph 6.3.74 that <i>“At the end of the project the intention is that human remains that are not required to be re-interred under the provisions of the DCO (and which have therefore been subject to a direction from the Secretary of State), will be integrated into the project archive and deposited at Salisbury Museum with the rest of the project archive.”</i></p>
11.1.23	<p>18.2.18</p> <p>In relation to impact of vibration on Wilsford G1 and longbarrow NHLE 1008953 we note from the ISH5 the implementation of a bored tunnel is to preserve surface archaeology, so below surface archaeology was assumed to be collateral damage. The Scheme seems to always concentrate on what can be seen rather than considering the WHS as a whole including the below ground features. As Mr Macnab will be aware, G1 was not completely archaeologically excavated in 1960. The area was revisited for the 2002 Scheme where a further 20 satellite cremations were discovered in a small area to the side of the barrow. For this reason, we did not grant permission for the burial area to be disturbed by yet more archaeological surveys in 2018. ISH5 item 6 (iii) notes the TBM will be 18.5m below the surface in the location of the long barrow NHLE 1008953 yet there is no mention of how near it will be to the surface of G1 which is a mere 25 m from the western portal where the TBM is rising to the surface. We understand that the buried archaeology is held within a consolidated soil matrix but as the TBM rises to the surface the intensity of the shockwaves will increase as there will be less matrix to absorb the vibrations.</p> <p>We can see no reference as to what actions will be taken, should the vibration monitoring show that threshold levels have been exceeded</p>	<p>The Applicant restates that the design has been specifically chosen to limit the landtake for the construction of the Scheme both within and outside of the WHS in order to minimise the potential loss of archaeological remains.</p> <p>The western approach has been designed specifically to avoid physical impacts on these assets: the Western Portal position has been optimised at the head of the dry valley, avoiding impact upon the scheduled barrow (UID 2018/NHLE 1010832 (Wilsford G1)) and the long barrow 250m north of Normanton Gorse (NHLE 1008953). The Heritage Impact Assessment [(HIA) [APP-195, para. 9.2.8] notes that <i>“Significant impacts due to construction vibration are not anticipated, however, in the absence of specific criteria regarding construction vibration impacts on barrows and as a precautionary approach, monitoring at this feature is proposed during nearby tunnelling works.”</i></p> <p>The Applicant disagrees that <i>“the Scheme seems to always concentrate on what can be seen rather than considering the WHS as a whole including the below ground features”</i>. The Scheme has been subject to a comprehensive archaeological evaluation programme which provides a robust evidential baseline against which the Scheme impacts on heritage assets have been assessed. Below ground features have been considered extensively in the ES [APP-044, paras. 6.9.24 – 25 & 6.9.30], the HIA [APP-195, para. 5.6.2(d)], and fully taken into account throughout the draft Detailed Archaeological Mitigation Strategy (DAMS) [REP7-019] and updated for submission at deadline 8.</p>

at the various monitored heritage assets. What sort of “head interventions” would be employed on the TBM to reduce vibrations?

As noted in Environmental Statement Appendix 6.2 Archaeology Baseline Report [APP-211],

“The Wilsford G1 barrow (UID 2018) is of particular note, not just for being one of the few monuments of its type within the WHS to have been fully excavated in modern times, but also for the fact that it formed the nucleus around which an unusually large and important Early Bronze Age cemetery of the Beaker tradition developed.

William Cunnington and Sir Richard Colt Hoare targeted the Wilsford G1 barrow in 1805, uncovering a central grave containing an inhumation burial, a Beaker and stag antlers. The barrow was revisited in 1960, when rescue excavations were undertaken by Edwina Proudfoot, née Field, on behalf of the Ministry of Works (Anon. 1961). The barrow was fully excavated, revealing that the central grave had contained at least two inhumations and a cremation. A further seven burials of infants and one young adult were found on the north side of the barrow, several of which were accompanied by Beakers. The excavations demonstrated that the central grave had initially been surrounded by a small ditch and covered by a mound. A second ditch was later added outside the first, and the mound may also have been enlarged (Lawson 2007, 153–4). Works undertaken between 1998 and 2003 as part of the proposed A303 Stonehenge improvement uncovered two further inhumation burials immediately north of the area investigated in 1960, bringing the total number of individuals buried at the site to at least 13 (Leivers and Moore 2008, 25–30).” [APP-211, paras. 3.5.76 – 77]. M&R Hosier are therefore incorrect to state that ‘The area was revisited for the 2002 Scheme where a further 20 satellite cremations were discovered in a small area to the side of the barrow’.

The current Scheme did not pursue Scheduled Monument Consent for further intrusive evaluation of Wilsford G1 due to potential impacts on OUV: the application for Scheduled Monument Consent was withdrawn after it was agreed in consultation with HMAG that Wilsford G1 was located in an area to be preserved in situ. The withdrawal of the application was not due to Mr & Mrs Hosier refusing land access.

The Applicant’s Response to Written Question Ns.2.6 [REP6-031] identifies that an assessment of vibration impacts on archaeology is set out in

Appendix 6.1 Heritage Impact Assessment [APP-195], with supplementary detail provided at the Issue Specific Hearing as reported in the written summary [REP4-003] Agenda Item 6.iii. In summary:

- the identified barrows along the route of the tunnel that could be subject to vibration effects (where the tunnel is close to the surface) have already been excavated, either completely or in part, and backfilled removing potentially sensitive burials and artefacts;
- the identified barrows are unlikely to contain voids and have settled to their current position over approx. 5000 years;
- disturbance from previous/current activities including World War One airfield operations, agricultural ploughing and/or animal burrowing has occurred; and
- individual artefacts in the soil are usually fragmented. They are supported by the soil matrix, not surrounded by voids and therefore are much less sensitive to vibration than artefacts in the open air, display cases or with voids around them.

Specifically, in relation to Wilsford G1 barrow (NHLE 1010832), the Applicant understands that this barrow was fully and completely excavated in a rescue excavation in the 1960s; the burials within the enclosing barrow ditches and seven peripheral burials to the north were removed and the barrow ditches and the grave holes dug for the burials were backfilled [APP-211, paras. 3.5.76 – 77]. Two further satellite burials on the northern side of the barrow were excavated and removed during archaeological evaluations in 2003-4, which targeted two geophysical anomalies in this area. No other geophysical anomalies are noted in proximity to Wilsford G1 in the recent geophysical surveys. Furthermore, the completely excavated barrow is not directly above the tunnel, it is offset from the tunnel alignment slightly. The barrow lies outside the 1mm settlement contour and therefore the level of anticipated ground movement and settlement is minimal (less than 1mm).

As set out in the Applicant's response to Written Questions Ns.2.7 and Ns.2.8 [REP6-031] there is no standard threshold for construction vibration and settlement levels significantly affecting archaeological earthworks, such as burial mounds, due to the unique and varying sensitivity of such assets. This point is in agreement with Stonehenge Alliance (response to Ns.2.8, i) p. 11 [REP6-065]), ICOMOS (response to Ns.2.7 and Ns.2.8 p. 8 [REP6-054]) and

		<p>the Council of British Archology (response to Ns.2.7 and Ns.2.8, p. 69 [REP6-84]). Therefore, heritage assets including archaeology will be considered on a case by case basis, based on the final detailed design, tunnelling methodology and asset sensitivity. The Outline Environmental Management Plan (OEMP) in the latest version of the OEMP issued at deadline 8, MW-NOI5 requires the identification of potentially sensitive assets, actions to control or mitigate impacts (including monitoring) to be undertaken in consultation with members of HMAG. Vibration from tunnelling is also covered by the Ground Movement Monitoring Strategy required by items MW-G7 and MW-CH8 of the OEMP. As part of this strategy, the contractor is required to develop contingencies using a suite of tool box items that include: further investigation, assessment and monitoring during tunnelling, to identify measures to ensure the protection of assets. The term 'head intervention' applies to the provision to gain access to the cutting head for maintenance during the tunnel drive; on modern TBMs this can now be facilitated from within the tunnel horizon. Therefore, should any part of the cutting head require maintenance as mitigation for vibration this can be accommodated from within the tunnel.</p> <p>Monitoring of vibration and ground movement was further discussed at Issue Specific Hearing 8 on 21 August 2019, as reported in the Applicant's written summary (submitted at Deadline 8) in relation to Agenda Item 4.3 (iv).</p>
<p>11.1.24</p>	<p>18.2.19</p> <p>Irrespective of Wiltshire Council and National Trust comments that <u>not every</u> archaeological intervention within the WHS has 100% sampling, we stand by our initial statement that the Preliminary works phase archaeological excavations would require 100% evaluation of the topsoil. This will be the last time this precious area of the WHS will ever be excavated, to discover the hidden secrets of our cultural heritage. As already proven, a large proportion of important archaeological evidence are found within the topsoil, and as this is the WHS, evaluation needs to be of the highest level.</p> <p>Following the previous archaeological surveys carried out on our farm, which were overseen by Historic England, Wiltshire Council</p>	<p>Please see response to item 40.1.5 in the Comments on any Further Information Received at Deadline 5 and 6 [REP7-021] and the revised Ploughzone Artefact Collection strategy (fieldwalking and topsoil artefact sampling) in the draft DAMS [REP7-019, paras. 5.3.29 – 5.3.31; paras. 6.3.11 – 6.3.18; para. 6.3.30].</p> <p>With regard to the concept of 100% sampling, please see Highways England's previous response to Mark Bush for Consortium of Archaeologists in Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003, para. 34.1.17 & 34.1.32] and Highways England's response as recorded in its written summary of oral submissions made at ISH2 in relation to agenda items 7 (i) and (ii) [REP4-030] regarding the developing sampling strategy for the ploughzone artefact scatters as set-out in the draft DAMS submitted at Deadline 4 [REP4-024]. This was also discussed at the issue specific hearing on 21 August 2019, as recorded in the</p>

and HMAG, we have no confidence that the surveys will be carried out in a manner befitting the WHS. Bags of archaeological finds were left on site, along with archaeological equipment and no care was taken in reinstating the ground afterwards.

Applicant's written summary of oral submissions in relation to Agenda Item 5.4 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained. The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS.

With regard to sampling, please see the Applicant's deadline 7 Comments on any further information requested by the ExA and received to Deadline 5 and 6 [REP7-021, para. 13.2.14, p. 161]. Highways England acknowledges that, in some areas, a sample of up to 100% of the artefact content of the ploughsoil may be required, combined with a systematic sample to capture background distributions and transitional areas. Please see the Applicant's Deadline 5 Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, p. 11-96, item 11.2.26, pp. 11-79 to 11-81 & item 11.2.32, pp. 11-90 to 11.91].

With regard to reinstatement and 'bags of archaeological finds left on site', see the Applicant's Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003, para 5.2.6], '*All other matters, from the Applicant's perspective, were dealt with in a respectful and open manner during on-site discussions with the land owner at the time of the surveys and resolved as far as possible, including suitable compensation paid where required*'.

Regarding the comment that M&R Hosier make with regards to having 'no confidence that the surveys will be carried out in a manner befitting the WHS', the Applicant disagrees with this comment. As set out at paragraph 1.2.2 of the DAMS submitted at deadline 8 '*The Scheme passes through a landscape of high archaeological significance, both inside and outside the WHS. Accordingly, the intention of the Strategy is to apply the highest practicable standards of mitigation, employing innovative approaches to address a question-based research strategy that places the significance of the archaeological resource at the centre of decision-making both at design and implementation phases.*' It is therefore the Applicant's intention to apply the highest possible standards to the archaeological mitigation works, which are as set out in the DAMS submitted at deadline 8, and that the archaeological

		<p>mitigation will reflect the landscape of high significance through which the Scheme passes.</p>
<p>11.1.25</p>	<p>18.2.20</p> <p>We thank the Applicant for their explanation, but are alarmed to discover that, in the event that trigger levels are encountered, ground stabilisation in the form of grouting in the ground ahead of the TBM could be used. Once again, we note that the main works contractor is responsible for yet more surveys in the form of a Ground Movement Monitoring Strategy.</p> <p>We feel this is yet another example of where a 3D Fracman ground model would provide information ahead of the TBM, enabling the structural geology and fissure layout to be known in advance. Failing to carry out such a 3D model is hindering the main works contractor in the deliverance of the Scheme.</p>	<p>Please see Highways England’s previous responses as follows referring to ground stabilisation and the use of 3D ground modelling:</p> <ul style="list-style-type: none"> - Written Summary, Issue Specific Hearing (ISH) Cultural Heritage, item 7iii [REP4-030] - Written Summary, ISH Flood risk, Groundwater Protection, Geology and Land Contamination, item 5.1 [REP4-032] - Second Written Questions (SWQ), Noise and vibration effects, specifically Ns.2.8 [REP6-031]. - SWQ, Flood risk, Groundwater Protection, Geology and Land Contamination specifically Fg.2.38, Fg.2.40, Fg.2.51 [REP6-028]. <p>Ground stabilisation by grouting from the tunnel horizon in advance of the TBM was explained at the ISHs [REP4-030, REP4-032] and is one of the standard suite of ‘toolbox’ measures that the contractor may elect to use to deal with ground movement. The preliminary design has been prepared in accordance with the ‘Joint Code of Practice for the Risk Management of Tunnel Works’ and taking full cognisance of the Construction (Design & Management) Regulations and BS6164 Code of Practice for Safety in Tunnelling. The Applicant considers that it is neither unusual nor is it unacceptable to require the expert Contractor to plan and take responsibility for the continuation of investigations as part of the detailed design and their further risk management and procurement of the works. This includes the completion of the Ground Movement Monitoring Strategy required by items MW-G7 and MW-CH8 of the OEMP.</p> <p>The matter of 3D geology modelling was explained at the ISH [REP4-032] and dealt with comprehensively in the response to SWQs Fg.2.38, Fg.2.40 & Fg.2.51 [REP6-028], which confirm the Applicant’s view that the information presented in the Environmental Statement is more than sufficient at this stage of the consents process and that a 3D model is not required. A proportionate approach has been taken to characterise the variable nature of the geology employing experts in this field including Professor Rory Mortimore. 3D geology modelling is not standard practice at this stage of the preliminary</p>

		<p>design as evidenced by cross-reference to recent major tunnelling projects including Crossrail, Thames Tideway and Silvertown Tunnel.</p> <p>In summary, whilst the Applicant recognises the risks associated with the geology and hydrogeology at Stonehenge and the unique nature of the archaeology within the WHS, a 3D ground model is not considered necessary at this stage as it will not change the choice of a closed-face Tunnel Boring Machine as part of the risk management of the project. Furthermore, the high density of additional boreholes required to construct a competent 3D Geology model will not make a significant difference to the alignment which is constrained by the Scheme's location within the historic environment, existing topography and road layout. We therefore maintain our view expressed at ISH4 that a 3D geology model would be an academic 'nice to have' but is not necessary to inform the preliminary design as assessed in the Environmental Statement in support of the DCO and has not been considered necessary at the pre-consents stage of comparable major tunnelling infrastructure projects, including in locations with chalk.</p>
<p>11.1.26</p>	<p>18.2.21</p> <p>We stand by all our comments made in 18.2.21. The Applicant has throughout consultation, wilfully promoted private land on the southern part of the WHS for roaming and exploring, omitting to state that there will be no access to monuments, only viewing via the network of existing byways. At no time have they sought to clarify that although the northern part of the WHS, being owned by the NT is open access, the southern part is privately owned and therefore not accessible on completion of the Scheme. In so doing, the Applicant has knowingly put the Normanton Down breeding Stone curlew pairs under threat due to potential increased recreational disturbance. This is contrary to Habitat Regulations.</p> <p>The Applicant is already fully aware that fencing along byways 11 and 12 does not prevent the public accessing private land or those wishing to deliberately trespass. The Applicant has documented this</p>	<p>With regards to the stone curlew impact, please refer to the paragraph 11.1.4 above which states the measures offered to avoid impacts on stone curlews.</p>

	<p>within the Habitats Regulations documents in respect of negative impact on breeding Stone curlews.</p> <p>Consultation materials were inaccurate and misleading to the general public, as well as putting our private farm business and the Stone curlews at risk.</p>	
11.1.27	<p>18.2.22</p> <p>We stand by our comment above, by increasing the numbers of people into the landscape this will have a negative effect on the wildlife already present within these areas.</p> <p>Potential for recreational disturbance from use of byways 11 and 12 has been noted in the environmental assessment with its negative effects on the nesting Stone curlew pairs on Normanton Down.</p> <p>Green bridge 4 may provide public access, but as previously stated, the views from Green bridge 4 will be of the traffic in the deep cutting and looking into the western portal, which the Applicant has failed to produce photomontages for. Green bridge 4 will be short grass alone with no hedge planting, so will be of limited biodiversity. The chalk grassland around the cutting will be long on the top of the cutting (as this will likely be too steep to mow) but the remaining chalk grassland area will be mowed short, providing inappropriate nesting opportunities for Stone curlew and inappropriate hunting areas for Barn owls.</p>	<p>Please see response to item 6.2.24 in the Comments on any Further Information received at Deadline 5 and 6 [REP7-021].</p> <p>With regards to the stone curlew impact, please refer to paragraph 11.1.4 above which states the measures offered to avoid impacts on stone curlews. With regards to the management of the chalk grassland, please refer to paragraph 11.1.7 above.</p> <p>It should be noted that the chalk grassland creation along the soft estate is not intended to provide suitable stone curlew nesting opportunities or barn owl hunting habitat, and therefore the management of these areas will reflect that. Barn owls should not be encouraged to hunt along the soft estate close to traffic (please refer to response F above). The management principles will be set out within the LEMP.</p>
11.1.28	<p>18.2.23</p> <p>Referenced Document - Comments received to Deadline 3 [REP4-036] item 30.1.9: There is no item 30.1.9 within this document.</p> <p>Point 18.1.4 referenced above within this report:</p> <p><i>“As a result of these discussions, the Applicant is willing to commit to procure and provide two additional new stone curlew breeding plots. These would be in addition to the previously proposed new stone</i></p>	<p>The provision of the additional plots is considered to provide confidence beyond reasonable scientific doubt that there would be no loss of nesting opportunities for the stone curlew population in the event of any possible in-combination impacts from increased recreational usage of the existing byways adjacent to Normanton Down RSPB Reserve. Thus, there would be no adverse effect on the integrity of the SPA breeding population through increased competition. For the purpose of Habitat Regulations Assessment, it is not necessary to provide mitigation against the possibility of future disturbance of individual pairs of stone curlew as such, but rather that the</p>

curlew breeding plots at Parsonage Down and Winterbourne Down (as reported in the Statement to Inform Appropriate Assessment [APP-267]). This means the Applicant will be providing a total of four new stone curlew breeding plots, forming an overall package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed scheme.”

18.2.23

The Applicants seems to confuse the documents; as Winterbourne Downs is referred to as “net gain” within the ES Chapter 8 Biodiversity [APP-046] but as “mitigation” for construction within the Statement to Inform Appropriate Assessment [APP-267]. We welcome the news that there will be another two Stone Curlew plots to be established within the vicinity of the Scheme, to adequately provide for any displacement of the SPA Stone curlews at Normanton Down (should they be adversely affected by increased recreational disturbance). It is disappointing that the Applicant has taken this long to acknowledge the requirements made by the RSPB within the SoCG; in respect of an Annex 1 species. We would have expected this to have been considered within the Habitats Regulations from the beginning.

The Applicant states they stand behind the contents of the SIAA, yet the Scheme as presented would fail to meet Habitats Regulations as it fails to “*dispel all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned as well as the unknown impact of recreational pressures once the Scheme is in operation*”

The Applicant would have been aware of this for the past two years, so we are surprised by their reluctance to follow the guidance from Natural England and RSPB. As a result of this, the Applicant, to avoid triggering Habitats Regulations, HAS TO provide the additional two Stone curlew plots to mitigate any potential negative effects upon the two Normanton Down Stone Curlew breeding plots. Parsonage Down being in the footprint of the proposed Scheme had to be mitigated, but as already noted within Chapter 8 Biodiversity [APP-

population of stone curlew within the SPA and the supporting area around it should be maintained by ensuring no reduction in the opportunities for nesting.

It is considered that this commitment, together with the provision of the stone curlew plot at Winterbourne Down, underlines the robustness of a conclusion of no adverse effect on integrity of the SPA in the Agreed A303 Statement to Inform an Appropriate Assessment (Environmental Statement Appendix 8.25) [APP-257].

The identification of the additional plots has been undertaken in close consultation with the RSPB, and proximity to Normanton Downs RSPB reserve has been taken into consideration (please refer to Appendix 1 of the SoCG with Natural England [REP7-011].

	<p>046] Winterbourne Downs plot was a net gain (RSPB Written Representation [REP3-013]) within the biodiversity legacy of the Scheme, and therefore would not be counted as mitigation for Normanton Down plots.</p> <p>Mitigation for the two Normanton Down plots would need to follow the same criteria used to locate the new Parsonage Down plot, ie to be in as close a proximity as possible to be used by the displaced breeding pair. See our response in item 18.1.4 of this document above with regard to placement.</p>	
<p>11.1.29</p>	<p>18.2.23</p> <p><u>Construction effects (paragraph 2)</u></p> <p>Document referenced, Biodiversity Chapter of Environmental Statement [APP-046] paragraph 8.9.38:</p> <p>8.9.38</p> <p><i>“The inclusion of the mitigation outlined above would result in effects that are considered to be neutral and not significant to the conservation objectives and biodiversity integrity of the SPA”</i></p> <p>We disagree with the Applicant that the effects of construction phase would be neutral and not significant to the conservation objectives and biodiversity integrity of the SPA and stand by our previous statements within this point.</p> <p>The only mitigation noted for Normanton Down Reserve plots within the Biodiversity Chapter of Environmental Statement [APP-04] is within the OEMP which we believe is lacking, as it fails to take into account the full life cycle of the Stone curlew species. See our comments in response to comments made at deadline 3 [REP4-036] items 9.7.15 and 9.7.16 (Stripping topsoil from construction areas and moving it to the perimeter of the works compound areas, then</p>	<p>Please see response to item 5.1.1 in the Comments on any Further Information received at Deadline 5 and 6 [REP7-021] and responses to 18.1.2, 18.1.3 and 18.2.40 in the Comments on any further information requested by the ExA and received at deadline 4 [REP5-003]. Clearance of vegetation and soil (a scrape) are proposed for the creation of the plot at Parsonage Down (please refer to response to 18.1.2 within REP5-003). PW-BIO5 and MW-BIO8 of the OEMP [AS-085] require measures to be implemented to protect stone curlews during construction.</p> <p>With regards to topsoil stripping, vegetation removal and deterrents, please refer to paragraph 11.1.2</p> <p>The closest of the Normanton Down stone curlew breeding plots is located over 500m from the DCO boundaries (more than the distance where disturbance impacts are considered possible), as such, specific avoidance mitigation measures are not likely to be required, Should stone curlew be identified within proximity to the working area (as stated within PW-BIO5 and MW-BIO8) a series of suitable avoidance (and where necessary anti-disturbance) mitigation measures will be implemented. This may include the erection of visual screens such as screened herras fencing, buffer areas, or placement of other objects that may impede line of sight.</p>

	<p>planting it with quick growing crops is not mitigation for on-site construction.)</p> <p>Removing vegetation within the breeding season will always create a nesting habitat. We have still not been told what visual screening of the construction area will be.</p> <p>As the construction of the Scheme will take six years, any impact on the local breeding population within this period will naturally have a knock on effect on the SPA population.</p> <p>Statement to Inform Appropriate Assessment paragraph 5.2.1, notes the impact of the construction disturbance on Normanton Down, yet mitigation provided in point 5.2.4 is for Parsonage Down and not for Normanton Down.</p>	
11.1.30	<p>18.2.23</p> <p><u>The in combination effects associated with recreational disturbance</u></p> <p>Referenced Environmental Statement [APP-046] paragraphs 8.9.186 to 8.9.187:</p> <p>8.9.186</p> <p><i>Disturbance: The provision of the tunnel as part of the Scheme would facilitate future access by visitors and local residents into areas south of the existing A303 in the vicinity of the Normanton Down RSPB reserve and the surrounding areas which are known to support breeding stone curlew. The Scheme would provide easier access to byways 11 and 12 south of the A303. If there is an increase in use of the existing byways 11 and 12, this may result in greater disturbance of breeding stone curlew and an indirect adverse permanent effect on nesting success locally.</i></p> <p>8.9.187</p> <p><i>The disturbance effects are influenced by a range of factors, including type of human activity, timing, frequency of occurrence,</i></p>	<p>Please refer to paragraph 11.1.2 and paragraph 11.1.29 above with regard to disturbance effects on stone curlew. It is unlikely that disturbance impacts during construction would be greater than that of the existing A303, as the majority of the works will be undertaken in a deep cutting. Under the OEMP, method statements will be produced by the contractor, with the RSPB being consulted during construction (where necessary).</p>

topography (which influences line-of-sight distance to nests), habitat, period in the breeding season and the experience of individual birds. Disturbance effects have been found to be greatest from dog walkers, less from other pedestrians and least from vehicles (Ref 8.67). The existing byways are fenced for purpose of livestock management at the Normanton Down RSPB reserve, which is likely to discourage, unauthorised public access to sensitive areas on adjacent farmland. As such, the residual effects are likely to be neutral and not significant.

With regard to the in-combination effects as per the above paragraph, the provision of two new plots in close proximity to Normanton Down will mitigate for the breeding attempts of SPA Stone curlew at Normanton down. However, there is still a need to mitigate for the construction activity in respect of foraging areas and the autumn Stone curlew roost.

Foraging disturbance to stone curlews

Referenced Document - Comments received to Deadline 3 [REP4-036] item 9.5.1:

“A large roost of stone curlews was recorded congregating on the RSPB Normanton Down nature reserve in autumn 2017, located over 500m south-east of the western portal. Measures to avoid disturbance of sensitive ecological receptors outside the limits of the scheme are considered suitable and proportionate to avoid disturbing the autumn roost of stone curlews.

PW-G4 and MW-G12 of the OEMP [REP3-006] set out the core working hours. Works that will occur outside of the core working hours include the use of the tunnel boring machine, which will be out of sight underground. Some lighting would be required at the western portal during construction of the tunnel, but the works would be in a deep cutting which would form a visual barrier, limiting light spillage as detailed within 8.9.35 of the Environmental Statement [APP-046].

11.1.31

18.2.23

MW-G29 of the OEMP requires the CEMP to include measures to minimise light spillage, particularly around the portals. As noted, stone curlews forage at night within the pig enterprise and the construction works would not prevent this foraging activity. It is to be noted that existing lighting from A303 traffic and Longbarrow roundabout would remain until the traffic was routed into the new tunnel. MW-NOI1 of the OEMP requires the use of best practicable means for minimising noise. In addition, PW-BIO5 of the OEMP includes specific mitigation measures in relation to stone curlew.

The Statement to Inform Appropriate Assessment [APP-266] is considered robust in terms of its assessment of construction impacts on the stone curlew population in the vicinity of the Scheme.”

See our response to Comments received to Deadline 3 [REP-036] item 9.5.1. Our reply highlights that within the Statement to Inform Appropriate Assessment paragraph 5.2.1, the impact of the construction disturbance on Normanton Down, yet mitigation provided in point 5.2.4 is for Parsonage Down and not for Normanton Down.

Referenced OEMP [REP4-020] for working methods suitable to avoid disturbances on foraging stone curlews. See our response to Comments received to Deadline 3 [REP-036] item 9.5.1. The birds are most active between dawn and dusk, but will also forage during the day.

The construction activities would not prevent Stone curlews from foraging in the vicinity, but they would present a considerable deterrent from their regular foraging grounds, especially if the Scheme is using their “visual deterrents” to prevent nesting activity. This will push the Stone curlews into competition for food with other birds. We agree that there are other areas of arable and grassland within the wider Salisbury Plain, but not all of these are suitable, as a

As stated within 1.60 of Appendix A of the SoCG with the Natural England, during the late summer to autumn, the birds have the option of congregating on the Normanton Down plots, or any other stone curlew plots within the SPA and surrounding zone. As the birds congregate in late summer, there is also fallow land available after harvest. Hence, whether there is an increase in recreational disturbance at Normanton Down or not, there would be no likely significant effect on the supporting population of the SPA even if the birds chose to vary the current autumn roost. This would also apply to the construction phase of the Scheme, whereby if stone curlew chose not to forage close to the proximity of the Scheme, there are extensive foraging areas within the local surrounds, such that it would not result in increased competition with other birds.

With regards to topsoil stripping, vegetation removal and deterrents, please refer to paragraph 11.1.2 above.

	<p>large area is open access and would therefore not be acceptable Stone curlews.</p> <p>Referenced OEMP [REP4-020] PW-BIO5 and MW-BIO8 for measures that could be employed in mitigation measures at construction phase. See our response to Comments received to Deadline 3 [REP-036] item 9.5.1 in relation to PW-BIO5 and MW-BIO8. The Applicant has still not said what the “visual deterrents” will be.</p>	
<p>11.1.32</p>	<p>18.2.23</p> <p><u>Measures to avoid disturbance on the Stone curlew roost</u></p> <p>Comments received to Deadline 3 [REP4-036] item 9.5.1, the Applicants response is</p> <p><i>“Measures to avoid disturbance of sensitive ecological receptors outside the limits of the scheme are considered suitable and proportionate to avoid disturbing the autumn roost of stone curlews”.</i></p> <p>There are no direct references to the Stone curlew roost within the OEMP. PW-BIO5 and MW-BIO8 only referencing nesting and not the impact of construction works on the Stone curlew autumn roost.</p> <p>The Applicant has not undertaken any surveys on the Stone curlew roost that occurs within the location of Normanton Down Reserve, so we do not believe that they are in a position to comment on what effect the impact of construction activity within the location will bring. For the Stone curlews within this local area Normanton Down has become a significant gathering point as shown by the numbers of birds that RSPB have counted on county wide roost surveys.</p> <p>We find it shocking that the Applicant can promote a scheme as enhancing biodiversity and ecology when it has a detrimental effect on the SPA population of breeding Stone curlews within the locality. It places tourism and recreation above protecting wildlife.</p>	<p>In order to avoid duplication of surveys and additional disturbance of any breeding stone curlew within Normanton Down RSPB Reserve, survey data was obtained from the RSPB, this approach was agreed with both the RSPB and Natural England (Table 8.7 and 8.8 of Chapter 8 of the Environmental Statement [APP-046]).</p> <p>The stone curlew plots present within Normanton Down RSPB Reserve are located over 500m from the DCO limits (as stated within paragraph 8.9.35 of Chapter 8 of the Environmental Statement [APP-046]), as such are unlikely to be disturbed by construction activities. However, continued consultation will be undertaken with the RSPB (which will monitor these plots), as set out in the August 2019 Revision 4 version of the OEMP [AS-085, PW-BIO5 and MW-BIO8]. The autumn roost was taken into account, as described in the HRSA Clarification Note submitted at deadline 7 as Appendix A [REP7-011].</p>

11.1.33	<p>18.2.24</p> <p>Improving resilience of the Stone curlew population as a whole is a completely different thing to providing mitigation for impact upon specific individual breeding pairs of birds. The proposed new plot at Parsonage Down is intended as direct mitigation for the displaced breeding pair; yet the two breeding pairs that may be displaced from their plots on Normanton Down due to the potential of promoted and increased recreational use of the byways have no direct mitigation. These are only noted by the provision of “plots to improve resilience of the SPA population”. How can this be meeting the Habitat Regulations?</p>	<p>The additional two stone curlew plots (i.e. entirely additional to the replacement plot at Parsonage Down and the enhancement plot at Winterbourne Down) are not intended as mitigation measures for individual pairs at a specific location. As stated in HRSA Clarification Note (Appendix A of the Statement of Common Ground with Natural England [REP7-011] submitted at Deadline 7), the commitment to provide the additional plots is considered to provide confidence beyond reasonable scientific doubt that there would be no loss of nesting opportunities for stone curlew population in the event of any in-combination impacts from increased recreational usage of the existing byways adjacent to Normanton Down RSPB Reserve and thus no adverse effect on the SPA breeding population through increased competition. Highways England has already identified a selection of suitable locations for additional stone curlew plots (all of which have been confirmed by RSPB as suitable) and is in discussion with landowners who are interested in providing the plots. For the additional plots, the commitment by Highways England to provide additional plots provides the surety required for the Habitats Regulation Assessment.</p>
11.1.34	<p>18.2.25</p> <p>The second consultation document placed the map legend over the top of Normanton Down Reserve thus obscuring it from the map. If Normanton Down had truly been taken into account, the Reserve would not have been obscured, especially as within the literature, there was reference to adverse effects as a result of construction and operational activities.</p> <p>The Scheme has not changed the location of the adjacent byways 11 and 12, but it has promoted the southern part of the WHS for roaming and exploring which through combination effects has put the SPA Stone curlew population at Normanton Down at risk.</p> <p>We are unable to see where the design of the scheme has taken into account the breeding Stone curlew population at Normanton Down.</p>	<p>The presentation labelling of a figure in a public consultation document was unrelated to the environmental assessment. Normanton Down Reserve has been taken into account throughout the ecological assessment as reported in chapter 8 of the Environmental Statement [APP-086] and shown on ES Figure 8.3 [APP-149].</p> <p>As stated within the response of 18.2.25 of the Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003], the Scheme would not change the location of the adjacent Byways. The original proposal was to provide enhanced fencing at Normanton Down RSPB Reserve, to provide increased security against illegal trespass and therefore avoiding potential adverse effects on the breeding population from the possible in-combination disturbance effects associated with the removal of the A303 as a barrier to human access along the Byways. Following confirmation that the landowner has refused the offer of enhanced fencing (as stated in HRSA Clarification Note (Appendix A of the Statement of Common Ground with Natural England [REP7-011] submitted at Deadline 7), the</p>

		<p>additional plots are considered to provide confidence beyond reasonable scientific doubt that there would be no loss of nesting opportunities for stone curlew population in the event of any in-combination impacts from increased recreational usage of the existing byways adjacent to Normanton Down RSPB Reserve and thus no adverse effect on the SPA breeding population through increased competition.</p> <p>The design of the Scheme has taken into account the breeding stone curlew population at Normanton Down. One of the benefits of the selection of the northern route for the Winterbourne Stoke bypass as the Preferred Route for the Scheme was to move the alignment beyond the disturbance distance from Normanton Down Reserve and as close as practicable to the existing A303, an area which is unfavourable for stone curlew to nest due to the proximity of existing traffic. The design of the Scheme in a deep cutting leading to the western portal will also ensure that there will be no visible traffic from Normanton Down Reserve, a reduction of visual disturbance compared to the existing situation.</p>
11.1.35	<p>18.2.26</p> <p>As previously stated we are unable to reference item 30.1.9 in the Comments received to Deadline 3 [REP4-036] as the item does not exist.</p> <p>The Applicant's oral submission for ISH7 related to biodiversity [REP4-035] omitted comments made by M & R Hosier which were also submitted at Deadline 4.</p> <p>We stand by our comments that the Applicant did not "dispel all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned as well as the unknown impact of recreational pressures once the Scheme is in operation" as required within the SIAA.</p> <p>We are pleased to note that under the wording of "...a package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed Scheme." But will reserve</p>	<p>Please see response to item 6.2.20 in the Comments on any Further Information received at Deadline 5 and 6 [REP7-021]. Please refer to the response to paragraph 11.1.33 above with regards to disturbance impacts.</p>

	judgement until we can assess what is proposed for the Normanton Down pairs of breeding Stone curlews.	
11.1.36	<p>19.2.27</p> <p>We note the Applicant's comment that <i>"the Great Bustard Group contacted and were responded to during the 2018 archaeological surveys and ground investigation works (GBG personal communication)."</i> However, we would be interested to see what information the Applicant supplied to the GBG as a result of this communication in respect of mitigation for the impact of the ecological surveys that were to take place during the 2018 breeding season.</p> <p>Please can we have a copy of the mitigation measures that they had prepared prior to the surveys taking place?</p> <p>We are pleased that the Applicant is finally in discussions with the GBG. We hope that discussions will result in improved changes to the OEMP [REP4-020] in relation to avoiding impacts on the Great Bustards during construction, as well as removing the impact on the Great Bustard breeding grounds within the scheme.</p>	<p>See Highways England's response to Second Written Questions on Biodiversity, ecology and biodiversity, specifically Ec.2.4 [REP6-024].</p> <p>Surveys for the presence of breeding birds were carried out by Ecology Clerks of Works prior to the commencement of the works, however great bustards were not recorded nesting within the 500m (radius of the survey). As such, no further mitigation / consultation was required.</p> <p>Items PW-BIO5 and MW-BIO8 of the OEMP [AS-085] have been updated to confirm that consultation will be undertaken with the Great Bustard Group with regards to suitable mitigation measures to be installed in order to avoid disturbance impacts on any nesting great bustards identified in proximity of the Scheme.</p>
11.1.37	<p>18.2.29</p> <p>We are pleased to note that the Applicant is discussing the habitat requirements, behaviour and requirements of the Great Bustards so that there will be no impact on the species during construction and once the Scheme is in operation.</p> <p>18.2.30</p> <p>The Applicant has never provided anyone with Great Bustard nesting locations [APP-157] despite requests. The Great Bustard species was not included in the breeding bird survey to inform the Scheme [APP-255]. As such, we do not agree with the Applicant's statement</p>	<p>See Highways England's response to Second Written Questions on Biodiversity, ecology and biodiversity, specifically Ec.2.4 [REP6-024].</p> <p>Any reference to great bustard has been redacted from the breeding bird survey as the information is confidential [APP-255]. Due to their rarity nest sites have been treated with the same confidentiality applied to Schedule 1 birds such as stone curlew. Should great bustards have been recorded during the breeding bird surveys or other surveys, these would have been recorded and mapped accordingly. At the time the Environmental Statement was produced, the survey data and data provided by the Great Bustard Group was used to inform the Schedule 1 and Annex 1 Bird Species Figure [APP-157]. As stated within the response to 9.7.20 of the Comments on the DAMS</p>

	<p>that this information, together with the two referenced points within the Environmental Statement, is considered suitable to determine the baseline and the impact of the Scheme. We suggest it highlights that more dialogue needed to have taken place with the Great Bustard Group when these reports were being compiled.</p> <p>Paragraph 3 relating to PRoW shows a lack of understanding of the behaviour and requirements of the Great Bustard species.</p> <p>Whilst the fencing along the PRoW's may separate users of the paths, provided it is fenced with barbed wire and stock netting, it will not form any visual barrier for the Great Bustards unless hedging is also proposed. The Applicant has already stated in point 18.2.28 above "<i>...that although the disturbance distance for great bustard has not been as well studied as that for stone curlew, the species is considered to be similarly sensitive to disturbance from human activity</i>" It is both the sight and sound of general public and dogs that will be using the PRoW's that is the issue. It is relevant to note that the Great Bustard Group have secured funding and support by Wessex Water and have planted hedging around one of their release sites. This has been needed to reduce the visual disturbance caused by users of the PRoW (Pers Comm).</p> <p>It is not the nesting sites of the Great Bustards that are the problem, it is the location of the new PRoW's and new Longbarrow Roundabout embedded within the Scheme that is the issue. There are no measures embedded into the Scheme design to mitigate for the increase in numbers of both PRoW and PRoW users bringing more people and dogs into direct conflict with nesting and feeding Great Bustards.</p>	<p>and on any further information requested by the ExA and received to Deadline 3 [REP4-036], it is only necessary to carry out site-specific surveys for species and habitats where there is a lack of suitable data to inform an environmental assessment. With rare bird species that are easily disturbed and for which there is ongoing monitoring in place, it is not appropriate to duplicate survey effort. When the Great Bustard Group was first approached in October 2017, there was no request to carry out surveys in addition to the data the group provided. Natural England and RSPB were satisfied with the scope of the bird surveys carried out to inform the environmental assessment.</p> <p>With regards to PRoW, please refer to the response to 9.7.21 of the Comments on the DAMS and on any further information requested by the ExA and received to Deadline 3 [REP4-036], where it was stated that the potential increase in recreational disturbance is unlikely to have a detrimental impact on the local population of great bustards. However, they are less likely to nest within the close proximity to the PRoW. This would not reduce the availability of foraging and nesting opportunities within the Wessex area, especially as the new PRoW are all close to the highway and as such are in areas which would be unfavourable for great bustard to nest. The new PRoW would be fenced to prevent people and dogs from entering adjacent private land and to separate PRoW from livestock in grazed areas of the Scheme. The nature of fencing to be implemented on the new PRoW is set out in the OEMP. The measures would avoid disturbance of nesting or foraging great bustards. Dialogue with the Great Bustard Group will continue during preliminary works and construction, as set out in the OEMP [AS-085] PW-BIO5 and MW-BIO8.</p>
<p>11.1.38</p>	<p>18.2.32</p> <p>All the species mentioned as potential users of the green bridge 4 are those that are already within the area. We therefore challenge the net gain within this location, other than for chalk grassland</p>	<p>Please refer to the response to 9.7.9 of the Comments on the DAMS and on any further information requested by the ExA and received to Deadline 3 [REP4-036] which highlights that hedgerows, shrubs or trees would only be planted within the WHS for specific mitigation measures, as planting of hedgerows may have an adverse effect on heritage within the WHS. As</p>

	<p>invertebrates that are suited to short early stage calcareous grassland. This is backed up by the lack of hedge planting and intention to manage the area for a range of grassland heights.</p> <p>We still believe that in addition to the chalk grassland proposed that for the Scheme, provision is also made for farmland birds (as per Porton to Plain project) to deliver a number of biodiversity benefits as per WHS Management Plan 8.5 Nature Conservation 8.5.4 (Policy 3h/Action 59).</p>	<p>detailed in the OEMP, item MW-LAN4, planting in the WHS will not be carried out except where required for ecological or visual mitigation and providing the planting does not adversely impact on visual relationships between monuments conveying the attributes of OUV of the WHS.</p> <p>It should be noted that extensive hedgerows have been considered for inclusion as part of the Scheme outside of the WHS, as illustrated in the indicative Environmental Masterplan [APP-059].</p>
11.1.39	<p>18.2.33</p> <p>Early stage successional calcareous grass would always overtime develop into a closed sward. Therefore, it would be the sward and flora heights that would be managed. Bare ground and rocks (?) other than mole hills and farm livestock activity, would only be sustained by frequently breaking up areas of the sward.</p> <p>In respect of brush harvested seed, please see our response to item 9.7.14 within our Comments received to Deadline 3 [REP4-036]. With early planting as per OEMP [APP-267] MW-LAN4 and the use of reputable seed merchants as used at Normanton Down, this would be possible and would reduce the carbon footprint by sourcing local seed suited to the area.</p>	<p>Please refer to the response to 9.7.13 on Comments on the DAMS and on any further information requested by the ExA and received to Deadline 3 [REP4-036] which states that selective use of some wild-harvested seed could be included in the detailed landscaping scheme at some locations – this would be finalised during detailed design and would be set out within the Landscape Scheme.</p>
11.1.40	<p>18.2.33</p> <p>The Applicant has not replied as to what the “other objectives” were, referred to under point 5 in relation to mowing.</p> <p>We would like to know how the Applicant proposes to mow and collect the cuttings from the 2.5 m tops of the deep cutting embankments.</p> <p>With regard to the A354 Weymouth Relief Road, we note that it was managed by mowing, but wonder how often this was carried out and if it is still being mowed currently. As stated previously, the A303</p>	<p>The mention of “<i>other objectives</i>” was in relation to management of scrub encroachment as stated within response 5 to Ec.1.7[REP2-027]. In this regard it might be necessary to clear scrub from grassland areas for the following reasons:</p> <ul style="list-style-type: none"> • Water Quality - ensuring that areas of chalk grassland that have been designed as infiltration areas as part of the drainage system to enhance water quality are maintained to be free from scrub, as illustrated within the indicative Environmental Masterplan [APP-059] (specifically highlighted as EHF – Water quality); • Landscape and visual - ensure that scrub does not encroach into suitable grassland areas from adjacent scrub planting;

	<p>tunnel project within the WHS can do better by building on the lessons learned from Weymouth.</p>	<p>With regards to the mowing of the 2.5m tops of the deep cutting embankments, it would not be suitable to confirm the management of the top 2.5m of the chalk grassland at this stage of the Scheme, however it would be managed either under a mowing regime or grazed.</p> <p>Grassland on the A354 Weymouth Relief Road continues to be managed by both mowing and by grazing since it opened in 2011 although the method and frequency of management differs between areas (Mr P Sterling, formerly Dorset County Council, now Butterfly Conservation, personal communication).</p>
11.1.41	<p>18.2.34</p> <p>As previously mentioned, it is difficult to deduce whether the bare ground referred to within the early successional habitat will be maintained by mole action and farm livestock, or whether the Applicant intends to build in the creation of bare ground as part of the habitat.</p> <p>We note that as with many other criteria within the Scheme, the main works contractor is responsible for preparing the detailed landscaping scheme prepared under OEMP (MW-LAN1).</p> <p>However, we would suggest that if the Applicant is unclear as to how the landscaping and management should be proposed, the main works contractor will be given free rein to create whatever they decide is easiest, as the guidance is minimal.</p> <p>From our experience we agree that it is easy to establish calcareous grassland from seed in autumn. The skill comes in managing the various “ugly duckling” stages that the process goes through. As previously stated, calcareous grassland habitat is a lengthy procession to species rich status. Many flora species lay dormant in the soil for years before they show and this is the benefit of arable reversion over the quicker fix of minimal topsoil with a lower seedbank.</p>	<p>As stated within MW-LAN1 of the OEMP [AS-085], the contractor will be responsible for producing the LEMP, however this will be subject to approval by the Secretary of State under Requirement 4 of the DCO. In addition, the required detailed Landscaping Scheme is also subject to approval by the Secretary of State under Requirement 8 of the DCO.</p> <p>With regards to the Weymouth Relief Road, Highways England has been in consultation with Butterfly Conservation (Mr P Sterling, personal communication) with regards to the creation of the chalk grassland to be created as part of the Scheme. The relevant principles can be viewed on the Butterfly Conservation website, at the below location:- https://butterfly-conservation.org/sites/default/files/2019-06/building_sites_for_butterflies.pdf</p> <p>Butterfly Conservation has a butterfly monitoring transect within that scheme and has shown that 30 species of butterflies have been recorded up to 2019. https://butterfly-conservation.org/our-work/conservation-projects/building-sites-for-butterflies/counting-the-butterflies-on-the-a354</p> <p>Different species of plants differ in their persistence in the soil seedbank, so the number of species of characteristic of chalk grassland which appear in arable reversion depends on the length of time the land has been in arable cultivation and the proximity of unploughed chalk grassland which may disperse seeds onto arable land. The high nitrogen and especially the high phosphorus content found in arable soils are unfavourable for chalk grassland although nutrient leaching reduces this over time. The approach used at the A354 Weymouth relief road was to apply a very thin layer of soil, with associated seeds and other organisms onto a chalk substrate in the cuttings. Within the Scheme there are expected to be a few areas where topsoil will be</p>

	<p>We would be interested to read about the chalk grassland creation methods and management for the Weymouth Relief Road. Please can the Applicant provide me with a link to this so we may better understand their references?</p>	<p>retained in situ and arable reversion could be used there if considered practicable, feasible and appropriate. This would be confirmed during detailed design.</p>
11.1.42	<p>18.2.35</p> <p>We are still curious as to how botanical monitoring of the chalk grassland created during construction, will bear any relation to the chalk grassland to be created over the minimum topsoil following the landscaping. Will the screening bunds around the working compound be predominantly chalk subsoil with minimal topsoil? From the reports we were lead to believe that the chalk subsoil and the topsoil were to be stored separately. Please can you provide us with additional information?</p> <p>Perhaps botanical monitoring is no more than controlling the vegetative growth on the screening bunds, after identifying the species that are present? As with all agricultural land management, you can do the same thing a hundred times, and on each occasion you will get a different result.</p> <p>Therefore, although monitoring would be an interesting exercise, we do not understand how this will ultimately help with the management of the individual chalk grassland areas. Each of the landscaped areas within the Scheme will be a different mix of chalk, topsoil and seed bank, so they will all behave individually in respect of vegetative growth. What will the chalk grassland mix planted on the bunds be, as this will ultimately add to the seed reservoir held within the topsoil?</p>	<p>The botanical monitoring will inform the management regime which will lead to the progressive development of species-rich chalk grassland over time. It will be produced by the Main Works contractor in consultation with Natural England as stated within MW-BIO13 of the OEMP (an updated version of which is submitted at deadline 8). Parameters that may trigger further management could include the following:</p> <ul style="list-style-type: none"> • percentage cover of scrub or injurious weeds within certain habitat types; • percentage cover of bare ground; • the establishment of sown species; and • the frequency of indicator species. <p>This would indicate, for example, whether increased frequency of mowing or grazing was required in particular areas, or whether weed control was needed in areas of arable reversion or other areas. On screening bunds and topsoil storage areas monitoring would be mainly to identify the need for management of injurious weeds or other species that would potentially cause nuisance.</p> <p>The composition of the seed mix for the permanent grasslands has not been determined at this point. It will be confirmed along with the target conditions of the specific plots within the Landscape and Ecology Mitigation Plan, which will be produced by the Main Works contractor. As described in the OLEMP [APP-267] and in response to 18.1.6 of the Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003], the objective will be to promote heterogeneity within the habitat through the creation of a mosaic of early stages of successional calcareous grassland communities, ranging from sparsely vegetated bare ground and rock through to closed, species-rich swards, such as the calcareous grasslands traditionally present in areas of Salisbury Plain and Parsonage Down.</p>

		Establishment of vegetation on temporary areas may be carried out by seeding. Where it does not conflict with other requirements, opportunities would be sought to seed or allow regeneration of vegetation of benefit for insect pollinators, farmland birds and scarce arable flora.
11.1.43	<p>18.2.35</p> <p>We now understand that it is the Applicant, and not the main works contractor that has to provide the detailed landscaping scheme which will be submitted for approval under Requirement 8 to include an 'implementation timetable for the landscaping works' It is the LEMP that is required to be produced by the main works contractor, although it will be Highways England acting on behalf of the Authority that will have the final decision on what is agreed. This seems a very long winded approach, when the Applicant could just complete the whole body of work themselves, especially as they will have done the survey work ahead of the Scheme.</p>	<p>The detailed landscaping scheme, prepared by or on behalf of the Applicant, is required to be approved by the Secretary of State, in consultation with Wiltshire Council and Historic England (where required) in accordance with Requirement 8 of the draft DCO. The main works contractor will need to submit a Landscape and Ecology Management Plan (LEMP), and the OEMP, revised at deadline 8, reflects that the LEMP will now also require the approval of the Secretary of State, rather than the Authority (Highways England).</p> <p>Furthermore, the Applicant has committed to a detailed list of design commitments, design principles and established a procedure for stakeholder consultation on the detailed design of the Scheme, all under an overarching design vision of the Scheme in the updated draft Outline Environmental Management Plan [REP6-012, a further revised version of which is submitted at deadline 8].</p>
11.1.44	<p>18.2.36</p> <p>By leaving the decision for areas to be grazed until the detailed design process, there will be no feedback from farmers/landowners, as to where would be the most appropriate locations to site water troughs and gates. The locations decided by the Applicant may not be practical or provide the best land management within the areas.</p> <p>We still believe that for the Scheme to deliver the biodiversity benefits, decisions on mowing/grazing infrastructure and locations of scrub for composting mowings need to be built in at this stage and not left main works contractors. If Highways England, as the Authority, has the ultimate oversight of the documents produced, then why do they not produce the body of work, especially as they have carried out the survey work leading up to the Scheme?</p>	<p>The contractor will be responsible for designing the scheme and, as such, it is not appropriate for Highways England to design this element. It will be a contractual requirement for the contractor to identify those areas where grazing is suitable for calcareous grassland management and to provide infrastructure on those plots which allows for grazing, including:</p> <ul style="list-style-type: none"> • stock-proof fencing, • water supply, • water troughs, • access points and • corralling areas. <p>These will be defined within the LEMP to be produced during the detailed design phase. At this point, the Agricultural Liaison Officer (ALO), identified within table 2.1 of the OEMP (refer to the deadline 8 submission) will be in</p>

		<p>place. As stated in Table 2.1 in the updated OEMP, the ALO shall liaise with affected landowners regarding the location of accesses and grazing infrastructure where calcareous grassland management is required. As the Authority, Highways England has overall responsibility for the review of the contactors design proposals and recognises that the successful delivery of biodiversity benefits is essential for the success of the Scheme.</p>
11.1.45	<p>18.2.37</p> <p>The Applicant is merely removing the views of the traffic and replacing them with additional views of the modern infrastructure in the form of the entrances of the green bridge 4, the sides of the cutting and the western portal and the new Longbarrow junction. The visual links between the monuments are already evident so do not need to be maintained. Added to this, there is the presence of the four lanes of carriageway in a previously undisturbed agricultural part of the WHS as well as the reworking of the landscape at the top of the deep cutting.</p> <p>Figure 4, CH03, Winterbourne Stoke Crossroads Long barrow. This shows the new Longbarrow junction, which we believe to be more obtrusive in the landscape than the Applicant has depicted. The Winterbourne Stoke Long barrow does not look out onto any other monuments within this area.</p> <p>Figure 5, CH04, Winterbourne Stoke Crossroads round barrows. The views are confusing with no separation between the baseline and the new proposed views. The photomontage just indicating views south and east.</p> <p>Figure 7, CH06, The Diamond Group. This is taken from a viewpoint that will not be accessible to the general public because it is on our farm and not from a PRow. In addition, all of the Diamond Group except for the Longbarrow, are is below ground, as is Wilsford G1 the location of which is not shown in the photomontage. G1 would</p>	<p>The Applicant respectfully does not agree with the suggestion that the Scheme is merely replacing views of traffic with modern infrastructure. The removal of vehicles from the existing A303 and their placement either in tunnel or cutting is a significant beneficial change to the visual context of the landscape. This is because from across the surrounding landscape, the traffic and portals will not be visible because of their siting in cutting, beneath people's line of sight and that Green Bridge no.4 will be sited to replicate existing ground levels (OEMP D-CH23) [AS-086].</p> <p>The Applicant respectfully does not agree that the visual links between monuments are already evident. This is not supported by the assessment and evidence and is not the case, such that Green Bridge no4 will reconnect the landscape containing the Diamond Group and Winterbourne Stoke Crossroads barrows, as set out in paragraph 6.8.5 d) of APP-044.</p> <p>Similarly, to state that the Scheme will be located in a previously undisturbed landscape is not supported by the evidence and is not the case. The Scheme is located in proximity to the existing A303 which already defines the highways corridor across the landscape. APP- 077 Historic Landscape Character Areas identifies the western approach cutting and Longbarrow roundabout as being across "re-organised fields", which are described in APP -215 as modern fields which represent a re-arrangement of the original downland (ref HWI2889 and HWI2963).</p> <p>The re-working of the landscape at the top of the cutting will be undertaken in line with the OEMP which requires earthworks to be rounded and to provide a natural appearance and reflect the surrounding topography (MW-LAN5) and therefore the landform will be integrated. In combination with the proposed chalk grassland, this will be a beneficial change to the land cover from the existing agricultural land uses, through re-introducing a valued land cover type.</p>

have the new visual intrusion of the western portal in its sight line which it currently does not have.

There are no formal entrances to Green Bridge 4, it is part of the western approach cutting, with the Green Bridge reducing the visibility of the road and vehicles along with establishing improved inter-visibility across this part of the WHS and existing monuments. The OEMP sets out a number of key commitments (D-CH4; D-CH10; D-CH11; D-CH23; D-CH24; D-CH25 and D-NOI1) to integrate the structure within the landscape and provide a restrained and elegant crossing.

Similarly, there are commitments and key principles for the western approach cutting, western portal and Longbarrow junction within the OEMP, all with the purpose of achieving the OEMP design vision (OEMP AS-085, key principles P-PWS04 and P-PWS02 and key commitments D-CH5, D-CH9, C-CH13, D-CH16, D-CH8, D-CH28 and D-CH21) and in respect of Longbarrow junction (OEMP AS-086 section 4.2.9 and P-PWS06).

Figure 4, CH03 [APP-218] is accurately depicting Longbarrow junction because it has been created via the methodology provided in APP-231, which relies on surveyed data and the use of the Scheme model. The image has been based upon the Scheme design indicated on the Environmental Masterplan [APP-059] which is designed to integrate the Scheme within the landscape, such that it would not be obtrusive. This is because the A303 would be in cutting which is why it is not visible. The slip road between the A303 and green bridge 3, and vehicles crossing the green bridge would be visible, but at over 600 metres, in comparison to immediate and close-range views of vehicles on the existing A360 and at Longbarrow roundabout. Therefore, there would be an improvement to the view from the Winterbourne Stoke Crossroad barrows.

Figure 5, CH04 [APP-218] - are computer generated images which have been undertaken to illustrate the Scheme and are not presented in the same format as the photomontages. Please refer to photomontages APP-137 and APP-138 for a comparison between the existing and proposed views.

Figure 7, CH06 [APP-218] - the photomontage clearly shows the beneficial change resulting from the removal of vehicles on the existing A303 and has been produced as per the method set out in APP-231.

In respect of Wilsford G1, The HIA [APP-195, page 457-8], acknowledges there would be long-distance views of the cutting. But the removal of the

		traffic from the immediate north of W1 (the existing A303) would improve the asset's setting. It is assessed that overall, the Scheme would have a Neutral effect (derived from a Negligible Negative Change and a Minor Positive Change to a Very High Value asset, resulting in both Slight Adverse and Moderate Beneficial effects).
11.1.46	<p>18.2.38</p> <p>Thank you for answering our question. We will look forward to seeing the numbers of barn owls, badgers, bats, polecats and hedgehogs using the green bridge 4, although we doubt many of the species mentioned will use the bridge due to the lack of cover provided ie it will be all grass, and the general public and dogs using the new PRoW will also share the space with the wildlife.</p> <p>When the Scheme is in operation, will there be surveys to assess the biodiversity benefits of the green bridge 4 for the above species once the Scheme is in operation? As far as I am aware, there have been no base line assessments for polecat and hedgehogs, and the bat surveys that are being carried out during August are not within the location of Green bridge 4.</p>	As stated within the response to 18.2.32 of the Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003], the position and width of Green Bridge No. 4 was determined primarily for heritage inter-visibility reasons, however the width would provide safe crossing for other species, including bats, barn owls, reptiles, and other mammal species. Future usage by individual species would depend on the development of the habitat and the local occurrence of the species. The chalk grassland would facilitate the spread of grassland species as well as chalk grassland invertebrates. It would contribute towards the biodiversity net gain within the area. Further species-specific surveys of Green Bridge No. 4 are not a specific requirement as it is considered a biodiversity enhancement rather than essential mitigation. However, it is anticipated that further condition assessments of the habitats will be undertaken and specified within the LEMP and Landscaping scheme.
11.1.47	<p>18.2.39</p> <p>Would the stockpile be sprayed with herbicide, in order to remove natural regeneration growth that will occur over time? This is not covered in OEMP MW-GEO3 [REP4-020]</p> <p>Would all the stockpiles of chalk and topsoil be planted with chalk grassland by the main works contractor, or would some be left unplanted?</p>	The management of the stockpiled soil would be carried out in line with the Soils Management Strategy and the guidance set out in Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) - secured through OEMP MW-GEO3 [AS-085]. As stated within item 12 of the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) management of weeds would be undertaken during the summer months either by spraying to kill them or by mowing or strimming to prevent their seeds being shed. The methods will be set out within the Soil Management Strategy which will be produced by the main works contractor and approved by the Secretary of State under Requirement 4 of the DCO. The need for weed control within the works would be monitored by the Environmental Clerk of Works during the construction period.

11.1.48

18.2.40

So we may better understand, we have asked the Applicant a number of times to provide more information on what visual deterrents and visual screens may be, other than the planting of quick growing crops to reduce line of sight. As it stands within the OEMP [REP4-020], these are the only other measures to mitigate the expanse of bare ground created by the preliminary contractor to prevent Stone curlews nesting within the area.

We agree that quick growing crops would be effective in relation to the Parsonage Down plot (that will be lost), but fail to see where this would apply to other areas. It would be more suitable to maintain the existing vegetation within the Scheme areas, to deter Stone curlews, until work is imminent to start.

The Applicant must already appreciate, that the mitigation measures within the OEMP will not prevent Stone curlews from entering the Scheme area. We would suggest that there will be at least one nesting attempt every year during the construction process. With this in mind, we urge the Applicant to revisit the measures laid out in OEMP [REP4-020] as this will both ensure they are not in breach of Habitat Regulations, and will also avoid delays during construction due to nesting Stone Curlews.

As stated in our response to Comments received to Deadline 3 [REP4-036], our written summary of oral representation from ISH7 Biodiversity, and our comments on 8.30.7 response to the Applicant's written summary of oral submissions to ISH7, the OEMP [REP4-020] does not contain any assurances that the "appropriate specialist" referred to within PW-BIO5 and MW-BIO8 will actually have a depth of understanding of the Stone curlew species, and experience working with the species. It is highly likely, as has already been proven, that without adequate experience of the ecology of the species, the breeding Stone curlew may go unnoticed by the ECoW and nesting attempts would therefore fail. This

It is not considered necessary to prescribe visual deterrents at this point within the Scheme, as the deterrents used would be site-specific. However, it is anticipated, that if works are required to start during the breeding season in some areas, deterrence measures could be applied in advance, for example silent bird deterrents could be used, such as lines of moving tape, or bird predator kites (RSPB and Natural England will be consulted on suitable mitigation measures should stone curlew be found in the Order limits or within 500m (PW-BIO5 and MW-BIO8 of the OEMP).

It is agreed, as stated within paragraph 11.1.2 above and within PW-BIO5 and MW-BIO8 of the OEMP [AS-085], that measures that could be employed include the stripping of topsoil only where works are planned to occur, with crops being retained (where necessary and appropriate) to deter stone curlew from nesting.

	<p>situation would not happen if the Habitats Regulations were addressed properly.</p> <p>See our response to Comments received to Deadline 3 [REP4-036], paragraph 9.7.17. We strongly suggest that the Applicant amends their point PW-BIO4 of the OEMP [REP-020] to include monitoring the Stone curlew chicks until such time as they are fledged. The chicks will be at risk of being run over by construction traffic as they are unable to fly and will just squat motionless on the ground until they have fully developed their flight feathers. If the chicks are not being monitored, then the contractors will not know if there are vulnerable Stone curlew chicks within the area to avoid.</p> <p>We suggest that to comply with Habitat Regulations monitoring of Stone curlew chicks within the Scheme area is included within the OEMP PW-BIO4.</p>	
11.1.49	<p>18.2.41</p> <p>The Applicant insists that there has been consultation with the GBG prior to the commencement of the 2018 archaeological surveys. Would they therefore be kind enough to give us with a copy of the method statement for mitigation they would have provided to the GBG following their consultation? It would appear that the GBG are not in agreement with the way the Applicant had considered disturbance during the breeding season.</p> <p>OEMP [REP4-020] PW-BIO5 notes the production of a method statement, if works are to be carried out at a time and location that has the potential to disturb Schedule 1 breeding birds, ie construction works. We would hope that during the current discussions between the Applicant and the GBG that the birds behaviour, including response to disturbance, habitat and breeding requirements are all being built into the following updates of the OEMP.</p>	<p>With regards to the archaeological and GI works, please refer to the response to the response to paragraph 11.1.36 above.</p> <p>Highways England notes your comments. As previously stated within Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003], Highways England will undertake further consultation with the Great Bustard Group during both the preliminary and main works. At this point it is not necessary (or appropriate) to confirm detailed avoidance and mitigation measures.</p>

11.1.50	<p>18.2.41</p> <p>The Applicant has previously informed us of the construction of bunds around the perimeter of the compounds (MW-G28) to avoid visual intrusion and help to screen activity. We responded to this in our reply to [REP3-013] point 40.3.22. asking which of the compound areas the Great Bustards will see, but we have had no reply. However, it is not only the visual impact of the compounds on the landscape. It is also the visual impact of the construction works that will be taking place throughout the Scheme footprint, within close proximity of the Great Bustard nesting sites and feeding areas that is of concern. There is no detail of screening for the construction works itself.</p> <p>OEMP [REP4-020] has only been updated to include provision of nesting Great Bustards within the Scheme footprint. There are no specific measures to mitigate the impact of construction on the Great Bustards that are currently under a reintroduction project. There is nothing stating that Preliminary and Main works contractors will have gained satisfactory experience, through consultation with the GBG to ensure the necessary skills to detect and monitor the species are also included.</p> <p>In addition, no measures have been included to screen the Great Bustards from the general public with dogs using the new PRoW's.</p> <p>We look forward to reading the next updated version of the OEMP.</p>	<p>As stated within MW-G28, the bunds are to be incorporated around all of the construction areas. It would not be suitable to suggest specific locations from which great bustards may view the compounds as they are mobile within the landscape.</p> <p>With regards to further screening during the construction phase, please refer to MW-BIO8 of the OEMP [AS-085], which states that in the event that a nesting great bustard is found within 500m of the Scheme then liaison with the Great Bustard Group would be undertaken. This will aim to identify and agree the specific and appropriate measures and monitoring activities to be undertaken in order to avoid disturbance of the nesting pair. Measures could include an exclusion area from the nest, screened Herras fencing, placement of other objects that may impede line of sight, or other measures, depending on nesting location and will be confirmed and overseen by the ECoW, ECoW and other specialists will be required to have suitable skill and experience for their roles and would undertake any local familiarisation necessary regarding great bustards.</p>
11.1.51	<p>18.2.42</p> <p>Our main point, is that the errors the Applicant has made within the various DCO reports remain unchanged. As such, there is the real possibility that the main works contractor and other people looking to reference from these documents, will continue to use erroneous material. Those of us that know the correct grassland areas within</p>	<p>Highways England notes the comments, and it should be noted that the baseline data was correct at the time of survey (2016-2017). Further consideration of habitat creation will be undertaken during the detailed design stage.</p> <p>As stated within response to 18.2.42 of Comments on any further information requested by the ExA and received at Deadline 4 [REP5-003], Highways England notes this comment however confirms that the Normanton Downs RSPB reserve has signs on the fence line that prohibit members of the public</p>

	<p>the Scheme and the wording on Normanton Down Reserve signs, can interpret the reports. All others will be at a disadvantage.</p> <p>Perhaps this is why within item 18.2.32 above the Scheme is noted as providing improved east west connectivity within the footprint? Fields that are already grassland have been recorded in reports as arable, so without the Applicant doing any additional habitat creation the east west connectivity is improved just by amending this error! This will go on to be recorded as improvement rather than erroneous baseline data.</p>	<p>from entering the Reserve. There are various signs restricting access due to livestock and an information sign about the Reserve.</p>
11.1.52	<p>18.2.43</p> <p>The Applicant has misinterpreted our point in relation to meetings and engagement. We agree that there have been a number of meetings which have followed the Applicant's various stages of Scheme development. However, when we have asked for meetings to understand areas that are of key concern to our business, we have had to wait years for our requests to be accommodated –eg: a meeting to discuss water issues. So whilst there have been meetings, they have been to address the Applicants requirements, rather than to take on board the implications on our farming business.</p> <p>We agree that there have been provisional land values issued, but this was just before the Issue Specific Hearing in relation to Compulsory Acquisition. We are informed by our agent, that it is very unusual for the Applicant to have only initiated discussions at such a late stage in the Scheme development.</p> <p><u>Damage to barrow cemetery NHLE 1009618</u></p> <p>There was damage to Scheduled Monument SM10317/NHLE 1009618. The gate used by the archaeological survey team, has not been use for agricultural machinery for many years, due to the topography (with the monument banks). Therefore, any change in this area through use were obvious. We photographed the area</p>	<p>At the various meetings that have taken place there have been discussions around the landowner's key concerns and information has been provided at each of these meetings and following these meetings if it is not available at the time.</p> <p>In relation to the water issues meeting, Highways England has had to allow time for the water team to gather information from monitoring of boreholes, create models based on this information and draw conclusions. Following on from this, Highways England met with the landowner when it was possible to do so and provided accurate information. This liaison will continue pursuant to item MW-COM6 of the OEMP.</p> <p>In terms of land valuations discussions, these are something that will continue throughout and beyond the examination period.</p> <p>Regarding damage to barrow cemetery NHLE 1009618, to the Applicant's knowledge there was no damage caused to any scheduled monuments by its surveys. The scheduled monument NHLE 1009618 was inspected by Historic England and no further action was taken by them.</p> <p>All other matters, from the Applicant's perspective, were dealt with in a respectful and open manner during on-site discussions with the land owner at the time of the surveys and resolved as far as possible, including suitable compensation paid where required.</p>

	gouged by the tracked vehicle used by the Applicant, showing fresh chalk scars evident on the flank of the barrow	
11.1.53	<p>18.2.44</p> <p>The information we requested was pertaining to our holding and to better understand the survey requests. As is the case with other organisations that carry out surveys on our farm, that we maintain that the Applicant should provide us with copies of their data. The Applicant has provided us with information from time to time, but often the information is completely different from what we have asked for. The Applicant asks us to meetings to provide them with feedback, but if they do not provide us with the information we require to give informed feedback, this makes a mockery of the whole process. This is knowledge management rather than meaningful consultation with stakeholders.</p> <p>At the first meeting with the Applicant we outlined our cropping, livestock and farming calendar.</p> <p>This has proved a waste of time, as surveys have clashed with critical farming timetables. Surely the Applicant plans survey work far enough ahead to give us adequate notice if there is a need to carry out work at awkward times, then we can plan accordingly? Surveys have caused major disruptions to our farming business resulting in thousands of pounds of crop losses because the Applicant could not wait until after harvest. Often we have been threatened with a Section 172 notice, when we are in discussion over access or survey infrastructure. These discussions are paramount because our property was damaged during previous surveys. We are therefore trying to make sure that these scenarios do not happen again. I am sure that the Applicant would do the same if they were in our place.</p>	<p>Please see Highways England's response to Second Written Questions on Agriculture, specifically Ag.2.11 [REP6-019].</p> <p>Survey reports and data have been provided as soon as they have been available. However, this can take some time after carrying out the survey as the data has to be collated and interpreted, a report written up which then has to go through many internal checks before it can be made publicly available.</p> <p>Highways England aims to provide all landowners with as much notice as possible to consider access for surveys. Unfortunately, due to the programme it is not always possible to carry out these surveys when there are no crops on the ground. However, Highways England has paid reasonable compensation for crop loss and note that none of these are currently outstanding with Mrs Hosier.</p> <p>In respect of the use of S172 powers please make reference to page 13-11 of the Relevant Representations responses [AS-026]. We note that our preference for gaining access to land is through agreement with landowners, however where that has not been possible or project time constraints have been pressing, the use of s172 powers has been required.</p> <p>The issues raised in relation to the pre and post condition report is the first time we have been made aware of this and the pre and post condition surveys have been used to make payment for compensation up until now. However, if you wish to provide us with your own validated records this can be used alongside our own reports to support and inform future works.</p>

	<p>A number of the pre and post condition surveys provided have not been fit for purpose, being taken into the sun with shadows, or missing areas of the survey so rendering them inadequate. We have resorted to taking our own recordings of surveys in case we need to refer to them in any survey disputes. Nevertheless, some surveys reports have been very thorough.</p>	
11.1.54	<p>18.2.45</p> <p>The Applicant has not carried out tracer tests to assess the possibility of fissure connections to our private water supply.</p> <p>The Applicant has not produced a 3D model for the Scheme to show the structural geology and locate fissures and fractures. This would either back up or disprove the water model accuracy and its interpretations and provide more information to tendering contractors. 3D models such as Golders Fracman are recognised by mining companies to highlight potential problems so they can be solved ahead of the construction, thus saving time and money.</p> <p>If the Scheme is to proceed, the Applicant has a duty of care to ensure that there is an alternative water supply in place for our farm prior to construction. This will remove the risk of the Scheme to our farming business.</p> <p>We have just 24 hours' worth of water supply if we experience any problems.</p>	<p>Regarding 18.2.45 please see the response to this paragraph in Deadline 5 Submission - 8.36 - Comments on any further information requested by the Examining Authority and received at Deadline 4 [REP5-003] which set out why a detailed assessment and tracer testing of the operation of the private water supply boreholes is not necessary.</p> <p>The Applicant's view is that the information presented in the Environmental Statement is more than sufficient at this stage of the consents process and that a 3D model is not required. Please see Written Summary of the Oral Submission from Issue Specific Hearing number 4 (ISH4) regarding Flood risk, Groundwater, Geology and Water under item 5.1 [REP4-032]. Additional details are also provided in Deadline 6 Submission - 8.37.10 - Responses to the Examining Authority's Written Questions - Flood risk, groundwater protection, geology and land contamination [REP6-028] in response to items Fg.2.38, Fg.2.40 and Fg.2.51.</p> <p>Please see response to paragraph 11.1.11 regarding water supply.</p>
11.1.55	<p>18.2.46</p> <p>Comments received to Deadline 3 [REP-036] reference items 9.6.1 and 9.6.4 notes MW-WAT11</p> <p>We agree that the Applicant has compared the samples taken from groundwater monitoring boreholes of the Scheme with the limits of Drinking Water Standards for hazardous substances guidelines. However, their samples were not taken to DWI standards so had</p>	<p>It is agreed that the DWI results provide an independent set of sample results.</p> <p>Private borehole water has not been sampled. There are no significant changes to hydrology, private water supply, surface water quality or groundwater quality (water supply) during either the construction or operational phases of the Scheme so there is no <u>requirement</u> for monitoring at users' boreholes, notwithstanding that Highways England has offered to undertake it on Mrs Hosier's land</p>

	<p>differing sampling and storage methods. Therefore, it is unreliable to compare results to those of DWI. DWI requires samples to be delivered to the approved sampling lab within four hours of collection as the chemical components of the sample will begin to change after this time period. DWS tests for a suite of other chemicals as well as pathogens. The Applicant's sampling is sent to the lab and tested the following day.</p> <p>We have never suggested that sampling carried out by the Applicant should replace DWI analysis. This would not be legally acceptable.</p> <p>The Applicant has not taken quality samples of our private borehole water either under the Scheme sampling or DWS sampling criteria.</p>	<p>The Groundwater Management Plan aims to ensure that groundwater resources, including the supply and quality of groundwater, are protected during the construction and operation of the Scheme. Please also see the response in paragraph 11.1.62 below.</p>
11.1.56	<p>18.2.47</p> <p>As previously stated, the Applicant is passing most of the Scheme responsibilities onto the main works contractor. Yet it is the Applicant and not the main works contractor that has determined the necessary survey works and has then been responsible for interpreting the results. As such, there will be potential areas not assessed by the Applicant that will need to be addressed by the main works contractor.</p> <p>MW-WAT1 Notes the main works contractor responsible for all water and pollution elements of the Scheme construction.</p> <p>MW-WAT2 Notes the main works contractor is responsible for compiling a Water Management Plan</p>	<p>Please see response item 5.3.3 in Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-21].</p> <p>Although the contractor is responsible for the protection of the water environment during construction, the plans which contain the measures defined to do this are to be developed in consultation with the relevant statutory bodies and approved by the Secretary of State (Water Management Plan, Groundwater Management Plan and Emergency Preparedness and Response Plan (to include a Pollution Incident Control Plan)). As such, the contractor's proposals will undergo the necessary level of independent scrutiny to ensure they are adequate to protect the water environment. During the development of such plans, should gaps in survey data be identified, the contractor will be obliged to complete these to the required standard as identified by The Authority or the relevant body e.g. the Environment Agency, to secure approval for the plans.</p>
11.1.57	<p>18.2.47</p> <p>MW-WAT3 Site drainage. This includes references to dewatering discharge. We would like to see a reference to the prior assessment of the sites proposed for surface dewatering discharge. The suitability for water discharge areas needs to be assessed in relation</p>	<p>The main works contractor shall adopt construction techniques which minimise, so far as reasonably practicable, the need for and extent of dewatering and groundwater abstraction. In the event that dewatering is required, the main works contractor shall be responsible for obtaining the necessary approvals and permits to enable abstraction and discharge of</p>

	<p>to land management history to prevent pathogens being washed in to the groundwater.</p> <p>We are pleased to note that all samples of discharge will be analysed by the Environment Agency prior water discharge taking place, as well as measures for flood risk and effluent being taken into account.</p>	<p>pumped water in an approved manner (see MW-WAT8 of the OEMP submitted at deadline 8).</p> <p>Under MWAT-3 it is the main works contractor who has responsibility to ensure that site drainage meets the effluent and flood risk standards required by the sewerage undertaker and the Environment Agency, as appropriate, in accordance with the relevant permit, and will provide and maintain holding or settling tanks, separators and other measures as may be required to meet those standards. The main works contractor shall ensure that access is provided to the undertaker and Environment Agency so that samples of discharge can be obtained and analysed, and the flows verified as required.</p> <p>With these controls in place, consideration of the existing and previous land management and assessments will be able to be taken into account.</p>
11.1.58	<p>18.2.47</p> <p>MW-WAT4 Spill response. The main works contractor is responsible for preparing an Emergency Preparedness and Recourse Plan as well as Pollution Incident Control Plan. What responsibilities are the Applicant taking? Will liabilities be shared between the Applicant and main works contractor? If the Applicant has not brought all the potential issues to the main works contractor's attention prior to them accepting the contract this is failing under NEC3 and 4.</p>	<p>Development of mitigation/action plans for accidents/incidents will be developed by the Main works contractor in consultation with the Environment Agency and Wiltshire Council (as appropriate) in developing the Emergency Preparedness and Response Plan (MW-WAT4 of the OEMP [REP4-020]) which will be approved by the Secretary of State. As such, the contractor's proposals will undergo the necessary level of independent scrutiny to ensure they are adequate to protect the water environment. During the development of such plans, should gaps in information be identified which affects the robustness of the plan, the contractor will be obliged to complete these to the required standard as identified by The Authority or the relevant body e.g. the Environment Agency, to secure approval for the plans. In employing the contractor, Highways England will share the appropriate amount of information.</p>
11.1.59	<p>18.2.47</p> <p>MW-WAT5 Pollution incident monitoring There is no mention that any "actual significant pollution incidents" will be reported to private water abstractors so they can monitor their water supplies and seek to take remedial action.</p>	<p>An update to the OEMP has been made at deadline 8 in relation to liaison with abstractors in respect of pollution incidents.</p>

11.1.60	<p>18.2.47</p> <p>MW-WAT9 Ground treatment. Grouting to be agreed with Environment Agency. However, there is no noting that the main works contractor has to carry out surveys to assess the distance that the grout will travel along the rock fissures. We are told the pressures used for grouting will be monitored by the TBM head. We believe there is a need for surveys to establish the distance of grout travel in relation to various pressures and fissure width. Grout may block fissures so groundwater monitoring is not possible in some areas.</p>	<p>As explained in the response to Stonehenge Alliance [REP7-021], item 6.4.7, the properties and characteristics of the grout will be carefully selected to limit grout migration, dilution and other effects from groundwater and fissures in the chalk. This would be undertaken in accordance with best practice and as part of the risk management of the tunnelling works and will be controlled pursuant to item MW-WAT9 of the OEMP [AS-085] which requires EA approval of the materials used for ground treatment when more details of the construction methodology will be known.</p> <p>MW-WAT9 of the OEMP [AS-085] also requires the main works contractor to agree with the Environment Agency (in consultation with relevant parties) site-specific monitoring proposals for those sites where ground treatment will be used.</p> <p>MW-WAT10 of the OEMP [AS-085] requires the production of the Groundwater Management Plan where the contractor is required to outline how the groundwater resources are to be protected in a consistent and integrated manner.</p>
11.1.61	<p>18.2.47</p> <p>MW-WAT10 Groundwater Management Plan. See our response The Examining Authorities Second Written Questions at Deadline 6, question Ag.2.10</p> <p>In addition section d) “Development of baseline groundwater conditions and derivation of trigger levels and action levels/mitigation/action plans for exceedances and accidents/incidents.” This statement puts a massive responsibility onto the main works contractor, who will be undertaking these tasks using the Applicant’s reports.</p>	<p>Section d) refers to the Groundwater Management Plan proposed at item MW-WAT10 of the OEMP [REP6-011]. This requires the contractor to consult with Wiltshire Council and the Environment Agency in the development of the plan and obtain Secretary of State approval - the plan will therefore need to be robust, and this will be recognised by contractors who will be bidding for this large-scale tunnelled infrastructure project.</p>
11.1.62	<p>18.2.47</p> <p>The Applicant has not carried out any baseline monitoring of our private boreholes, or of some of those already installed in the landscape, so how can the contractor agree to these clauses?</p>	<p>Paragraph 18.2.47 [REP5-003] states that, as set out in the Environmental Statement, Chapter 11, Road Drainage and the Water Environment [APP-049], section 11.9, the assessment shows no significant changes to hydrology, private water supply, surface water quality or groundwater quality</p>

	<p>MW-WAT14 Relates to <u>Surface water drainage</u>.</p>	<p>(water supply) during either the construction or operational phases of the Scheme.</p> <p>There is therefore no <u>requirement</u> for monitoring at users' boreholes or elsewhere other than to demonstrate that the Scheme is not having a significant effect on groundwater flow or quality.</p> <p>The Groundwater Management Plan aims to ensure that groundwater resources, including the supply and quality of groundwater, are protected during the construction and operation of the Scheme. The scope of the Plan will cover representative boreholes and not necessarily user boreholes.</p> <p>Highways England has agreed to monitor water levels and water quality at users' boreholes at the request of the users. If needed there is a long term record of water quality at the boreholes through the DWI testing which users could refer to if they wish to demonstrate changes in water quality as a result of the Scheme. In the same vein, an update has been made to the OEMP at Deadline 8 to provide for the Groundwater Management Plan to have specific regard to private water supplies.</p> <p>Although no significant effects are predicted Highways England has been working with and will continue to work with Wessex Water and other statutory utility providers as required to ensure that water supplies are protected during the construction and operation of the Scheme.</p>
<p>11.1.63</p>	<p>18.2.47</p> <p>WM-WAT15 <u>Monitoring of Water Resources</u>. See our response The Examining Authorities</p> <p>Second Written Questions at Deadline 6, question Ag.2.10.</p> <p>In addition to this the item notes “ <i>The main works contractor shall, where changes in groundwater levels are predicted to occur as a result of construction activity, which would be considered significant using the methodology defined in the groundwater management plan, undertake additional site investigations.</i>” Statements such as this would set alarm bells ringing if I was a potential tendering contractor. This just underlines the complexity of the geology within</p>	<p>Contractors are familiar with site investigations and there is no reason why this would be alarming. The requirement to assess the effects of construction activity once the detail of the design and construction methodology is known is as expected and allowed for through the OEMP.</p>

	<p>this landscape and the reluctance of the Applicant to carry out tracer tests and 3 D modelling. The Applicant should not be relying on the contractors to carry out additional survey works, they should have done sufficient surveys up front to be aware of all potential problems.</p> <p>The following references are also in respect of mitigation for water supplies although they have been omitted from the Applicants list.</p>	
11.1.64	<p>18.2.47</p> <p>MW-WAT8 <u>Dewatering and abstraction</u>. <i>“the main works contractor shall adopt construction techniques which minimise, so far as reasonably practicable, the need for and extent of dewatering and groundwater abstraction.”</i></p> <p>What will happen if the Scheme shows a need for dewatering and the Environment Agency do not agree to this due to the level of dewatering being significantly more than has been identified within the groundwater risk assessment? Would dewatering just go ahead under these situations, with all private water abstractors being provided with alternative supplies?</p>	<p>Please see response to item 5.3.3 in Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-021].</p> <p>The Applicant considers that the approval/permitting procedures set out in the OEMP and secured by requirement 4 of the draft DCO [REP6-005] are sufficient to ensure any required dewatering is adequately planned for, managed and controlled.</p>
11.1.65	<p>18.2.47</p> <p>MW-WAT11 <u>Management of impact on abstraction boreholes</u>. Please see our response to The Examining Authorities Second Written Questions Deadline 6, question Ag.2.10.</p> <p>In addition, under point a) how will the contractor establish where any intermediate monitoring boreholes should be placed if the Applicant has not carried out any 3D models of the Scheme to note the fissure and fracture locations?</p>	<p>Please see response to item 5.3.3 in Comments on any further information requested by the Examining Authority and received at Deadline 5 and 6 [REP7-021].</p> <p>As set out in the Environmental Statement, Chapter 11, Road Drainage and the Water Environment [APP-049], section 11.9, the assessment shows no significant changes to hydrology, private water supply, surface water quality or groundwater quality (water supply) during either the construction or operational phases of the Scheme. Highways England has been working with and will continue to work with Wessex Water and other statutory utility providers as required to ensure that water supplies are protected during the construction and operation of the Scheme. 3D models are not a pre-requisite for locating boreholes. Boreholes are used to develop 3D models. Provisions for the protection of private water supply are included in item MW-COM6 of the OEMP.</p>

11.1.66	<p>18.2.47</p> <p>MW-WAT13. <u>Flood Risk – general provisions</u>. We note with concern <i>“At the end of construction...pile walls where required will be removed, cut down or piped through routes provided to prevent the potential build-up of groundwater.”</i></p> <p>Do statements like this not ring alarm bells in potential tendering contractors? This just highlights the complexity of the geology within this landscape and the reluctance of the Applicant to carry out tracer tests and 3 D modelling shows a lack of responsibility.</p>	<p>The OEMP items, such as MW-WAT13, include measures to ensure potential impacts are mitigated. The statement quoted in italics relates to Temporary Works which are installed by the Contractor to assist in construction of the Main Works. As the term implies, such works are not ‘permanent’ and the statement simply re-iterates the Contractor’s obligation, on completion of the Main Works, to remove the Temporary Works or, if this is not technically possible, to modify them in such a way that the ground and groundwater conditions are not affected.</p>
11.1.67	<p>18.2.47</p> <p>The Applicant’s response also states that they have been working with Wessex Water to ensure water supplies are protected during construction and operation of the Scheme. Surely the Applicant means working with the Environment Agency as this is the authority responsible for the groundwater protection?</p> <p>We stand by our comments, that the Applicant has not fully assessed the complex structural geology and hydrogeology in relation to this Scheme.</p> <p>They are relying on water modelling which we maintain has too great a margin of error to pick up any potential problems. No tracer tests or 3 D modelling have been carried out to show up fissures and fractures. This, in combination with the Applicant’s omission to commit to installing alternative water supplies to those who are groundwater reliant, gives us no confidence that the risks to our businesses have been fully considered.</p>	<p>We have been working with Wessex Water regarding contingency measures to avoid / minimise the loss of interruption of supplies should unexpected problems occur. This work is being undertaken in advance of the obligations on the main contractor required by MW-WAT3, MW-WAT11 and MW-COM6 of the OEMP issued at deadline 8.</p> <p>In addition to the work with Wessex water, we also continue to work with the Environment Agency regarding the protection of groundwater resources and requirements for the Groundwater Management Plan (MW-WAT10 of the OEMP issued at deadline 8).</p> <p>For the points relating to adequacy of the assessment, tracers and 3D models please see response in paragraph 11.1.54. For water supply please see response in paragraph 11.1.11 above.</p>

11.1.68	<p>18.2.48</p> <p>Our private boreholes have yet to have monitoring equipment installed. During May the Applicant assessed our boreholes for work required to accommodate water monitoring apparatus.</p> <p>Preliminary works have not been carried out, so there can be no monitoring until after this time.</p> <p>From recent survey requests by the Applicant, we are aware that Wessex Water has been approached for rerouting mains water supplies in relation to the realignment of Rolleston Crossroads. However, this exercise is not for providing water to our farm. Wessex Water would need to know our water supply and pressure requirements prior to making any preliminary assessments for a mains connection.</p> <p>OEMP [REP-006] MW-COM6 requires rewording and additions for it to provide security for our farm water supply. See our response to the Examining Authorities Second Written Questions at Deadline 6 question Ag.2.10.</p>	<p>In relation to the private borehole monitoring, the initial visit carried out in May 2019 was to assess the boreholes and understand what work would be required to install the monitoring equipment. This has now been assessed and a request was sent on the 14/08/19 to arrange a suitable time for this monitoring equipment to be installed.</p> <p>An updated version of the OEMP [AS-085] was submitted to PINS on 19 August 2019 (with item MW-COM6) now requiring the contractor to produce Water Supply Statements for landowners / occupiers who rely on private water supplies which could be affected by the Scheme. These shall identify how water supply is to be maintained in the unlikely event that existing supplies are adversely affected as a consequence of the works. Highways England maintains that it is not obliged to provide a mains water connection to landowners / occupiers as a precautionary measure given the low chance of adversely affecting groundwater as a consequence of the Scheme.</p>
11.1.69	<p>18.2.49</p> <p>We do not know how fencing will prevent wind whipping of stockpiles. Will all stockpiles be covered to prevent silt being blown, or will it only be the stockpiles in location of public locations? There are references to bunds being seeded around the works compound, but will seeding be carried out in other areas as well?</p>	<p>PW-AIR1 and MW-AIR1 of the OEMP [AS-085] require contractors to use best practicable means to manage dust. Specific measures shall be based upon industry best practice, including the measures listed in the Institute of Air Quality Management's (IAQM) Guidance on the Assessment of Dust from Demolition and Construction. These measures will be set out in more detail in the CEMP.</p> <p>Normal practice, when working with chalk, is to ensure that the material is placed in fill as soon as possible after excavation. Normally the material is hauled directly from the point of excavation to the fill location. There is, therefore, no expectation that the excavated chalk material will require to be stockpiled for any significant length of time.</p> <p>Tunnel spoil will be processed in the Slurry Treatment Works, and the end-product 'cakes' will be stockpiled for no more than a few days, given the limited storage space and the expected rate of production of tunnel spoil.</p>

		<p>Again, there is little chance of the material, which will be in a relatively 'wet' condition, from drying out over this period.</p> <p>Should dust be at risk of becoming an issue, under conditions of extreme hot, dry weather, it is normal construction practice simply to spray the surface to suppress the dust.</p> <p>Vegetation will be established on temporary bunds around construction compounds and on topsoil storage mounds at all locations.</p>
11.1.70	<p>18.2.50</p> <p>Our concerns remain with our private borehole supply, so whilst the other boreholes are being monitored in the wider area, it is the direct supply into our boreholes that is critical to us. Even though the results of the monitoring have been assessed and found to be in line with the ground water model, this is not specific to our borehole supplies. Fissure flow could be hampered in the location of our borehole, yet this might not be detected on the monitoring boreholes.</p> <p>Monitoring of our private boreholes that supply cottages and our farm business has yet to take place so there will be limited baseline data on our farm borehole supply.</p> <p>As previously stated, we have concerns with the groundwater model, which uses data over the large Wessex Basin area rather than that which is specific to the small corridor the Scheme occupies.</p>	<p>Please see response in paragraph 11.1.62 above, which covers the point on monitoring.</p> <p>As stated at paragraph 18.2.45 of REP5-003, there is no evidence of extensively connected fissures and fractures or karstic flow which would allow direct flow from the Scheme to water supply boreholes.</p> <p>The groundwater model is also discussed in paragraph 18.2.45 which explains how each model cell is represented with aquifer properties appropriate to local data and the hydrogeological domain, such as interfluvial, dry valley, river valley. The ES shows the calibration is good and has been accepted by experienced groundwater modellers from the Environment Agency and Wiltshire Council's groundwater modelling consultants.</p> <p>The management of private water supplies, including consideration of monitoring, is provided for in item MW-COM6 of the OEMP.</p>
11.1.71	<p>18.2.51</p> <p>The current A303 is at a much higher level than the existing ground form in the location of the western portal. However, we understand from the Applicant's response, that this current topography will remain, but the slopes from the top of the retained cutting will be graded.</p>	<p>The existing A303 will remain, and approximately 2.5m of earthworks above the retained cutting for the new A303 will be graded at 1:2 slopes and be grassed slopes, as stated in Outline Environmental Management Plan D-CH5 [AS-085].</p> <p>General Arrangement Drawing [APP-012] sheet 6 indicates the extent of re-grading around the western portal and the position of the existing A303.</p> <p>The combination of the retaining wall with the 2.5m grassed slopes above will enable the Scheme to be integrated into the existing landform.</p>

11.1.72	<p>18.2.52</p> <p>The Applicant agrees that there will be views of the entrance of green bridge 4 and the open cutting at close range, but the view provided within CH010 is from some distance away, rather than at close range. Therefore, the green bridge will be seen within the cultural heritage landscape as a modern feature at both close and distant vantage points.</p>	<p>Close range views have been undertaken and submitted as a dynamic sequence of views [AS-079 to AS-084].</p> <p>OEMP D-CH23 requires the finished ground levels on Green Bridge No. 4 to replicate the existing ground levels, subject to the limits of deviation, such that the green bridge itself will be integrated in the landscape. The retaining walls and design of the approach to Green Bridge No. 4 are also covered by a number of design commitments and principles in the OEMP to achieve a high quality and imaginative design which respects and responds to the historic landscape as well as having due consideration of the objectives and policies of the WHS.</p> <p>Therefore whilst the Scheme will be 'new' and 'modern' by virtue of it being implemented in the future, it will not be seen within the wider cultural heritage landscape nor distant viewpoints because it is below ground, such that focus of views will be the cultural heritage landscape, including the inter-visibility between monuments which is afforded by Green Bridge No. 4. This is also in the context of traffic on the 'modern' existing A303 being highly visible across the landscape and being removed as part of the Scheme to either in tunnel or deep cutting in this part of the WHS.</p>
11.1.73	<p>18.2.53</p> <p>We look forward to seeing the viewpoints east and west from the green bridge 4 in due course. We have concerns that although there is the intention within the DCO to have dimmer controlled lighting with minimum light spill outside of the bridge footprint, there is the potential for changes later, should it be proved there is a safety risk. Therefore, although the intention is set within the DCO it is not necessarily a long-term certainty.</p>	<p>As noted in the response to the ExA's Written Questions - Landscape and Visual [REP6-030], the lighting under Green Bridge No. 4 will only occur between dawn and dusk, be varied, and be designed to minimise light spill outside of the bridge footprint.</p> <p>This is a commitment in the OEMP and so compliance with it is secured by the DCO and it therefore must be followed.</p> <p>Whilst it is the case that the operational performance and safety of the scheme will be monitored, any options to deal with any safety issues that arise would have to be developed in compliance with the commitments and processes in the OEMP.</p>
11.1.74	<p>18.2.54</p> <p>We note that the location of the views for visual assessment in respect of green bridge 4 was agreed with National Trust and</p>	<p>The Applicant notes M&R Hosier's response.</p> <p>The Applicant respectfully does not agree with the Hosier's conclusions, with the beneficial effect to the OUV set out within the Environmental Statement</p>

	<p>Wiltshire Council. However, the area of green bridge 4 is not within the ownership of NT or Wiltshire Council. As such, they would not be in a position to comment unless they had requested to view the area on site. The Cultural Heritage Settings Assessment [APP-218] paragraph 2.6.1 states “<i>All heritage assets, or Asset Groups, were visited where access could be obtained from the landowner....This enabled all assets to be adequately observed within their current environment, their place within the landscape to be understood including physical and visual interconnections with other assets and topographical features, and the impacts of the Scheme to be assessed.</i>” During archaeological and geotechnical investigations, the Applicant has had the opportunity to assess the views from green bridge 4 in situ in respect of intervisibility of the monuments.</p> <p>We maintain that the Scheme does not result in a beneficial effect to the OUV of the WHS as there are still four lanes of carriageway and portals within the WHS.</p>	<p>and the Heritage Impact Assessment [APP-195]. For example, it would substantially reduce the negative impacts of roads and traffic on the WHS. The Scheme would encourage exploration of the landscape on foot through improved accessibility and the downgrading of both the A303 through the WHS and redundant sections of the A360 would introduce new rights of way for non-motorised users. In conclusion, the Scheme would bring substantial benefits to large parts of the WHS, in particular to the tunnel section where benefits would be experienced by a large number of Asset Groups and discrete and isolated heritage assets that contribute to the OUV of the WHS.</p>
<p>11.1.75</p>	<p>18.2.55</p> <p>We stand by all our comments above.</p> <p>Although Wiltshire Council has the necessary legal powers to control the antisocial behaviours on the byway, it seems unable to do so. This is already having a negative impact on the WHS with visitors reluctant to use some stretches of the byways. It seems that organisations are only interested in what they can take from the WHS, but are unwilling to maintain it.</p> <p>As previously stated and already known by the Applicant, fencing does not prevent access to private land, especially when the Applicant has already promoted the southern part of the WHS for roaming and exploring.</p>	<p>See response to item 40.7.20 - 21 in the Comments on Written Representations [REP3-013].</p> <p>40.7.20 The management and enforcement of access across the WHS is a matter for Wiltshire Council (as the local highway authority with responsibility for the public rights of way in its administrative area), as well as landowners, including the National Trust and English Heritage. The existing highway boundaries will remain as at present.</p> <p>40.7.21 Fences along public rights of way would be provided to prevent access onto private land, grazed grassland or the highway. Public access to bridleways would be controlled by equestrian gates which are too narrow for most vehicles to use. Public access to restricted byways would be controlled by Kent carriage gaps which are designed to prevent entry by vehicles.</p> <p>There is no suggestion in any material published by the Applicant associated with the Scheme that roaming and exploring in the southern part of the WHS should be on private land.</p>

11.1.76	<p>18.2.56</p> <p>We are of the opinion that the byways will facilitate antisocial practices within the area which are not in line with the Government's policy. This is already demonstrated by the practices on the current byways within the area.</p>	<p>See response to item 40.7.9 in the Comments on Written Representations [REP3-013].</p> <p>40.7.9 The management and enforcement of access across the WHS including byways 11 and 12 is a matter for Wiltshire Council (as the highways authority with responsibility for the public rights of way), as well as landowners, including the National Trust and English Heritage. Fences along public rights of way would be provided to prevent access onto private land, grazed grassland or the highway. Public access to bridleways would be controlled by equestrian gates which are too narrow for most vehicles to use. Public access to restricted byways would be controlled by Kent carriage gaps which are designed to prevent entry by vehicles (except for agricultural vehicles who have been permitted access), all embedding good design measures into the project.</p>
11.1.77	<p>18.2.57</p> <p>"Stranded wire fences with barbed wire strands as necessary" would not be adequate along PRow. This will not prevent access by people and will certainly not keep dogs out. With the Scheme promoting biodiversity, the Applicant has a duty to ensure that the wildlife that it seeks to encourage into the area has some protection from dogs. This is especially important as most dog walkers have their pets "off lead".</p>	<p>Item MW-COM1 of the OEMP requires the ALO to discuss fencing requirements with landowners so this will be a matter of detailed design within the context of the commitments, principles and consultation processes set out in the OEMP.</p> <p>Where appropriate, fencing requirements of landowners are being recorded as part of the Position Statements.</p>
11.1.78	<p>18.2.58</p> <p>As demonstrated at the ETRO on byways 11 and 12 from summer solstice 2018 to winter solstice 2018, the trial bikes were still able to use the byways via the Kent Carriage gates. No doubt this practice will continue with no enforcement from Wiltshire Council. For the Scheme objectives to be achieved there needs to be an agreement on WC's behalf to enforce their authority on the PRow's.</p>	<p>The management and enforcement of access across the WHS including byways 11 and 12 is a matter for Wiltshire Council (as the highways authority with responsibility for the public rights of way), as well as landowners, including the National Trust and English Heritage. It would not be appropriate for Highways England to take on this responsibility for Wiltshire Council, given the differing statutory roles of the two organisations.</p>

12 Jon Morris (REP7-055)

12.1	Comments on Second Written Question responses	
	Matter Raised	Highways England's Response
12.1.1	<p><i>[Re. Applicant's response to Tr.2.3]</i></p> <p>1.1. ... I would expand on previous submissions and comment on the Applicant's deadline 6 response: "Deadline 6 – 8.37.14 Responses to the ExA's Written Questions issued on 5 July 2019 - Traffic and Transport (Tr.2) - July 2019."</p> <p>1.2. The quote below is extracted from the Applicant's documents ...</p> <p>"The CVR's assessment of value for money does not form the basis of the Examining Authority's (ExA) assessment of the heritage impacts of the Scheme, which is done in the context of the National Policy Statement for National Networks (NPSNN), Environmental Impact Assessment (EIA) and the World Heritage Site (WHS) Convention."</p> <p>1.3. The NPSNN states:</p> <p>"4.4 In this context, environmental, safety, social and economic benefits and adverse impacts, should be considered at national, regional and local levels. These may be identified in this NPS, or elsewhere."</p> <p>1.4. Where a scheme would have both positive and negative effects, the Inquiry has to conduct a balancing exercise. If discrepancies exist in the evidence, and those discrepancies can not be tested by the Inquiry, a true assessment may not be possible.</p>	<p>The Applicant does not consider that there are discrepancies in the CVR, which was undertaken robustly. Please see our responses to Stonehenge Alliance and Mr Morris throughout the Examination [REP4-036, REP5-003 and REP7-021] on this topic and the role of the CVR within the Examination process.</p>

	<p>1.5. The quantification of the heritage benefit is the CVR evidence provided by the Applicant. Therefore, the evidence of benefit (the CVR) that was presented to the Inquiry appears to me to be a material consideration.</p> <p>1.6. Where potential discrepancies exist, especially discrepancies that The Secretary of State may not have been aware of when making a funding decision, it seems to me that the wider public interest is further served by treating the CVR evidence as a material consideration.</p>	
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13 The Blick Mead Project Team (REP7-051)

13.1	Comments on dDAMS (REP6-014)	
	Matter Raised	Highways England's Response
13.1.1	<p>The strategy proposed for ploughzone artefact collection (pp. 84-85, sections 6.3.11-6.3.18) is still wholly inadequate and would result in the loss of approximately 500,000 artefacts and the associated information about the prehistoric activities from which they derive. This is an unacceptable loss for the WHS.</p> <p>This matter was discussed at length at the Scientific Committee meeting of 2 July where the committee were overwhelmingly in favour of 100% sampling of topsoil within the western and eastern approaches within the WHS. Yet this recommendation has not been taken up in the updated dDAMS.</p>	<p>The revised dDAMS submitted at deadline 7 includes revised strategies for Ploughzone Artefact Collection [REP7-019, paras. 5.3.29 – 36; 6.3.11 – 18] and Artefact Recovery [REP7-019, para. 6.3.28 – 34], and both anthropogenic and natural features will be investigated [REP7-019, Excavation Sampling Strategy, para. 6.3.41 – 49; 6.3.50 – 52]; REP7-019, Section 6.7 Strategy for Geo-archaeological Investigation].</p> <p>As previously noted, <i>“With regards to 100% sampling of the topsoil, Highways England disagree that every archaeological intervention within the WHS undertaken recently has required 100% sieving of the topsoil. This has been confirmed in discussions with Wiltshire Council and the National Trust. In terms of the opinion of the Scientific Committee in this regard, we also note that the Scientific Committee is made up of 13 independent experts in the archaeology of Stonehenge who do not all agree with regards to the need for 100% sieving of the topsoil. Each individual member of the Scientific Committee has their own independent opinions on this.”</i> [REP5-003, para. 18.2.19].</p> <p>With regard to the concept of 100% sampling, please see Highways England's previous response to Mark Bush for Consortium of Archaeologists in Comments on any further information requested by the ExA and received at deadline 4 [REP5-003, para. 34.1.17 & 34.1.32] and Highways England's response as recorded in its written summary of oral submissions made at ISH2 in relation to agenda items 7 (i) and (ii) [REP4-030] regarding the developing sampling strategy for the ploughzone artefact scatters as set-out in the draft DAMS submitted at Deadline 4 [REP4-024]. This was also discussed at the issue specific hearing on 21 August 2019, as recorded in the Applicant's written summary of oral submissions in relation to agenda item</p>

		<p>5.4 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS was explained.</p> <p>The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS.</p> <p>The Applicant has previously responded to the submission in relation to the suggested loss of 500,000 artefacts in the written summary from ISH2, Agenda Item 7(i) and (ii) [REP4-030].</p>
13.1.2	<p>At paragraph 6.3.15, the dDAMS states that 'statistical analysis of the distribution of the artefacts recovered in the 1% evaluation test pit sample... will be developed to inform the identification of a representative sample size and distribution'. Yet previous archaeological excavations west of Stonehenge in 2008 by the Stonehenge Riverside Project have demonstrated that any sampling of less than 50% across entire excavated areas has an insufficient probability of recovering enough diagnostic artefacts to allow characterisation and dating of the human activities that survive only as these distributions of stone tools and other artefacts in the ploughzone. Only 100% sampling provides full recovery of the diagnostic lithic artefacts. These make up less than 2% of the lithic assemblage; without a suitable sample of these diagnostic stone tools, the dating and characterisation of the human activity is simply not possible. These ploughzone assemblages are predominantly the only surviving prehistoric remains in these affected areas of the WHS.</p>	<p>Please see the revised paragraph 6.3.15 in the dDAMS submitted at deadline 7, which sets out the reflexive approach to the sample size, in order to determine an appropriate percentage of sampling, in consultation with heritage stakeholders. The updated proposals provide for "[...] a reflexive strategy for further recovery sampling of the ploughzone will be developed as an iterative process at site consultation meeting(s) between the Archaeological Contractor, Wiltshire Council and Historic England, the TPA and, for sites within the WHS, HMAG [...]. This will examine lithic material concentrations and areas which the distribution plots suggest may be transitional between areas of activity. Statistical analysis of the distribution of the artefacts recovered in the 1% evaluation test pit sample, combined with the trial trench ploughzone samples and fieldwalking results (where available) will be developed to inform the identification of a representative sample size and distribution, in consultation with Wiltshire Council and Historic England and, for sites within the WHS, HMAG. In some areas, a sample of up to 100% of the artefact content of the ploughsoil may be necessary, combined with a systematic sample to capture background distributions and transitional areas. The strategy will adopt a reflexive approach such that the sample size may be increased locally in response to the results of the systematic sampling." [REP7-019, para. 6.3.15].</p>
13.1.3	<p>The current requirement for 100% sampling of ploughsoil on 1m grids in areas of high potential within the Stonehenge and Avebury WHS, enforced by archaeological curators (County Council, Historic England, National Trust), should apply to all work within the WHS,</p>	<p>As previously stated, "With regards to 100% sampling of the topsoil, Highways England disagree that every archaeological intervention within the WHS undertaken recently has required 100% sieving of the topsoil. This has been confirmed in discussions with Wiltshire Council and the National Trust."</p>

	<p>including development projects. In addition, no one area within the road's footprint in the WHS is any less important than any other. We cannot have one rule for research excavations and another rule for others within the WHS.</p>	<p>[REP5-003, para. 8.2.19]. See also the Applicant's written summary of oral submissions in relation to agenda item 5.4 from the issue specific hearing on 21 August 2019 (submitted at deadline 8), where the Applicant's iterative and reflexive approach to sampling in the DAMS is explained. Both the National Trust and Historic England indicated at the issue specific hearing on 21 August 2019 that it was not correct that a 100% industry standard is applied, nor is there a blanket approach to requiring 100% sampling in every case.</p> <p>The Applicant has responded previously to the point regarding the sampling levels within the WHS [see REP5-003 paragraphs 34.1.17, 34.1.28 and 18.1.29]. The Applicant has consulted extensively with HMAG members to identify a reasonable and proportionate approach to archaeological mitigation which is as set out in the deadline 8 submission of the DAMS, including a reflexive strategy to archaeological sampling.</p>
13.1.4	<p>Highways England appears to be unwilling to meet the required archaeological standard of 100% ploughzone recovery in the WHS. Since this has been standard practice in both Stonehenge and Avebury areas of the WHS for the last ten years, they should have known all along and should have planned for this from the beginning. Their preparations have been totally inadequate, lacking adequate early consultation on this standard practice within the WHS. The scale of the work required is indicative of the enormous extent of the destruction proposed within the WHS. HE probably sees the huge scale of 100% ploughzone recovery as unfeasible. Yet we do not accept that they have carte blanche to destroy archaeological evidence in circumstances where any other archaeologist would be required to meet the industry standard, simply because of the huge size of the area affected.</p>	<p>Please see responses above regarding 100% sampling.</p> <p>The Applicant disagrees that 'preparations have been totally inadequate, lacking adequate early consultation'. With regard to early consultation and planning, the Applicant has been engaging with HMAG and its members since 2015 and the Scientific Committee since it was formed in 2017. The draft DAMS sets out an appropriate strategy for ploughzone artefact sampling REP7-019, paras. 5.3.29 – 36; 6.3.11 –18]. The DAMS has been updated for submission at deadline 8.</p> <p>With regard to the "industry standard", as noted in the Applicant's Comments on Written Representations submitted at Deadline 3, "All archaeological work has conformed to Chartered Institute for Archaeologists' (ClfA) Standards and Guidance and has been undertaken in accordance with the relevant guidance, including DMRB Volume 11, Section 3 Part 2 (http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20807.pdf), and with full consideration of the Research Framework for the Stonehenge, Avebury and Associated Sites WHS (2016) (http://www.stonehengeandaveburywhs.org/assets/Stonehenge-Update.pdf). The scope of the field work programme has been developed in consultation with Wiltshire Council Archaeology Service and the Heritage Monitoring Advisory Group." [REP3-013, para. 40.4.12]. Please also see responses in paragraph 13.1.3 above in relation to the suggestion that there is a "required</p>

		<p>archaeological standard of 100% ploughzone recovery” and that there has been a “standard practice” in the WHS for the last 10 years.</p>
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14 Roger Upfold (AS-088 and AS-091)

14.1	Additional Submissions	
	Matter Raised	Highways England's Response
14.1.1	<p>On behalf of cyclists and other NUMs, and in the apparent absence of specific content on the following issues in the draft DCO, I make a formal request in relation to the detailed content of the final DCO for the Stonehenge/A303 scheme, that it includes legally binding design and construction details (at minimum in the form of precise functional objectives to be achieved) on the characteristics of the new and improved Byways, Restricted Byways and Bridleways and their highway crossing points, with particular reference to: minimum widths, the nature of their surfaces (especially where they must be 'bound' to meet specific user group needs, as we have in previous submissions highlighted), drainage and vegetation aspects, to meet the needs of all NUMS both in the near future and much longer term, including likely growth in their use by NUMs because if these matters are not covered in enough detail by the DCO and left to the detailed design stage there is a danger that the needs of NUMs may not be adequately met in the face of economic or other challenges/requests, and also because Wiltshire Council as the inheritor of these PRoW may be put in difficulties in meeting their legal responsibilities for their long term upkeep, especially those arising from climate change.</p> <p>The reasons for making this request are as follows:</p> <ul style="list-style-type: none"> whereas the new and modified/improved roads of various classifications must meet established highway design and construction standards, it is my understanding that the legal definitions of public rights of way do not in themselves 	<p>Thank you for your comments.</p> <p>All the new Public Rights of Way (PRoW) proposed along the length of the Scheme would be constructed in a way that will make them fit for all the uses permitted by their designated status.</p> <p>Highways England has developed the design to a level that enables it to identify the Scheme's land requirements and to assess its environmental impacts. The detailed design of the Scheme will follow, if development consent is granted, with the appointment of the contractor. This is the industry standard approach to developing significant highways projects.</p> <p>Highways England requires a proportionate degree of flexibility, within the limits of deviation which delimit the parameters of the environmental assessment, to develop the detailed design of the Scheme. It is imperative that the consent has sufficient flexibility built-in to ensure that the Scheme can be implemented, to deliver value for money while still ensuring the high level of mitigation required. As such, the development consent order itself does not specify widths of public rights of way or other aspects of its detailed design. This is the industry standard approach to developing significant highways projects.</p> <p>In this context, Highways England has given a number of legally-binding commitments to aspects of the design of public rights of way for the Scheme. These are set out in the Outline Environmental Management Plan [AS-085] ("OEMP"), with which Highways England would be under a legal duty to comply by virtue of paragraph 4 of Schedule 2 to the DCO.</p> <p>The key commitments are as follows:</p>

	<p>specify minimum design and construction standards, eg on issues such as minimum width, surface characterises, drainage or other aspects such as vegetation encroachment from each side/overhanging (for example, established guidance appears to only refer to: "Maintenance should be such that ways are capable of meeting the use that is made of them by ordinary traffic at all times of the year." and not their inherent design (see 6.5 of DEFRA Rights of Way Circular (1/09) available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69304/pb13553-rowcircular1-09-091103.pdf),</p> <ul style="list-style-type: none"> that local authorities such as Wiltshire Council have very limited and finite resources for their rights of way network which understandably they struggle to look after in the current and foreseeable economic climate (eg WC draft CAF paper available at: http://www.wiltshire.gov.uk/downloads/16501), and so need to 'inherit' as a result of schemes such as this the highest quality robustly constructed facilities to enable their long term maintenance at minimum cost to facilitate anticipatable future demand by increasing NUM use, especially that likely to arise from the scheme's removal of existing severance caused by the current surface A303 and other busy highways within and near to the WHS, and its promotion as an much improved landscape destination of visitors, <p>and with the likely effects of future climate change (highlighted in the above WC CAF draft), the need for well designed and constructed facilities which are resilient in the face of more extreme weather effects arising from increasing average global temperatures, eg higher localised rainfall events with consequences for flooding and vegetation growth.</p> 	<ul style="list-style-type: none"> D-CH14 – provision of fencing and surfacing within the World Heritage Site ("WHS") shall be developed in consultation with the National Trust, Historic England, English Heritage Trust and Wiltshire Council; D-CH26 Any bound surface on PRoW within the WHS shall be a maximum of 3m in width. The bound surface on the PRoW in the WHS shall be suitably coloured at year one of operation to be visually recessive and sympathetically integrated within the WHS. Trial panels shall be constructed early in the construction period and at least one year in advance of the surface being laid. Prior to the surface being laid, the Authority shall consult with the members of HMAG on the proposed colour of the surface of the PRoW in the WHS taking into account the result of the trial panels. PRoW/PMA in WHS shall not have raised edgings, surface markings, lighting, benches, litter bins or other such street furniture. The surface of the PRoW shall be agreed with the adopting authority where relevant. <p>In addition to the design commitments, the OEMP sets out further design principles:</p> <ul style="list-style-type: none"> P-PRoW1 – Public Rights of Way to have a bound surface where appropriate to their use. Within the WHS, material finishes to be sympathetic to the setting of the WHS and suitable to accommodate use by, as appropriate, agricultural and land management vehicles, carriages, equestrians, cyclists and pedestrians, including people with impaired mobility, wheelchair users and parents with buggies and children. Appropriately vegetated verges to be provided between the surfaced area and adjacent land boundaries. P-PRoW4 – No gates on byways open to all traffic. On restricted byways full width gates with Kent Carriage Gaps to be used based on details in BS5709, the Manual of Contract Documents for Highway Works – Highway Construction Details, and in accordance with the Design Manual for Roads and Bridges and the relevant elements of the 'Advice on Gate Installation' and 'Advice on vehicle Barriers' published by the British Horse Society. Gates to be sufficiently wide and appropriately placed to accommodate authorised users as necessary, including agricultural vehicles and other agricultural machinery and appropriate locking measures to be employed to
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		<p>ensure that those entitled to exercise rights of vehicular access over restricted byways would be capable of doing so freely. All gates and barriers, where required as limitations on the free passage of the public along footpaths, bridleways and restricted byways shall comply with the current British Standard 5709; Gaps, gates and stiles.</p> <p>Further design commitments and principles in relation to the public rights of way are set out in the OEMP. Additionally, the OEMP sets out a process for consultation with heritage bodies on the detailed design of the public rights of way within the WHS.</p> <p>In respect of all public rights of way, article 9 of the draft DCO is clear that these must be completed "to the reasonable satisfaction" of the local highways authority, Wiltshire Council, who will ultimately be responsible for maintaining the public rights of way of created or altered by the Scheme. In this regard, Highways England and Wiltshire Council are working to complete a legal agreement which makes appropriate provision for Wiltshire Council to adopt, and maintain, these rights of way. In respect of highway drainage, paragraph 10 of Schedule 2 requires the Secretary of State to approve drainage details, following consultation with Environment Agency and Wiltshire Council, before construction of that part of the Scheme can be commenced. Taking these measures together, Highways England is confident that appropriate mechanisms will be in place to ensure that public rights of way are constructed to a standard appropriate for their users and that Wiltshire Council will be in a position to maintain them as such.</p>
14.1.2	<p>The draft DCO appears to be missing a Bridleway for the length of road labelled 'G' in the draft DCO, see page 66 of the draft DCO where it states:</p> <p><i>"Reference G A length of new side road between Winterbourne Stoke and the new Longbarrow Junction, from a point 650 metres south west of the existing Longbarrow roundabout (its junction with the new southern roundabout at Longbarrow Junction) in a generally westerly direction to a point 275 metres east of its junction with the byway WST06B, 1.20 kilometres to the south west of the</i></p>	<p>The "gap" between the two bridleways proposed (Reference Z and Y) on sheets 4 and 5 the Rights of Way and Access Plans [APP-009] occurs as a result of the dDCO not giving a reference to any shared routes proposed for the scheme where these are located within proposed highway boundaries, and where highway rights will exist. From a legislative perspective, there is no need to separately identify the shared use routes where they are within the highway boundary as legally both the shared use route and the carriageway form part of the same "highway".</p>

<p><i>existing Longbarrow roundabout, a distance of 615 metres (as shown on sheets 4 and 5 of the rights of way and access plans)"</i></p> <p>which is shown on sheet 5 of document TR010025-000161-2-6-RightsOfWayAndAccessPlans.pdf, to join up with the new Bridleway 'Y' (which then links to the east towards Amesbury along the alignment of the A303, as well as north and south alongside the A360).</p> <p>In Chapter 2 of the the Environmental Statement (document TRO10025-000193-6-1) it says:</p> <p>"Public Rights of Way</p> <p>2.3.57 The Scheme would cut across a number of existing PRoWs including Byways Open to All Traffic (BOATs), bridleways and public footpaths. Provision is made within the Scheme to maintain the existing function of the PRoWs with suitably located overbridges. However, the Scheme also includes new PRoW routes to improve accessibility and connectivity for communities including Winterbourne Stoke and Amesbury. These are shown on Figure 2.5 and from west to east, are: ...</p> <p>d) a new bridleway, east from Winterbourne Stoke to the new Longbarrow Junction, connecting with the new restricted byway through the WHS via the new green bridge to the east of the existing Longbarrow roundabout. The new bridleway and the new NMU route through the WHS would enable NMU journeys between Winterbourne Stoke and Amesbury;" which is shown in green in Figure 13.3A of proposed NUM routes (document TR010025-000334- 6-2_ES-Figure_13.3_ProposedNMUs.pdf).</p> <p>From my recollection and notes of the NUM Workshop held by Highways England in Salisbury on 24 July 2018 which I attended, there was some discussion about the positioning of this new 'parallel off-road Bridleway from Winterbourne Stoke to the new Longbarrow Junction, either on the:</p>	<p>As shown illustratively on sheet 4 and 5 of the General Arrangement Plans [APP-012], a shared cycleway is proposed in the area which is located on the north side of the link road east of Winterbourne Stoke to the new Longbarrow southern dumb-bell roundabout (proposed C507). The route crosses the proposed C507 carriageway via a proposed Pegasus crossing and runs along the southern verge of the roundabout. It then crosses the southern A360 link via a second Pegasus crossing to provide the connection to the new bridleway. The precise form and layout will be determined during the detailed design of the Scheme, if development consent is granted.</p> <p>Figure 13.3A was corrected in the Errata Report submitted at Deadline 7 [REP7-022] to show the provision of the shared cycleway.</p> <p>We can confirm that the location of the shared use cycleway remains on the north side of the realigned section of side road from Winterbourne Stoke to the new Longbarrow junction as explained in the response to the Examiners' Written Question CA.2.10 [REP6-026].</p>
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	<ul style="list-style-type: none">- north side of the road (such that a Pegasus/Cycle crossing would be needed for the westbound on-slip onto the newly dualled A303), or to the- south of the new road 'G' to link with new Bridleway 'Y' via a Pegasus/Cycle Crossing. <p>All NUM consultees would appreciate urgent confirmation of the situation with respect to this important new east-west PRow link between Winterbourne Stoke and the Amesbury/A360 (N/S) routes.</p>	
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15 British Horse Society (AS-092)

15.1	Additional Submission	
	Matter Raised	Highways England's Response
15.1.1	I would like to add my concern to that of Roger Upfold (Upfold 20018352 – see copy email below), on behalf of the British Horse Society (BHS), over the important section of apparently missing bridleway on the draft DCO.	Please see the Applicant's response to Roger Upfold's comments in section 14.

16 Gillian Anlezark (AS-093)

16.1	Additional Submission	
	Matter Raised	Highways England's Response
16.1.1	<p>I wish to endorse and support Roger Upfold's submission regarding details of the design and surfacing of new and improved PRoW. We have been informed by Highways England during the consultation phase of the Scheme that these will be determined at the detailed design stage, but at that point, if not legally binding by inclusion in the final DCO, details could be subject to a number of constraints, not least budgetary, and there is a danger that the resulting construction might not meet the needs of NMUs who are excluded from using the tunnel.</p>	<p>Please see the Applicant's response to Roger Upfold's comments in section 14.</p>

17 National Farmers Union (AS-094)

17.1	Comments on the dDCO	
	Matter Raised	Highways England's Response
17.1.1	<p>2.1 DCO: Article 29: Temporary Use of Land for Constructing the Authorised Development</p> <p>Under Article 29 it states that only 14 days' notice has to be given to a landowner before entry can be taken by the undertaker. The NFU believes strongly that HE should be able to give a longer notice period than 14 days to landowners before taking any land on a temporary basis. The areas of land to be used and taken on a temporary basis are very similar to land holdings which are being affected by HS2. Work that has been on going on HS2 Phase 1 has shown that a 3 month notice is required before entry is taken. HS2 have now given an Assurance to the NFU that a 3 month notice will be served before land is taken on a temporary basis on Phase 2a.</p> <p>If the DCO only states 14 days then HE will only serve a 14 day notice. HE have stated that they will be in discussions with landowners about temporary land take in advance of the 14 day notice and if this is the case then it should be possible to serve a longer notice period. Even with a longer notice period it should be stated that HE have to take a proportionate approach and cannot increase the burden on landowners. Further just because to date DCOs have been granted with a 14 day notice period does not mean that it is the correct notice period going forward. HE on the A30 Chiverton to Carland Cross have agreed to increase the notice period length to 28 days. A 28 day notice period should be the minimum. The NFU is expecting HE to acknowledge and accept that on a scheme this size where large blocks of land are being taken</p>	<p>The Applicant has responded to the Examining Authority's questions on the length of the notice required under article 29 for the temporary possession of land and has responded to the submissions of the National Farmer's Union on the same.</p> <p>Those representations can be found in DCO.1.18 and DCO.1.19 [REP2-030], agenda item 3.1(i) of the Applicant's summary of representations made at the first DCO ISH [REP4-029], 8.2.3 of [REP7-021].</p> <p>In summary, and in relation to the matters on this topic re-iterated in the NFU's latest submission [AS-094], Highways England's agreement to the 28 day notice period in the Chiverton to Carland Cross DCO is an exception to Highways England's corporate position – and the long established practice in DCOs - that 14 days is the appropriate time frame.</p> <p>The 14 day period is required to aid the efficient delivery of nationally significant infrastructure projects and the effect of imposing a longer period will simply be that more land will be taken temporarily, since decisions on what land to take will necessarily be taken earlier in order to allow entry at the required target date (which will not change because a longer notice period is required). This is therefore in the interests of neither Highways England, nor the landowner.</p> <p>The three month period agreed by HS2 can be distinguished from this Applicant's scheme as HS2 is of such a scale that it may engender sector wide regional effects. Additionally, it must be noted that the 14 days specified in article 29 is a minimum and needs to be seen in the context of the obligations in Table 2.1 of the OEMP. In particular the responsibilities placed on the Agricultural Liaison Officer to liaise with affected landowners/occupiers about activities which may affect their land/business prior to public release of</p>

	<p>from individual landowners for temporary use that a 3 month notice is necessary.</p> <p>The NFU would also like the notice to state how long the temporary occupation will be for and the contractor should have to provide a programme of works.</p>	<p>information and to arrange quarterly meetings with agent representatives of owner/occupiers.</p>
<p>17.1.2</p>	<p>2.2 DCO: Article 15 – Authority to survey and investigate the land:</p> <p>The NFU thanks HE for including the wording as drafted in the draft DCO at 15(3) The notice required under paragraph (2) must indicate the nature of the survey or investigation that the undertaker intends to carry out. The NFU would as requested like the notice to state:</p> <ul style="list-style-type: none"> • Who will be taking entry • The date of entry and for how long • The type of equipment if any will be used. <p>The NFU believes strongly that it is only right that a landowner should know who is coming on to his land, how long they will be on the land for carrying out the survey and the vehicles and equipment that will be brought on to the land.</p> <p>HE has agreed that the ALO will be able to provide pre –construction survey information. If this is possible then it must be possible for the information to be included with the notice.</p>	<p>The Applicant has previously responded to the matters raised in this representation, see item 39 of [REP6-035]. The National Farmers Union sought 4 matters to be covered in respect of surveys carried out under article 15 and the Applicant considers all but one of those issues matters to be addressed in table 2.1 of the OEMP [AS-086] in relation to the duties of the Agricultural Liaison Officer. This requires the ALO to "provide preconstruction survey information to landowners including company name, survey type and equipment to be used".</p> <p>The Applicant also introduced a new paragraph 15(3) in revision 3 of the draft DCO [REP4-019] that requires the notice given under article 15 to indicate the nature of the survey or investigation that the undertaker intends to carry out. The only issue that has not been addressed is in relation to the duration of the surveys. The reasons for not agreeing to this are the same as those given by the Applicant in connection with the duration of temporary possession under article 29; if required to specify a binding duration the Applicant would prudently take a precautionary approach to that duration.</p> <p>The Applicant acknowledges that a broad understanding of the intended duration of a survey may assist landowners in planning their activities and so the Applicant has amended the OEMP submitted at deadline 8 to require the ALO to provide an <i>estimate</i> of the duration.</p>

17.2	Comments on the OEMP	
	Matter Raised	Highways England's Response
17.2.1	<p>2.3 Agricultural Liaison Officer: OEMP: Table 2.1, page 18: The role of an Agricultural liaison officer has now been included in the table 2.1 in the OEMP and the latest version dated August 2019 does now set out when the ALO will be appointed, how long for, the qualifications of the ALO. But what it still does not state is the following in regard to when the ALO will be contactable.</p> <ul style="list-style-type: none"> • <i>The ALO (or their company) will be contactable from 7am to 7pm during the construction phase to landowners, agents and occupiers and will provide 24-hour team or company contact details for use in the event of emergency.</i> <p>It is essential for landowners that the ALO is contactable at all times and that the contractors carrying out the construction will provide an emergency 24 hour helpline.</p>	<p>Highways England notes this comment, however an amendment to the ALO role is not proposed as Highways England operates a 24-hour telephone line for use in case of emergencies.</p>
17.2.2	<p>2.4 Field Drainage: OEMP: MW – COM7: The NFU has highlighted the wording that it believes to be essential to state how field drainage should be dealt with during and after construction. A lot of time has been spent on drafting this wording not only for this DCO application but others as well to make sure that all aspects are covered. This wording has been agreed recently with HE on the A30 Chiverton to Carland Cross scheme and therefore the NFU can see no reason why the full wording cannot be agreed with HE for this scheme.</p> <p>Further to a meeting on the 1st August 2019 and a conference call on the 7th August 2019 HE have carried out further drafting to the wording in the OEMP to cover 'Field Drainage' but this is not acceptable to the NFU. The following comments are made:</p> <ul style="list-style-type: none"> • The wording does now include “so far as reasonably practicable to a condition that is as effective as the previous condition on completion”. The NFU is not in agreement “to so far as reasonably 	<p>Highways England notes and understands the importance of restoring agricultural land drainage and is highly experienced in constructing schemes of this nature through agricultural land and the subsequent restoration that follows.</p> <p>With regard to the ‘as far as reasonably practicable’ points, Highways England maintains that this is appropriate wording for a document which is secured via Requirement within the DCO; and takes account of the fact that these will be matters of detailed design and discussion.</p> <p>Regarding the drainage consultant, Highways England maintains that it is not necessary for either Highways England or the appointed contractor to appoint a specialist drainage expert. The agricultural land drainage within areas affected by the works is not considered complex. Highways England is, and the contractor shall be, suitably experienced in constructing schemes of this nature to have sufficient expertise in agricultural drainage systems.</p>

<p>practicable". It should state "The drainage would be reinstated in a condition that is at least as effective as the previous condition.</p> <ul style="list-style-type: none"> • The wording does now include "any field drainage affected by the Scheme shall be either reinstated or diverted to a secondary channel" This as requested by the NFU but the wording "if reasonably practicable" is not and should be deleted. • The wording does now include that the ALO shall record the location, condition and characteristics of drains cut. This is as requested but for the ALO to be able to do this the NFU believes it is essential that HE will agree to take on the services of a suitable qualified drainage consultant who will act as a drainage expert during the design process and liaise with landowners through the ALO to consult on the pre and post drainage schemes. This is essential and has not been included so far in the OEMP. The consultation needs to take place before the ALO will inform of the design, layout and timings. • Wording needs to be included to cover <ul style="list-style-type: none"> o Existing drainage were encountered will be appropriately marked. o Temporary drainage will be installed where necessary within the working corridor to maintain the integrity of the existing field drainage system during construction. o Where it is reasonable for the reinstatement of drainage to involve works outside of the order limits it will be done subject to the agreement of the landowner. o Records of the existing and remedial drainage will be maintained by the Applicant with copies provided to the Landowner and occupier following completion of the construction. <p>The NFU would like clarification on how a dispute over field drainage will be dealt with.</p> <p>The NFU cannot state how important it is for field drainage systems to be reinstated correctly after big infrastructure schemes are constructed through agricultural land. The NFU is expecting HE to</p>	<p>Wording has been added to item MW-COM7 of the OEMP submitted at deadline 8 to include provision for:</p> <ul style="list-style-type: none"> • Existing drainage were encountered will be appropriately marked. • Temporary drainage will be installed where necessary within the working corridor to maintain the integrity of the existing field drainage system during construction. • Records of the existing and remedial drainage will be maintained by the Applicant with copies provided to the Landowner and occupier following completion of the construction. <p>A statement regarding reinstatement works outside of the DCO boundary is not considered appropriate as the OEMP secures works inside the DCO boundary only. Should it be identified that drainage reinstatement works are required outside of the Scheme boundary then this will be dealt with on a case by case basis and by agreement with the affected landowner.</p> <p>Given the lack of complexity of the drainage network, disputes over land drainage are considered highly unlikely. In the unlikely event that a dispute over the field drainage arises, this will be dealt with via the ALO with The Authority adjudication of the matter between the affected landowner and the contractor.</p>
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	agree to this wording otherwise the OEMP will not meet the requirements expected of an OEMP for a scheme like this.	
17.2.3	<p>2.5 Outline Soils Management Plan: OEMP: Annex A.3: The NFU is pleased that HE have now drafted an Outline Soils Management Plan and the wording that has been included at MWCOM4. The NFU would like it to be made clearer that during the aftercare period there would be annual monitoring of the physical soil characteristics and soil nutrient levels to set the aftercare management requirements for the following year. The landowners should be able to approve and agree the reinstatement works before and after soil replacement. A final report to determine the final handover condition of the agricultural soil should be produced.</p>	<p>MW-COM5 of the OEMP (refer to the deadline 8 submission) details the monitoring of agricultural land. This includes for <i>'further inspections of restored agricultural land with the landowner/tenant and Highways England's soils experts (and valuer, if required) to assess the progress of the restoration... Concerns will be assessed by all parties and appropriate remedial actions or compensation agreed within the parameters of the compensation code and/or any previous agreements made at the time of acceptance of the initial restoration works and handover to the landowner/tenant'</i></p> <p>It is not considered appropriate to include for annual monitoring of the physical soil characteristics and soil nutrient levels for all agricultural land within the OEMP as this is unlikely to be required in all instances. If required, this would be included within the 'further inspections' stated within MW-COM5.</p>
17.2.4	<p>2.6 Construction Compounds: At MW – CH4 in the OEMP it does state that the slurry treatment plant and the batching plant have to be located to the west of the existing tall hedgerow at Longbarrow. The NFU would like it made clear which plots of land this refers to and which construction compound this will be. This needs to be made clear in the DCO in the relevant schedules. HE have also referred to 'soil treatment works' and the NFU believes that where these types of works are to take place again should be made clear in the relevant schedules in the DCO.</p>	<p>Highways England notes this comment, however the plots in which the slurry treatment and batching plants are to be located are large and as such overlap into areas of the Scheme where the plants are not to be located e.g. east of the hedgerow. Listing the plots would contradict the intention of MW-CH4 which is to restrict the location of the plants. Highways England considers that the current wording within MW-CH4 is appropriate.</p> <p>Soil treatment would take place in the construction compounds, whose location is limited by MW-G28 and so no reference is needed within the DCO.</p>

17.3	Additional Submission	
	Matter Raised	Highways England's Response
17.3.1	<p>2.7 Access to Countess Road: P Sawkill: There is still an issue as to how NFU member Mr Sawkill is going to gain access from West Amesbury Farm to Countess Road. HE has only been able to confirm that a route across National Trust land for a combine harvester to access Mrs Sandell's agricultural business has been offered. This is not sufficient and an access for all agricultural vehicles and machinery is required. It is not acceptable that HE is proposing that all other agricultural vehicles and machinery go through West Amesbury.</p>	<p>Please refer to the Applicant's response to Written Question Ag.2.5 [REP6-019] which outlines that this issue was discussed at the compulsory acquisition hearing, the Applicant's submissions are set out in its written summary [REP5-002] on pages 2-31 and 2-32.</p> <p>The Applicant considers that access to West Amesbury Farm and Park Farm for all agricultural and heavy goods vehicles, with the exception of combine harvesters, can be achieved using the existing road network and without the need for establishing an alternative route. This has been concluded following an analysis of vehicle movements of types required by Mrs Sandell and Mr Sawkill for Park Farm and West Amesbury Farm respectively. The Applicant is thus satisfied that the existing highway alignment through Amesbury is satisfactory to facilitate all existing movements except for a combine harvester with a towed header unit.</p>
17.3.2	<p>2.8 Land to be taken for Tunnel Arisings: S Moore: HE have still not provided any further evidence or reasoning as to why the tunnel arisings should be dumped on 135 acres of good quality agricultural land and not taken off site. The evidence given in Appendix 12.1 is not acceptable. This issue still needs to be addressed by HE.</p> <p>If it can be proven that it is essential to take the 135 acres for the tunnel arisings then HE need to set out why the arisings need to be landscaped as set out on proposed design plans to date. Further, why it is necessary to have the balance pond. Confirmation is required that it will be possible to reinstate the area to chalk grassland, how long reinstatement is likely to take and when would the land be able to be returned to Mr. Moore.</p>	<p>The Tunnel Arisings Management Strategy, Appendix 12.1 [APP-285] sets out the reasoning for placement of tunnel arisings on the land to the east of Parsonage Down rather than off site or at another on-site location.</p> <p>The requirement for essential landscaping in this area is to ensure that the new highway is integrated into the existing landform. This was explained by the Applicant in oral submission during Issue Specific Hearing 4, as recorded at Section 8.1 of [REP4-032].</p> <p>The balancing pond is intended to store runoff water from the A303 road then treat it to improve the water quality before discharging it to ground. It is located within this area since the area is already required for essential landscape mitigation, and placing the balancing pond here removes the need to use any other additional land that would otherwise be unaffected by the Scheme. Further details on the drainage treatment area are outlined in the updated road drainage strategy, Appendix 11.3 [REP2-009].</p>

		<p>The Applicant considers that reinstatement to chalk grassland is feasible. The programme for reinstatement will be subject to the overall programme for the works and the Applicant is not currently in a position to confirm the date by which any reinstatement would be completed.</p>
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18 Lois Lloyd (AS-089)

18.1	Additional Submission	
	Matter Raised	Highways England's Response
For the response to Lois Lloyd's submission, see the written summary of the oral submission from ISH9 regarding traffic and transportation, submitted at deadline 8.		

19 Environment Agency (REP7-045)

19.1	Comments on Second Written Question responses	
	Matter Raised	Highways England's Response
19.1.1	<p>[Re. Applicant's response to De.2.1]</p> <p>We have no further comments to make beyond those made at Deadline 6, but would reiterate that if the purpose of the Stakeholder Consultation Group (SCG) includes being consulted on the detailed design of the scheme, then we consider the EA should be included in the list of stakeholders who form the SCG.</p>	<p>There is no need for the EA to form a part of the SDCG (a) because the SDCG is designed to consider heritage impacts of the detailed design of key aspects of the scheme, the key driver of the process being the WHS and (b) in any event as a result of their protective provisions within the draft DCO. These provisions provide for the EA to approve the detail (including the design) of those features of the Scheme which interrelate to the EA's statutory functions.</p>
19.1.2	<p>[Re. Applicant's response to DCO.2.15]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>The movement of the proposed tunnel vertical alignment within the limits of deviation have not been assessed to date. The numerical groundwater model simulated the presence of the tunnel by making very specific adjustments to the hydraulic conductivity of the aquifer along the tunnel's length based on the proportion of the tunnel that lay below the water table. Vertical movement of the tunnel alignment will alter this proportion and therefore has potential to alter the degree of impedance to groundwater flow and the magnitude and extent of impacts.</p> <p>A further assessment was made by the Applicant and reported in 8.23 – Implications of 2018 Ground Investigations to the Groundwater Risk Assessment submitted at DL3 where a specific vertical alignment of the tunnel was compared to potential preferential flow horizons identified from borehole logs and</p>	<p>The approach to modelling the tunnel is sufficiently precautionary to cover the potential impacts that would be experienced within the limits of deviation and no material change as a result of a tunnel within the limits of deviation is predicted. The model effectively blocks a greater proportion of the aquifer than the tunnel itself both in the horizontal and vertical plane as provided by the limits of deviation in Article 7 of the draft DCO. Details of the groundwater model are presented in Annex 1 of the Groundwater Risk Assessment [APP-282].</p> <p>The Applicant notes the agreed position of the Environment Agency that assessment of the final design of the scheme, including any altered vertical alignment, is expected in the Groundwater Management Plan as required by MW- WAT10 of the OEMP.</p> <p>Please see the summary of oral submissions at the DCO Hearing on 30 August submitted at deadline 8 (item 3.3i).</p>

	<p>geological cross sections. No discussion or assessment was made of the implications of altering the vertical alignment within any stated limits of deviation. We therefore disagree with the Applicant's statement at DL6 that "the limits of deviation have been thoroughly assessed".</p> <p>We are however in agreement with the Applicant in that assessment of the final design of the scheme, including any altered vertical alignment, is expected in the Groundwater Management Plan as required by MW- WAT10 of the OEMP.</p>	
19.1.3	<p>[Re. Applicant's response to DCO.2.34]</p> <p>Whilst we welcome the acknowledgement by Highways England of the sensitivity of this scheme and their inclusion of "other persons considered appropriate" within the Secretary of State's duty to consult, we should suggest the following further amendment to Requirement 3 (1) to require the Secretary of State to consider this and consult both the planning authority and any other person considered appropriate, having regard to the proposed amendments in question, and also those with the statutory roles and responsibilities of the interested parties to the Scheme:</p> <p>Requirement 3 (1) "...following consultation with the planning authority on matters related to its functions and any other person the Secretary of State considers appropriate having regard to the proposed amendment in question <i>and the statutory roles and responsibilities of the interested parties to the Scheme</i>".</p> <p>As a statutory consultee we consider it appropriate that we are consulted on any changes to the proposed scheme.</p>	<p>In utilising his/her discretion created by this requirement the Secretary of State would consider who the appropriate body would be – this would inherently include consideration of who is indeed the appropriate body in terms of their statutory roles and responsibilities. The requested amendment is therefore unnecessary.</p> <p>The Applicant also considers that reference to 'interested parties' is not specific enough a defined term for the purposes of DCO drafting and indeed could preclude the Secretary of State consulting parties who to date may not have been an 'interested party'.</p>
19.1.4	<p>[Re. Applicant's response to DCO.2.43]</p> <p>We maintain our position as stated in our response to EXQ2 made at Deadline 6.</p>	<p>Highways England notes this comment. The requirement for the contractor to provide a summary report has been removed from individual plans within the REAC tables and included within Section 1.4 of the Outline Environmental management Plan (OEMP) (please refer to the OEMP submitted at deadline 8). The requirement to consult and produce a consultation report applies to</p>

	<p>The latest OEMP does not contain this reference at MW – G11 (ie does not have the requirement for consultation and the summary report, etc). In respect of the HEMP and MW – G11 we would suggest the following amendment: "The HEMP must detail the consultation received from the interested parties and also provide whether those responses have been incorporated within the HEMP or not".</p>	<p>the HEMP and any other document where consultation is required by the OEMP.</p>
19.1.5	<p>[Re. Applicant's response to DCO.2.57]</p> <p>We maintain our position as stated in our response to EXQ2 made at Deadline 6.</p> <p>We welcome the proposed ground investigation referred to in the Applicant's response to EXQ2.</p> <p>However, to ensure that any contamination discovered during these investigations does not cause delay during construction or pose unacceptable risk to the environment, we maintain that the investigations are reported on and where necessary remediation schemes agreed, prior to commencement of construction of the scheme. We consider that this should be secured by pre-commencement Requirement (in addition and separate to Requirement 7) specifying agreement with the local authority on risks to human health and the Environment Agency on risks to controlled waters.</p>	<p>This matter was discussed at the Issue Specific Hearings on 29 and 30 August. Please see the summary of oral submissions at these hearings for the latest position on this matter; which highlight that the OEMP submitted on 20 August included a change to item MW-GEO8 in respect of known contamination being dealt with pursuant to the CLR11 process.</p> <p>This item has been further updated at deadline 8 to provide explicitly for consultation where appropriate with the Environment Agency and Wiltshire Council and is now agreed with the EA.</p>
19.1.6	<p>[Re. Applicant's response to DCO.2.64]</p> <p>The inclusion of the contents of Requirement 11 within the OEMP with reference to the CEMP (PW G1) provide the opportunity for the Environment Agency to make representations that "suitable mitigation measures" either have, or have not, been put in place.</p> <p>This will enable the Environment Agency to alert the approving authority in respect of any concerns.</p>	<p>Please see item 27.1.9 of Highways England's comments on Interested Parties' deadline 6 submissions [REP7-021] which considered this proposed amendment – the OEMP secures the majority of the mitigation identified in the Environmental Statement (other requirements address other matters). The Applicant has worked carefully with stakeholders to develop the OEMP and to align the relevant measures specified therein, with consultation with the relevant bodies that have an interest or expertise in the measure concerned. The blanket provision suggested would undermine this careful approach and</p>

		<p>would introduce uncertainty and ambiguity by giving rise to a conflict between the clear provisions of the OEMP and the proposed blanket amendment.</p> <p>The Applicant notes that the Environment Agency indicated it was content with the current drafting of requirement 11 at the Issue Specific Hearing on the DCO held on 30 August 2019.</p>
19.1.7	<p>[Re. Applicant's response to Fg.2.2]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>Depending on the level of dewatering required if the Applicant does have to change their construction methodology, the amount of water from dewatering may have a potentially significant impact due to the quantity being released and the risks this may cause downstream. Therefore this would need to be adequately managed.</p> <p>We therefore recommend some wording to be included in the OEMP similar to that provided below. MW- WAT12 (Flood Risk Management Plan) would appear to be the best place to include this:</p> <p>"The construction method at present does not require any dewatering. It is essential that any changes to the detailed design are adequately risk assessed. The EA should be consulted on any updated design and risk assessment, and agreement reached with the EA regarding conclusions and any mitigation measures proposed. No works should commence until written agreement that these plans provide appropriate measures and mitigation to protect the site and surrounding area from flood risk during construction and operation of the scheme."</p>	<p>Please see item 27.1.12 of Highways England's comments on Interested Parties' deadline 6 submissions [REP7-021] which sets out the numerous controls within the OEMP which will limit and mitigate any dewatering that is required.</p> <p>Furthermore, item MW-WAT12 (d) sets out that the Flood Risk Management Plan must include "<i>any flood risk management or mitigation measures implemented, or to be implemented, in support of temporary and permanent works proposals</i>".</p> <p>Such 'proposals' would include any dewatering that is deemed necessary. As such, the OEMP provisions already provide for the EA to consider such matters.</p> <p>The construction methodology (closed face tunnelling) is a non-dewatering methodology and is secured by item D-CH32 of the OEMP [AS-085] via Schedule 2, paragraph 4 of the dDCO [AS-095]. The contractor will be obliged to construct the tunnel using this methodology and therefore there is no scope for the contractor to change the construction methodology during detailed design.. Highways England does not propose to update the OEMP as suggested.</p>
19.1.8	<p>[Re. Applicant's response to Fg.2.21]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6. We consider that</p>	<p>This matter was discussed at the Issue Specific Hearing on 29 August 2019 (see item 3.2 in the oral submission submitted at deadline 8) in respect of whether more detail should be provided in the Road Drainage Strategy.</p>

	<p>further quantitative assessment of pollution risk from the infiltration basins is required.</p> <p>Much of the Applicant's response to Fg.2.21 appears to relate to attenuation of flood flows as opposed to attenuation of chemical contaminants. We consider that the latter was the intended subject of question Fg.2.21.</p> <p>Where natural attenuation (and/or proprietary treatment) of contamination is relied upon, we would expect to see quantitative demonstration that these are appropriate.</p> <p>Use of the lowest infiltration rate in an area is conservative for assessment of flood risk, but the opposite is true when considering pollution risks from infiltration of contaminated road runoff. The slower infiltration rate would overestimate the level of contaminant attenuation and consequently underestimate the risk to groundwater quality. For conservative assessment of contaminant attenuation and risk to groundwater quality, the higher infiltration rates should be used.</p> <p>We note the reference to use of peak groundwater levels as being more conservative than typical high levels however we are not aware that these values have been used in any detailed assessment of contaminant attenuation.</p> <p>The assessment of capacity provided by the Applicant (paragraphs 7, 8 and 9 in their response) relates primarily to storage of flood water rather than containment of contaminated runoff within impermeable components of the drainage system.</p> <p>With regard to flood risk matters, please see our comments regarding Climate Change allowances within response f.g2.8 above.</p>	<p>As stated at that hearing, these are matters of detailed design that will be governed by Requirement 10, Schedule 2 of the DCO [REP6-005] which requires Secretary of State approval of drainage design and mitigation following consultation with Wiltshire Council and the Environment Agency. No statement is therefore required on the face of the DCO, OEMP, or Road Drainage Strategy.</p> <p>As reported in Chapter 11 of the Environmental Statement [APP-049], on the basis of the mitigation set out in the Road Drainage Strategy the assessment concluded that there would be no likely significant effects on the water quality of the River Till and the groundwater, and a likely significant beneficial effect on the water quality of the River Avon.</p> <p>The results of the water quality assessments are contained within Environmental Statement Appendix 11.1 - Water Quality Risk Assessment [APP-279]. The assessments included</p> <ul style="list-style-type: none"> • Effects of routine runoff on surface waters • Assessment of the impacts on groundwater • Spillage risk assessment. <p>This was undertaken in accordance with the Highways England Risk Assessment Tool (HEWRAT), which was developed in conjunction with the EA.</p>
19.1.9	[Re. Applicant's response to Fg.2.28]	This matter was discussed at the Issue Specific Hearings on 29 and 30 August 2019. Please see the summary of oral submissions at these hearings, submitted at deadline 8, for the latest position on this matter; which highlight

	<p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>We welcome the ground investigation referred to in the Applicant's response to EXQ2. However, to ensure that any contamination discovered during these investigations does not cause delay during construction or pose unacceptable risk to the environment, we maintain that the investigations should be reported on and where necessary remediation schemes agreed, prior to commencement of construction of the scheme. We consider that this should be secured by pre-commencement Requirement (in addition and separate to Requirement</p> <p>7) specifying agreement with the local authority on risks to human health and the Environment Agency on risks to controlled waters.</p> <p>We note that a report on the current ground investigation is expected in September 2019. We consider that based on this timescale, there is no reason that evaluation of the results and discharge of a specific DCO Requirement prior to commencement of construction should cause delay to a scheme for which a contractor has not yet been appointed, design finalised, preliminary works completed or preparation of the various Management Plans required by the OEMP begun.</p>	<p>that the OEMP submitted on 20 August 2019 included a change to item MW-GEO8 in respect of known contamination being dealt with pursuant to the CLR11 process.</p> <p>This item has been further updated at Deadline 8 to provide explicitly for consultation where appropriate with the Environment Agency and Wiltshire Council and is now agreed with the EA.</p>
19.1.10	<p>[Re. Applicant's response to Fg.2.37]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>We note the addition of the requirement for consultation with Wiltshire Council and HMAG on the Soils Management Strategy in MW- GEO3 of the Revision 3 OEMP. However, we request that the Environment Agency are also consulted on aspects of the Strategy relating to hydrological implications and contamination.</p>	<p>Amendment has been made to items PW-GEO3 and MW-GEO of the OEMP to include provision for consultation with the Environment Agency on the Soils Management Strategy (please refer to the OEMP submitted at deadline 8).</p>

19.1.11	<p>[Re. Applicant's response to Fg.2.42]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>Protection of heritage assets does not fall within the remit or expertise of the Environment Agency and it should therefore not be the responsibility of the Environment Agency to ensure that heritage assets are adequately considered within the risk assessments.</p> <p>Where assessments indicate any impact at archaeological sites or other heritage assets, responsibility should lie with the Applicant or their contractor to consult the appropriate bodies.</p>	<p>The Applicant will consult with the Environment Agency in relation to groundwater and surface water across the Scheme, including the water environment at Blick Mead.</p> <p>Changes have been made to item MW-WAT10 of the OEMP at deadline 8 to provide clarity that Wiltshire Council will be consulted in respect of heritage impacts in respect of groundwater at Blick Mead.</p> <p>The only exception to this is in relation to specific applications made to the Environment Agency for a licence for abstraction or dewatering where they are the authorising body and may consult relevant external bodies prior to issuing a licence on the specific impacts related to the licenced activity.</p>
19.1.12	<p>[Re. Applicant's response to Fg.2.46]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p> <p>Whilst the Environment Agency would consult with external bodies as part of the determination of any application for dewatering or abstraction licence, it is not the Agency's responsibility to consult more generally on the significance of potential impacts of the wider scheme such as would be managed through the Groundwater Management Plan.</p> <p>It is the responsibility of the Applicant or their contractor to ensure that where impacts may occur at heritage sites (except those directly attributed to abstraction/dewatering), the appropriate heritage body is consulted and appropriate mitigation agreed.</p> <p>This responsibility should not be passed to the Environment Agency.</p>	<p>Please see above response in paragraph 19.1.11.</p>
19.1.13	<p>[Re. Applicant's response to Fg.2.47]</p> <p>We maintain our position as stated in our response to the Examining Authority's questions (EXQ2) made at Deadline 6.</p>	<p>Please see above response paragraph 19.1.11.</p>

	<p>As stated above, it is not the responsibility of the Environment Agency to conduct consultations on the Applicant's scheme for them as is suggested in their response to Fg.2.42, Fg.2.46 and Fg.2.47.</p> <p>Responsibility for consultation with heritage bodies and agreement of appropriate mitigation measures for the protection of assets should rest with the Applicant or their contractor.</p> <p>The only exception to this is in relation to specific applications made to the Environment Agency for a licence for abstraction or dewatering where we are the authorising body and may consult relevant external bodies prior to issuing a licence on the specific impacts related to the licenced activity.</p>	
<p>19.1.14</p>	<p>[Re. Applicant's response to WM.2.1]</p> <p>Although there is no regulatory requirement to formally consult the Environment Agency on the Materials Management Plan under CL:AIRE, due to the size of the scheme, implications could be significant if not done correctly. We would therefore welcome consultation on the MMP to allow review of potential impacts on surface or groundwater quality or hydrology from altered ground conditions.</p>	<p>Item MW-MAT2 of the OEMP was updated at deadline 6 [REP6-012] to provide for consultation with the Environment Agency on the MMP.</p>

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