

# A303 Amesbury to Berwick Down

TR010025

**Deadline 4**

**8.30.2 - Written summaries of oral submissions put at  
Cultural Heritage hearings on 5th and 6th June 2019**

APFP Regulation 5(2)(q)

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

June 2019



## Infrastructure Planning

Planning Act 2008

### The Infrastructure Planning (Examination Procedure)

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## A303 Amesbury to Berwick Down

Development Consent Order 20[\*\*]

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<b>Regulation Number:</b>	Regulation 5(2)(g)
<b>Planning Inspectorate Scheme Reference</b>	TR010025
<b>Application Document Reference</b>	8.30.2
<b>Author:</b>	A303 Amesbury to Berwick Down Project Team, Highways England

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Rev 0	21 June 2019	Deadline 4 Issue

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# 1 Introduction

- 1.1.1 This document summarises the oral submissions made by the Applicant at the Issue Specific Hearing on Cultural Heritage held on Wednesday 5 June and Thursday 6 June 2019.
- 1.1.2 Where the Examining Authority requested further information from the Applicant on particular matters, or the Applicant undertook to provide further information during the hearing, the Applicant's response is set out in or appended to this document.
- 1.1.3 This document does not purport to summarise the oral submissions of parties other than the Applicant, and summaries of submissions made by other parties are only included where necessary in order to give context to the Applicant's submissions in response, or where the Applicant agreed with the submissions of another party and so made no further submissions itself (this document notes where that is the case).
- 1.1.4 The structure of this document follows the order of items as set out in the agenda for the issue specific hearing on cultural heritage ("Agenda"). Numbered agenda items referred to are references to the numbered items in the Agenda.

## 2 Written summary of the Applicants' oral submission

3 POLICY AND GUIDANCE	
Agenda Item	Highways England response
<i>i. ICOMOS/ UNESCO</i>	<b>Reuben Taylor QC, on behalf of Highways England</b> (the Applicant) explained that with respect to the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (January 2011) (" <b>ICOMOS Guidance</b> "), the Applicant has produced a Heritage Impact Assessment (HIA) [APP-195] in accordance with that guidance. The HIA was the subject of a scoping report before it was produced. The methodology contained within the scoping report, having been provided as part of the briefing pack provided to the ICOMOS advisory mission in March 2018, was considered acceptable by ICOMOS, as reported in the Final Report on the joint World Heritage Centre / ICOMOS Advisory mission to Stonehenge, Avebury and Associated Sites [REP1-008]. In that report at section 5.6 ICOMOS confirmed that the scoping report reflected the ICOMOS Guidance and that the methodology outlined in scoping report was appropriate. That methodology was followed in the preparation of the HIA.
<i>ii. The National Policy Statement for National Networks</i>	<b>Reuben Taylor QC</b> explained that the Scheme's compliance with the National Policy Statement for National Networks (" <b>NPSNN</b> ") had been addressed in a number of places in the application documents. This includes the policy section of each chapter of the Environmental Statement (with respect to cultural heritage, see Chapter 6 of the ES [APP-044]) and the Case for the Scheme and NPS Accordance Table [APP-294] which demonstrates compliance with the NPSNN policies in Annex A.
<i>iii. Wiltshire Council</i>	<b>Reuben Taylor QC</b> explained that Wiltshire Council's policies have also been addressed in the Environmental Statement. The Applicant's compliance with those policies is also demonstrated in Appendix B3 of the Case for the Scheme and NPS Accordance Table [APP-294]. Mr Taylor QC noted that Wiltshire Council's Local Impact Report [REP1-057] indicated that on balance the Scheme complies with Core Policies 6, 58 and 59.  This position was confirmed by <b>Paul Brown QC, on behalf of Wiltshire Council</b> , who submitted that overall the balance is in favour of the Scheme.
<i>iv. The National Planning Policy Framework</i>	With respect to the National Planning Policy Framework (" <b>NPPF</b> "), <b>Reuben Taylor QC</b> explained that the NPPF essentially follows the same approach as provided in the NPSNN, in terms of identifying whether there is substantial or less than substantial harm to heritage assets. To the extent relevant to the consideration of the Scheme, the requirements of the NPPF are therefore considered as part of appraisal of the NNNPS requirements in Appendix A of the Case for the Scheme and NPS Accordance Table [APP-294].
<i>v. Emerging reports, policy, and guidance</i>	<b>The Examining Authority</b> referred to the draft decision of the World Heritage Committee and noted that a formal decision will be made by the World Heritage Committee at its meeting in July 2019.

<p><b>including the World Heritage</b></p> <p><b>Property Setting Study and Boundary Review, and UNESCO World</b></p> <p><b>Heritage Committee decision on the DDMS State of Conservation</b></p> <p><b>Report expected at their 43rd session, July 2019</b></p>	<p><b>Keith Nichol from the Department for Digital, Culture, Media and Sport (“DCMS”)</b> advised caution in assuming that the final decision adopted by the World Heritage Committee would reflect the draft decision, as it is open to any of the members of the committee to propose amendments. Mr Nichol reported that the view of DCMS was that the 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.</p> <p>Mr Nichol reported that DCMS would continue to work with Historic England and other heritage bodies to ensure the Outstanding Universal Value (“<b>OUV</b>”) of the World Heritage Site (“<b>WHS</b>”) is sustained. Mr Nichol stated that the minimum obligation is to protect the OUV, however, DCMS considers that the Scheme will enhance the OUV. Mr Nichol explained that DCMS has to consider a range of issues with respect to the Scheme. Whilst the impact on the OUV of the WHS is an important consideration, it is not the only one; there is also an obligation to provide value for money to the UK taxpayer. Mr Nichol undertook to provide the final decision of the World Heritage Committee to the Examination.</p> <p><b>The Applicant</b> did not make any submissions on this point and has nothing to add at this stage in addition to the comments from DCMS.</p> <p><b>The Examining Authority</b> asked about the WHS boundary review and setting study.</p> <p><b>Melanie Pomeroy-Kellinger, on behalf of Wiltshire Council</b>, explained that the setting study had been in development for two years, and whilst the brief was finalised, the study itself had not started due to a lack of funding. Ms Pomeroy-Kellinger noted that the boundary review was on hold, pending completion of the setting study.</p> <p><b>Henry Owen John of Historic England</b> further explained that any modification to the WHS boundary (or provision of a buffer zone) would be a lengthy and complex process; any modification to the boundary proposed as a result of the work of Wiltshire Council would then need approval by DCMS and then the World Heritage Committee.</p> <p><b>The Applicant</b> did not make any submissions in this respect, and it agrees with the submissions made by Wiltshire Council and Historic England.</p>
<p><b>vi. Discussion of these items and how they interrelate. Whether the appropriate test of acceptability turns on the overall balance of</b></p> <p><b>harm against benefit, or on whether adverse impact on ‘outstanding</b></p>	<p><b>Reuben Taylor QC</b>, referred the Examining Authority to the Applicant’s response to written question G.1.1 [REP2-021] which dealt with the implementation of the requirements of the World Heritage Convention into the UK’s legislative and policy framework. Mr Taylor QC explained that one of the key aspects to be understood comes from the ICOMOS Guidance, which identifies that the process of assessing the impact of the Scheme on the WHS requires consideration of harm against benefits. Mr Taylor QC cited paragraph 2-1-14 of the guidance which refers to “<i>[b]alanced and justifiable decisions</i>”, and to paragraph 2-1-5 which provides that “<i>[u]ltimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place</i>”.</p> <p>Mr Taylor QC referred to paragraph 5-9 of the guidance which provides the example of removal of a road from the vicinity of a building which conveys OUV as a major beneficial effect. Paragraph 6-2 reiterates that “<i>Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place</i>”.</p>

<p><b><i>universal value' (OUV) should be avoided whatever the benefit.</i></b></p>	<p>Mr Taylor QC submitted that a balancing exercise is to be undertaken in the decision-making process. A HIA has been undertaken, and it weighs adverse and beneficial impacts on the attributes of OUV against each other, and concludes that overall the Scheme will have a slight beneficial effect on the OUV of the WHS. 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><b>The Examining Authority</b> invited submissions from other parties, in relation to the contention raised in various written representations, that the appropriate test was to avoid all harm to the WHS.</p> <p><b>Victoria Hutton, on behalf of the Consortium of Archaeologists and the Blick Mead Project Team</b>, made submissions asserting that the correct approach is not to balance impacts on OUV. Ms Hutton made reference to the World Heritage Convention, and asserted that nothing on the face of the convention supported a cost benefit analysis.</p> <p>Ms Hutton submitted that the Operational Guidelines for the Implementation of the World Heritage Convention (July 2017) were relevant to the interpretation of the World Heritage Convention, and referred to various paragraphs within the Operational Guidelines in relation to protection of OUV and integrity of the WHS. Ms Hutton's submission was that the Operational Guidelines are clear that harm to any criteria making up the OUV will breach the World Heritage Convention.</p> <p>Ms Hutton submitted that there was nothing in the NPPF, NPSNN, Planning Practice Guidance or WHS Management Plan that supports balancing harm to one part of the WHS against benefit to another.</p> <p>With respect to the Applicant's position that the World Heritage Convention provisions are implemented with respect to Nationally Significant Infrastructure Projects via the NPSNN, and that a decision in accordance with the NPSNN would therefore be in compliance with the World Heritage Convention, Ms Hutton asserted that there was no suggestion that international status and protection of the WHS had been appropriately transposed into the NPSNN, and further asserted that there was no recognition in the NPSNN of the Operational Guidelines. Ms Hutton submitted that in any event, the NPSNN does not support a balancing approach.</p> <p><b>Mr Owen John of Historic England</b> explained that Article 5 of the World Heritage Convention qualifies Article 4 and its implementation by State Parties. Article 5 provides that each State Party will use its own planning powers to secure protection in an appropriate manner.</p> <p>Mr Owen John explained that with respect to the ICOMOS Guidance, it refers to a balance being struck with harm that is unavoidable. Mr Owen John submitted that if alternative options have been explored carefully, it may be that there is no way of securing the benefits without some level of harm to the WHS.</p> <p>In response to a reference from ICOMOS UK to a Historic England letter in relation to a different project, Mr Owen John explained that the letter set out that in that case, the harm could not be outweighed. Mr Owen John stated that in the case of the Scheme, it is for the Examining Authority to reach a judgement as to whether it is possible in the circumstances of the Scheme to avoid any harm to the WHS in the delivery of the Scheme, and if not, then to look at the extent to which the harm has been mitigated, and then at the public</p>
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benefits (both heritage and wider benefits, including economic and social benefits to local communities). Mr Owen John confirmed to the Examining Authority that the principles set out in the letter were principles accepted by Historic England.

**Mr Brown QC, on behalf of Wiltshire Council**, submitted that it is appropriate for there to be a balancing exercise. In response to Ms Hutton's submissions, Mr Brown QC explained that benefits to one part of the WHS does not mean there is no harm to another part of the WHS; Wiltshire Council's view is that having regard to that harm, on balance, it is in favour of the Scheme. Mr Brown QC submitted that even if only looking at the impact on OUV and ignoring all other benefits, there are still more benefits than harm caused to the OUV of the WHS. Mr Brown QC noted that the Applicant does not suggest there are massive benefits in heritage terms, but noted that the Scheme is "ahead" in terms of its impact on OUV. Mr Brown QC further added that having regard to the other benefits that were also important to Wiltshire Council as the local authority, such as social and highway benefits, the benefits overall come out significantly greater than the harm, and justify the Scheme.

**Ms Hutton** made further submissions, asserting that the specific purpose of the Operational Guidelines related to the implementation of the World Heritage Convention, and that the guidelines were more authoritative than the ICOMOS Guidance.

Ms Hutton referred to the Australian High Court decision in the Tasmanian Dam Case, and made reference to paragraph 41 of Justice Brennan's judgement, referring to it to support her position that there was no discretion with respect to the implementation of Article 4 of the World Heritage Convention. In reliance on this, Ms Hutton submitted that there was no discretion in implementation of the World Heritage Convention to not comply with all of the obligations under the convention.

**Nick Snashall, National Trust**, agreed with submissions made by the Applicant and Historic England that the ICOMOS Guidance requires a balance of impacts on OUV. Dr Snashall explained that the National Trust had undertaken its own assessment of the impact of the Scheme on OUV. In response to comments made by ICOMOS UK, Dr Snashall explained that the National Trust had also taken the view that major harm to OUV should be avoided. Dr Snashall explained that in the National Trust's assessment, it had balanced impacts on attributes of OUV, integrity and authenticity, and also considered that it would be possible for impacts on any particular attribute of OUV on their own to render the Scheme completely unacceptable. Dr Snashall noted that the National Trust has pushed for mitigation to ensure no major or moderate impacts on the attributes of OUV and on the OUV of the WHS as a whole.

**Mr Taylor QC** responded to the above points, in particular those raised by Ms Hutton.

In relation to Ms Hutton's submissions on the Tasmanian Dam case, Mr Taylor QC noted that the Applicant would make further submissions in this respect, as the Applicant's interpretation of that case law is that it supports its position that a balance requires to be struck (as set out in the Applicant's response to written question G.1.1). The Applicant makes further submissions on this point in **Appendix A** to this summary.

Mr Taylor QC submitted that for Ms Hutton's contentions to be correct, it would mean that the ICOMOS Guidance is wrong in terms of the balance that should be struck. Mr Taylor QC submitted that as Ms Hutton had not explained how the ICOMOS Guidance is to be construed in a way that is consistent with her legal submission, it must follow that her position is that the guidance is incorrect.

In terms of Ms Hutton's submissions that the NPSNN does not implement the World Heritage Convention nor reflect the protection given to World Heritage Sites, Mr Taylor QC referred to paragraphs 5.132 to 5.134 of NPSNN which provides that if there is less than substantial harm to heritage assets, a balance is to be struck. Mr Taylor QC submitted that if Ms Hutton's contention is correct, and the



	<p>World Heritage Convention does not allow a balancing of harm, this would mean that the NPSNN has been adopted unlawfully, as the policy would be inconsistent with the UK's international obligations. There is no suggestion that the approach to WHSs in the NPSNN is unlawful. Mr Taylor QC noted that one of the consultees to the NPSNN was ICOMOS UK.</p> <p>Mr Taylor QC referred to the following sections of the ICOMOS Guidance in support of the Applicant's position:</p> <ul style="list-style-type: none"> <li>(i) Paragraph 5.1 refers to the necessity to identify all changes on all attributes;</li> <li>(ii) Paragraph 5.8 refers to the need to identify significance and consider the overall impact on an attribute;</li> <li>(iii) Paragraph 5.10 noted that the HIA report needs to show the assessment for each individual attribute;</li> <li>(iv) Paragraph 5.13 notes that benefits and dis-benefits must be carefully considered;</li> <li>(v) Appendix 4 sets out the potential contents for a HIA, referring in section 7 to the assessment and evaluation of overall impact of the proposed changes. That section is to include a consideration of all impacts on all attributes and also include an evaluation of the overall significance of effect. It is clear from this that a balancing approach is to be adopted.</li> </ul> <p>In terms of avoiding harm to OUV, Mr Taylor QC explained that the key paragraph in the ICOMOS Guidance is paragraph 6.2 which provides:</p> <p><i>“Conservation is about managing sustainable change. 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.”</i></p> <p>This paragraph confirms that the test is whether every <i>reasonable</i> effort been made to avoid, eliminate or minimise harm, and not simply to “avoid”.</p> <p>The Applicant's position accords with the submissions put by Historic England and the National Trust.</p> <p><b>George Lambrick of the Council for British Archaeologists</b>, referred to paragraph 5.139 of the NPSNN and asserted that the ability to record evidence of the past is not a factor that can be taken into account in the planning balance. The Applicant did not respond on this point at the hearing, and has now provided a response in <b>Appendix B</b> to this summary.</p>
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<b>4 STONEHENGE AND AVEBURY WORLD HERITAGE SITE (WHS) IN CONTEXT</b>	
<b>Agenda Item</b>	<b>Highways England response</b>
	<p><b>Richard Bartosz</b> delivered a presentation.</p> <p><b>Post hearing note:</b> the Applicant notes in response that it has utilised the currently accepted and ICOMOS' endorsed astronomical and solstitial theory for Stonehenge as presented in APP-200, 6.3 Environmental Statement Appendix 6.1 Annex 5 - Astronomy and Archeoastronomy. Regarding the positioning of the Eastern portal, this is hidden at the head of a dry valley and will not be visible from Stonehenge due to the presence of intervening topography (King Barrow Ridge) and therefore will not interfere with equinoxial alignments asserted by Mr Bartosz.</p>
<p><b><i>i. Consideration of the WHS as a whole, and of its surrounding area.</i></b></p> <p><b><i>ii. The Statement of OUV and the relevance of Mesolithic as well as Neolithic and Bronze Age matters.</i></b></p> <p><b><i>iii. The effects of the Proposed Development on the cultural heritage of the WHS as a whole.</i></b></p>	<p>Discussion took place regarding the various points under this agenda item in parallel.</p> <p><b>The Examining Authority</b> invited comments in relation to the consideration of the WHS as a whole, including Avebury.</p> <p><b>Ms Hutton, on behalf of the Consortium of Archaeologists and Blick Mead Project Team</b>, asserted that the WHS is not only significant for the attributes that make up the OUV. Ms Hutton submitted that the WHS is also significant due to the Mesolithic finds at Blick Mead. Ms Hutton submitted that the HIA is focussed solely on the attributes of OUV, integrity and authenticity, and has not taken a wider view of the significance of the WHS. Ms Hutton asserted that had the Mesolithic remains been known about at the time of inscription, they would have been included in the Statement of OUV.</p> <p><b>Mr Owen John of Historic England</b>, stated that it was not possible to say whether, if the WHS were being considered for inscription now, Blick Mead would be included. Evidence would be required to demonstrate the relationship with other Mesolithic sites in the region. Mr Owen John noted that the inclusion of Blick Mead in the WHS would require re-nomination of the WHS. Mr John Owen confirmed that regardless of the significance of Blick Mead, it plays no part of the OUV, although regard still has to be had to Blick Mead in order to ensure heritage is properly safeguarded and managed. Mr Owen John explained that this is the context in which Highways England has properly undertaken its assessment of Blick Mead as well as of the OUV on the whole.</p> <p>With respect to Avebury, Mr Owen John explained that for a serial WHS with more than one geographical component, it is a requirement that each component makes a substantial contribution to the OUV of the WHS as a whole. That is the case for this WHS. Mr Owen John noted that the HIA rightly focussed on the Stonehenge component and impacts on it, and that any potential harm to the Stonehenge component would be harm to the OUV of the WHS as a whole, including Avebury. A separate HIA was not required for Avebury. Mr Owen John cited various examples in relation to harm to one component of the WHS impacting on the OUV as a whole.</p> <p><b>Susan Denyer of ICOMOS UK</b> made submissions in relation to the Mesolithic remains supporting the OUV, and the WHS being considered as a landscape of sites with planned inter-relationships. Ms Denyer also made submissions in relation to the authenticity of the WHS in terms of how well the attributes of the OUV conveyed the WHS's value.</p>

<p><b>Mr Lambrick of Council for British Archaeologists</b> made submissions in relation to the importance of the Mesolithic finds, and that the components of the attributes are examples and not exhaustive. Ms Denyer made a similar point in relation to the list of attributes not being fixed.</p> <p><b>Kate Fielden of Stonehenge Alliance</b> (and also a member of the Avebury Society), noted that members of the Avebury Society were concerned about the Scheme creating a precedent for a bypass at Avebury.</p> <p><b>Barry Garwood</b> made submissions in relation to the importance of Mesolithic finds at Blick Mead and that consideration should be given to monuments falling outside the boundary of the WHS.</p> <p><b>Ms Pomeroy-Kellinger of Wiltshire Council</b>, agreed that the Mesolithic remains are highly significant, however noted that they do not contribute to OUV. Although not part of the OUV assessment, Ms Pomeroy-Kellinger noted that Wiltshire Council viewed the remains as highly significant and as a result are giving them serious consideration in the development of the mitigation for the Scheme.</p> <p><b>The Examining Authority</b> queried whether London Road would have once gone through the middle of Amesbury, and could have been on Mesolithic remains as part of Blick Mead.</p> <p><b>Ms Pomeroy-Kellinger</b> explained that this was specifically looked at as part of the evaluation strategy, as earlier work in the 1990s did pick up some Mesolithic remains. Nothing was picked up in this respect as a result of the work done last year, and Highways England's technical experts have looked at borehole results and test results from when the A303 was built to see if evidence remains, and have concluded that as a result of the techniques used to build that road, those remains have gone. Ms Pomeroy-Kellinger said we can be confident there are no remains.</p> <p><b>Post hearing note:</b> the Applicant notes, in response to the Examining Authority's comment, that London Road would not have crossed Blick Mead or any similar topographic location.</p> <p><b>Paul Garwood of the Consortium of Archaeologists and Blick Mead Project Team</b>, submitted that the WHS should not be treated as a collection of assets, and should be treated as one single site. Dr Garwood also made submissions about the importance of a large pit feature at a location east of King Barrow Ridge, which Dr Garwood asserted corroborated Mesolithic activity in the WHS.</p> <p><b>Reuben Taylor QC</b> responded to the points raised as follows:</p> <ol style="list-style-type: none"> <li>i. <i>Adequacy of consideration of WHS as a whole</i> – In terms of inclusion of Mesolithic remains, Mr Taylor QC submitted that it is right that these are not part of OUV, however Highways England accepts that the remains are significant in terms of evidence of earlier populations. Although assets that do not convey the attributes of OUV have not been considered in the HIA, they are considered in ES Chapter 6, Cultural Heritage [APP-044]. Mr Taylor QC noted that further information is available in the Applicant's responses to written questions CH.1.8 and CH.1.17 [REP2-025].</li> <li>ii. <i>Consideration on asset by asset basis</i> – Mr Taylor QC agreed with the submission that the assessment should not be conducted purely on an asset by asset basis. The approach taken in the HIA considers the overall impact on the OUV of the WHS in line with ICOMOS Guidance and the methodology set out in the Scoping Report accepted as appropriate by the ICOMOS Advisory Mission report (as recorded above) (see section 5.0 of the HIA [APP-195]).</li> </ol>
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	<p>iii. <i>The suggestion that the wider impact on Avebury had been omitted</i> – Mr Taylor QC directed the Examining Authority to the Applicant’s response to written question CH.1.4 [REP2-025] which demonstrates that the impact of the Scheme on the whole WHS has been properly considered.</p> <p>iv. <i>Potential for the Scheme to create a precedent for other road schemes</i> - Mr Taylor QC noted that whilst he was not aware of any other bypasses proposed in this area, any such scheme would have to go through its own consenting process and would be determined on its merits. There is no evidence that consenting the Scheme would necessitate consent for another scheme.</p> <p>v. <i>The suggestion that the HIA failed to address matters of integrity and authenticity</i> – Mr Taylor QC referred to the comprehensive HIA submitted by the Applicant, (see section 9.4 of the HIA, [APP-195]) where those matters have been expressly and clearly addressed, in line with the ICOMOS Guidance.</p> <p>vi. <i>Attributes of OUV</i> – Mr Taylor QC explained that the attributes of OUV flow from the Statement of OUV, and are thus defined, and are therefore used as the basis of the assessment in the HIA. This is as per the ICOMOS guidance.</p> <p>The Applicant’s position is in line with the submissions made by Historic England and Wiltshire Council.</p> <p>With respect to previous boreholes before construction of the existing A303, <b>Chris Moore, on behalf of the Applicant</b>, explained that the previous ground conditions are detailed in Preliminary Ground Investigation Report [APP-273, page 53, paragraph 4.2.28 and Table 5.2]. Paragraph 4.2.28 notes: “<i>Soft, silty, occasionally sandy peat has been identified in Alluvium in the year 1965 boreholes referenced in the ground investigation report HAGDMS reference 17031. This report was prepared in 2000 to inform the proposed improvement works at Countess Roundabout at the time. The PSSR [Preliminary Sources Study Report] suggests that the peat would have been removed at the time of construction of the Amesbury bypass and is supported by the absence of peat layers in the ground investigations carried out after year 1965</i>”. A series of test pits excavated in the early 2000s in relation to the previous A303 improvement scheme noted that alluvial deposits were generally not present, with the existing embankments formed on placed fill. It is therefore suggested that any Mesolithic material was likely to have been removed in full along with soft material in this area prior to construction of the existing A303/Countess Roundabout embankments.</p> <p>In relation to trenching north of the A303 in 2003, and the trial trenching undertaken earlier in 2018, Mr Moore explained that the results of the trial trenching are reported as part of the Archaeological Evaluation Report Eastern Portal [REP1-047]. The topography there indicates that the trenches sit at the top of the floodplain in a discrete and distinct topographical location, which is distinct from the Blick Mead deposits found and published of late.</p>
<p><b>iv. Alternative tunnel lengths</b></p> <p><b>v. Alternative routes</b></p>	<p>The Examining Authority invited comments in relation to alternative tunnel lengths or routes in the context of the WHS as a whole, noting that alternative schemes would be dealt with at a different hearing. No comments were made by any party.</p>

## 5 ES CHAPTER 6: CULTURAL HERITAGE AND APPENDIX 6.1: HERITAGE IMPACT ASSESSMENT (HIA)

Agenda Item	Highways England response
<p><i><b>i. Discussion of the adequacies of content, analyses, assessments and conclusions.</b></i></p> <p><i><b>ii. Missing information.</b></i></p>	<p>Discussion took place regarding the various points under this agenda item in parallel.</p> <p><b>Victoria Hutton</b> submitted that her clients had been unable to find a figure for how large an area will be archaeologically sterilised as a result of the Scheme, and how many artefacts have been found as part of the digs, and their location.</p> <p><b>Dr Paul Garwood</b> made submissions in relation to the type of survey techniques used by the Applicant, asserting an overreliance on magnetometer surveys and that other techniques should have been utilised.</p> <p><b>Barry Garwood</b> made submissions about the raw data informing the Applicant's reports not having been provided.</p> <p><b>George Lambrick on behalf of the Council for British Archaeologists</b>, endorsed the submissions in relation to survey techniques and availability of data. Mr Lambrick made submissions in relation to the detail of information and data provided. Mr Lambrick asserted that the use of geophysical surveys resulted in smaller features and human remains being missed, and only a small area had been trial trenched, creating uncertainty as to the results of the evaluation work. Mr Lambrick made reference to a recommendation in DMRB Volume 11 to trench 4-10% of a relevant area.</p> <p>Mr Lambrick made submissions in relation to proposals to preserve remains in situ and asserted that there was limited confidence that this could be delivered.</p> <p><b>Dr Paul Garwood</b> also made submissions about the percentage of sampling undertaken, and the inability for geophysical surveys to detect human remains. Dr Garwood did not consider sufficient sampling had been done to provide a complete picture of potential impacts.</p> <p><b>The Examining Authority</b> drew attention to the Detailed Archaeological Mitigation Strategy ("<b>DAMS</b>") and that it contains a course of investigation pursuant to which more intensive archaeological works would be undertaken before the main works for the Scheme were put in hand. The Examining Authority queried why that did not represent an appropriate balance, particularly as too much trial trenching could be destructive.</p> <p><b>Mike Parker Pearson from the Consortium of Archaeologists and Blick Mead Project Team</b>, also made submissions in relation to the sampling undertaken. Professor Parker Pearson also referred to the detection of human burials, asserting that extrapolating from a very small sample, there could be expected to be between 50-100 burials in the area of the western portal and the approach within the WHS. Professor Parker Pearson did not explain how he had reached this extrapolated number or refer to any evidence supporting it.</p> <p>With respect to any uncertainty about the findings of the surveys and trenching, <b>Reuben Taylor QC</b> referred the Examining Authority to the comprehensive programme of archaeological field work developed in consultation with HMAG and the Scientific Committee (for work undertaken within the WHS), the results of which informed the findings reported in the Environmental Statement [APP-044 and APP-195] and which are reported in the evaluation reports submitted at Deadline 1 (see <b>Examination Library Reference REP1-039 – REP1-056</b>).</p>

<p>In terms of evaluation techniques and sampling, <b>Chris Moore</b> explained that Highways England developed its programme of archaeological evaluation with input from HMAG. Advice was also received from the Scientific Committee and the Applicant incorporated aspects of that advice in discussion with HMAG. The programme of archaeological evaluation consisted of geophysical surveys, artefact sampling of topsoil and trial trenching. The geophysical surveys were undertaken between January and August 2018 and during the previous preferred route selection stage. Some of those earlier reports are available on the Scientific Committee website, and the results of the more recent phase of surveys were used as the basis for the conclusions in the ES and are reported in detail in the reports submitted to the Examination at Deadline 1 (see <b>Examination Library Reference REP1-039 – REP1-056</b>). The surveys (undertaken in 2016 and 2017 with respect to the preferred route selection) included detailed magnetometer surveys carried out to current standards, as advised by Historic England, and ground penetrating radar (GPR) surveys. The more recent surveys (undertaken in 2018 for the preferred route) included geophysical survey, plough zone artefact collection (field walking and test pitting), trial trenching and geoarchaeological investigations.</p> <p>Mr Moore explained that the artefact content of the topsoil was surveyed through gridded sampling, which resulted in a considerable sample of the topsoil in each evaluation location, across the area of the scheme, within and outside the WHS. Mr Moore explained that trial trenching was targeted using geophysical surveys and sought to identify and characterise the anomalies in the geophysical survey results, and to incorporate the assessment of the artefact content of the topsoil. In response to an assertion from Professor Parker Pearson with respect to undertaking trial trenching without undertaking top soil sieving, Mr Moore explained that this only happened in an area of a pig field, where the trial trenching was undertaken prior to topsoil sampling for health and safety reasons due to the presence of pig dung. In any event, the topsoil sampling was carried out at this location (in October 2018, following the trenching in August 2018) and the results reported at Deadline 3 (see <b>Archaeological Evaluations. Review of Ploughzone Lithics and Tree Hollow Distributions, REP3-024</b>).</p> <p>Mr Moore noted that, in general, the approach taken to archaeological investigation and mitigation will always include an element of sampling, and in this respect, the approach taken for the Scheme is consistent with good practice. Mr Moore further noted that every time an investigation is carried out, there is a risk of destroying something, so there is a balance to be struck with the recovery of information and the loss of remains.</p> <p>Mr Moore reiterated that the approach taken was discussed with the Scientific Committee and agreed with HMAG, and confirmed that Highways England had undertaken a great deal of archaeology work, significantly more than would be usual on a similar project (accepting that the Scheme is within the WHS).</p> <p><b>Mr Taylor QC</b> explained that the techniques related to preservation in situ are described in more detail in the DAMS [REP2-038], pages 61-63.</p> <p><b>Post hearing note:</b> In relation to Professor Parker Pearson's assertion about there being 50-100 burials in the area of the western portal and the approach within the WHS, the Applicant did not respond substantively to this point in the hearing. The Applicant notes that no basis for this calculation has been provided, however Professor Parker Pearson appears to have considered the potential occurrence of burials across the whole of the area evaluated in the western portal approaches (approximately 14.5ha), as opposed to the area that would be affected by the cutting (approximately 4.5ha), and on this basis the calculation would appear to be flawed.</p>
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	<p><b>Post hearing note:</b> With respect to Ms Hutton's submission that her clients could not identify the area of archaeology within the WHS affected by the Scheme. The Applicant did not respond on this point during the hearing, but notes that approximately 170 hectares of land across the Scheme is included in the DAMS, of which 105 hectares is for archaeological investigation and 65 hectares for preservation in situ beneath fill of less than 2m depth plus 17.5 hectares for preservation in situ beneath compounds / haul roads, temporary roads. Within the WHS, the footprint of the Scheme would affect approximately 7.3 hectares.</p> <p><b>Melanie Pomeroy-Kellinger of Wiltshire Council</b> explained that the evaluation strategy (pursuant to which the Applicant's programme of archaeological evaluation was undertaken) was a 72 page report which had undergone a significant amount of consultation and was informed by a great deal of thought. Ms Pomeroy-Kellinger explained that there were twelve principles directing the evaluation work, informed by the World Heritage Convention. The principles included that intrusive work would only be undertaken where necessary to understand the impact of the Scheme on key assets. The approach was carefully balanced to ensure damage was minimised or avoided. The amount of sampling varied depending upon what information already existed. In terms of sampling, the general principle adopted was sampling of 5-10% across the Scheme as a whole, with sampling being closer to 10% within the WHS. These figures included areas previously evaluated. Ms Pomeroy-Kellinger confirmed Wiltshire Council's view that the evaluation programme was comprehensive, and it is considered that enough information has come to light to give confidence going into the mitigation stage. Ms Pomeroy-Kellinger acknowledged that an extensive programme of mitigation is needed which will involve further investigation and excavation.</p> <p><b>Mr Lambrick</b> noted that he was not criticising the suite of valuation methods used, and stated that the techniques used are very thorough. Mr Lambrick submitted instead that the key point was that the description of the forecasting methodology did not adequately identify the difficulties and main uncertainties, as required by Regulation 14(3)(b) and Schedule 4, paragraph 6 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.</p> <p><b>Mr Taylor QC</b> explained that the points raised by Mr Lambrick have all been properly addressed already in the Environmental Statement. The assessment assumptions and limitations are set out in section 6.4 of the cultural heritage chapter of the ES [APP-044] (this approach has been taken for each chapter of the Environmental Statement) and section 5.6.17 of the HIA [APP-195], in compliance with the requirements of the EIA Regulations to include details of difficulties encountered compiling the required information and the main uncertainties involved. The Archaeological Evaluation and Survey Reports Introduction Letter [REP1-040] explains the way in which the results reported in detail at Deadline 1 (see <b>Examination Library Reference REP1-039 – REP1-056</b>) informed the Environmental Statement.</p> <p>Mr Taylor QC submitted that it was unclear how other parties have reached their conclusions as to the impact of the Scheme on the OUV of the WHS, when they have not conducted an HIA in accordance with the ICOMOS Guidance. Mr Taylor QC submitted that there is one HIA, prepared by Highways England, before the Examining Authority; other parties have expressed views on it, but have not produced an HIA in support of their conclusions.</p> <p>The Applicant is in agreement with the submissions from Wiltshire Council.</p>
<p><b>iii. Range of photomontages and choice of receptors.</b></p>	<p><b>Colin Shell</b>, speaking on his own behalf (although a member of the Avebury and Stonehenge Archaeological and Historical Research Group (ASAHRG), and a member of the Scientific Committee) made submissions about the need for a full 3D model of the Scheme in</p>

	<p>order to properly assess the effect of the Scheme. Dr Shell also referred to photomontages from particular view points and walk-throughs that had been requested from Highways England but not provided.</p> <p><b>Sarah Simmonds of the WHS Coordination Unit</b> referred to wanting to see visualisations to understand the experience of moving through the landscape.</p> <p><b>Reuben Taylor QC, on behalf of the Applicant</b>, explained that a range of photomontages had already been submitted by the Applicant, and further photomontages at Deadline 3. In the heritage context, the ICOMOS Guidance at paragraph 5.2 deals with the limitations of photomontages, stating:</p> <p><i>“There is sometimes a tendency to see impacts as primarily visual. While visual impacts are often very sensitive, a broad approach is needed as outlined in the ICOMOS Xi’an Declaration. Impacts take many forms – they may be direct and indirect; cumulative, temporary and permanent, reversible or irreversible, visual, physical, social and cultural, even economic. Impacts may arise as a consequence of construction or operation of the proposed development. Each needs to be considered for its relevance to the HIA.”</i></p> <p><b>Post hearing note:</b> The Applicant notes with respect to the 3D model for the Scheme:</p> <ul style="list-style-type: none"> <li>• The model was developed as necessary to inform the consultation materials, assessments and design drawings required for the DCO submission.</li> <li>• It is a 3D model of the Scheme only, not a 3D model of the wider landscape.</li> <li>• It represents a working tool rather than a fully comprehensive complete model of every single component of the scheme.</li> <li>• When generating photomontages, that specific section of the model is brought into a fully complete state to generate the particular montage under consideration.</li> <li>• The process of generating the photomontage is verified to ensure accurate alignment of the model and the photo.</li> </ul> <p>Given the purpose for which the model was produced and utilised, the Applicant does not propose to release the 3D model.</p>
<p><b>6 ES CHAPTER 6: EFFECT OF ELEMENTS OF THE PROPOSED DEVELOPMENT ON CULTURAL HERITAGE ASSETS AND THEIR SETTINGS</b></p>	
<p><b>Agenda Item</b></p>	<p><b>Highways England response</b></p>
	<p><b>Mike Parker Pearson of the Consortium of Archaeologists and Blick Mead Project Team</b> delivered a presentation. Professor Parker Pearson asserted that around 10 hectares of land within the WHS will be archaeologically sterilised, and that it is no longer accurate to state there are few archaeological remains in the areas of the western and eastern portal. Professor Parker Pearson made submissions in relation to destruction of remains by excavation, and that there would only be partial preservation of what is lost by archaeological record.</p>



Professor Parker Pearson made submissions in relation to the discovery of Neolithic long barrows - south of the Scheme (outside the red line boundary) in 2017 and speculated that such long barrows could have been built as a collection of monuments, and that the Scheme would damage this group of long barrows. Professor Parker Pearson's presentation also related to assets in the plough soil, levels of sampling, and the potential to learn from the evaluation of artefact concentrations in the western and eastern tunnel approaches.

**Paul Garwood of the Consortium of Archaeologists and Blick Mead Project Team** also delivered a presentation, in relation to the uniqueness of the Winterbourne Stoke Crossroads barrows, and the possibility of the barrow groups at the western portal being considered collectively. Dr Garwood suggested that the road would cut through an array of assets at the western approach, and made submissions about viewsheds and the visual connections between barrow groups at this location. Dr Garwood submitted that the Scheme would create a visual barrier between the Winterbourne Stoke barrow group and other barrow groups.

**George Lambrick of Council for British Archaeologists** made submissions about having better evaluation techniques in future, and that new hypotheses may emerge in the future. Mr Lambrick also suggested that the alignment of the road may sever a longer cemetery.

**Chris Moore on behalf of Highways England** referred to the reports submitted at Deadline 1, setting out the results of the evaluation work done at the western portal (see **Report 4 - Western Portal and Approach, REP1-045 and REP1-046**). Mr Moore explained that a further report was submitted at Deadline 3 (see **Palaeoenvironmental Assessment - Western Portal and Approaches, REP3-023**) regarding artefact scatters and which identifies those at the western portal which would be covered by the DAMS. Mr Moore also noted that the HIA assesses an adverse effect on Attribute 2 at the western portal.

Mr Moore explained that the Applicant fully recognises the significance of the Winterbourne Stoke Crossroads barrow group, and that it conveys the OUV of the WHS very clearly. Mr Moore explained that the Scheme would deliver benefits in this respect by removing the Longbarrow Junction and placing it further west, and moving the A360 and A303 alignment away from these barrow groups. The effect of this would be to remove the sight and sound of traffic that currently adversely impacts the setting of the Winterbourne Stoke Crossroads barrows.

In terms of the views from the Winterbourne Stoke Crossroads barrows across to the other barrow groups, Mr Moore explained that the purpose of the cutting is to reduce visibility of the sight of traffic on the new road from key views and significantly reduce or remove the sight of the traffic that currently travels along the busy A303.

With respect to the views assessed in the HIA, Mr Moore confirmed that the views had been selected and agreed with HMAG.

Mr Moore explained that with respect to levels of sampling and the mitigation of archaeological remains affected by the Scheme, discussions are ongoing with heritage stakeholders to develop the DAMS, with meetings scheduled in the next month with HMAG and the Scientific Committee to help guide the appropriate course of actions in terms of the remains.

Mr Moore referred to the geophysical survey findings from Dr Garwood, and noted that the Applicant had had early sight of these findings courtesy of an invitation from HMAG. Mr Moore noted that the work undertaken is to the north of the proposed Scheme alignment. Mr Moore reiterated that the approach taken to the programme of archaeological evaluation for the Scheme had been agreed with HMAG. Mr Moore also responded to a comment that the techniques used by the Applicant would make detecting chalk-filled features in chalk difficult to detect, explaining that the Applicant's experience had been that such features are detectable in chalk landscape.

	<p><b>Post hearing note:</b> In terms of Mr Lambrick's submission about better techniques and technologies in future, this point was not responded to at the hearing, although it is noted that the Applicant has responded to this point in its comments on the Council for British Archaeologists' written representation [Rep3-013] at paragraph 21.4.4. 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 comprehensiveness of the assessment undertaken and the mitigation measures in place in the Detailed Archaeological Mitigation Strategy (DAMS) [REP2-038]. The application documents, in particular the Case for the Scheme [APP-294], have set out the need for the Scheme; it is neither appropriate nor a feasible approach to delay or prevent a development on the basis that there could potentially be better technologies in future. Taking that approach, no infrastructure would ever be delivered, despite the need for it. In any event, were future technologies to be developed, 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 in anticipation of further analysis.</p> <p><b>Post hearing note:</b> In terms of Mr Lambrick's submission that the alignment of the road may sever a longer cemetery, this point was not responded to in the hearing, however it is noted that the HIA assesses the Winterbourne Stoke barrow cemetery (AG12) and the Diamond Group of barrows (AG13) separately; a segmented ring ditch south west of Winterbourne Stoke Crossroads, scheduled as a possible Bronze Age round barrow, is assessed as part of AG13 rather than AG12, on topographic grounds. The identification of asset groups as part of the HIA scoping report was developed in consultation with HMAG from consideration of previous outline HIAs prepared on behalf of National Trust and Historic England by Snashall and Young. The Winterbourne Stoke barrow group is generally accepted to extend north-east of the existing roundabout, as shown in Dr Garwood's presentation; the Scheme does not, therefore, sever any part of the Winterbourne Stoke barrow group.</p>
<p><i><b>i. Winterbourne Stoke by-pass including Parsonage Down and the River Till viaduct.</b></i></p>	<p><b>David Dawson of the Wiltshire Archaeology and Natural History Society</b>, made submissions in relation to the impact of the chalk and tunnel arisings on the archaeology of the area.</p> <p><b>George Lambrick of the Council for British Archaeologists</b>, made submissions in relation to the effect on the plough zone archaeology and raised concerns with the handling of soil, and whether topsoil would be left in situ or removed and then deposited elsewhere.</p> <p><b>The Examining Authority</b> referred to the DAMS which provides that preservation in situ will be the preferred mitigation option where the proposed fill depth is &lt;2m and the topsoil is to be retained in situ, and where the full depth is &gt;2m, topsoil will be removed prior to deposition of fill material.</p> <p><b>Mr Lambrick</b> made further submissions in relation to the removal of topsoil and the loss of the distribution of artefacts in the plough zone. In terms of stripping the topsoil, Mr Lambrick suggested this could be problematic (from an archaeological perspective) depending on the techniques used. Mr Lambrick also referred to the impact of machinery running over the stripped surface and buried topsoil not being available for plough zone archaeology.</p> <p><b>Chris Moore on behalf of Highways England</b> explained that the development of measures in the DAMS is ongoing. Mr Moore noted that the Applicant was aware of the technical difficulties referred to by Mr Lambrick and confirmed that they are being taken into account in the draft DAMS. Mr Moore stated that he was confident that in most of the cases referred to, preservation in situ would be able to be achieved, in consultation with HMAG.</p>

<p><b>ii. Winterbourne Stoke (Longbarrow) Junction</b></p>	<p><b>Paul Garwood of the Consortium of Archaeologists and Blick Mead Project Team</b> made submissions in relation to the visual impact of the Longbarrow Junction from the linear barrow groups, and the impact on the wider setting of the barrow groups. Dr Garwood referred to the impact of the feeder road from the visitors' centre running close to the barrow group.</p> <p><b>Kate Fielden of Stonehenge Alliance</b> made submissions in relation to the impact of traffic lights creating a glow in the night sky. <b>Barry Garwood</b> also commented on the effect of the lights at Longbarrow Junction.</p> <p><b>George Lambrick of the Council for British Archaeologists</b> made submissions in relation to the damage to the topography that would result from the Scheme, and that this affected one of the key OUV, the relationship to the landscape including the topography. Mr Lambrick also referred to the impact of the Longbarrow Junction on the C-shaped enclosure and submitted that it contributes to the OUV of the WHS.</p> <p><b>Melanie Pomeroy-Kellinger of Wiltshire Council</b> submitted that the C-shaped enclosure was not considered to have attributes of OUV as it is late Bronze Age. Ms Pomeroy-Kellinger noted that this has been considered in detail.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> explained that the key issue in relation to the potential impact of the Longbarrow Junction is the comparison between the existing position and what is proposed. Mr Taylor QC suggested that the Examining Authority should give careful consideration as to whether the views being expressed by other parties were giving appropriate weight to the existing impact compared to the improvements delivered by the scheme, and suggested that they were not.</p> <p>In terms of lighting, Mr Taylor QC confirmed that the proposed Scheme commits to no lighting at the Longbarrow Junction and the junction has been designed to reduce the impact of headlights. Mr Taylor QC highlighted this has a good example of the proposed Scheme producing an improved situation, both in terms of moving it away from heritage assets, as well as due to its design and lighting.</p> <p>Alternative layouts for the Longbarrow Junction have been given careful consideration, as evidenced in <b>Tables 3.11 and 3.12 of Chapter 3 of the Environmental Statement [APP-041], and the Applicant's responses to written questions AL.1.23 and AL.1.24 [REP2-024] and CH.1.6 [REP2-025].</b></p> <p><b>Chris Moore on behalf of the Applicant</b> explained that in terms of soil handling at Parsonage Down, soil handling is controlled by the soil management strategy required by <b>MW-G7 in the Outline Environmental Management Plan ("OEMP") and the method statement required by MW-CH5 of the OEMP [REP3-006].</b> These will take account of the standard requirements with respect to soil handling.</p> <p>Responding to comments made about assets outside the WHS boundary and a buffer zone, Mr Moore explained that in the HIA the Applicant has taken account of assets outside the WHS that contribute to and convey attributes of OUV, such that, in accordance with ICOMOS Guidance, if a buffer zone was established the Applicant would have assessed the impact on such assets that would fall within the buffer (see also the <b>Applicant's response to written question CH.1.58 [REP2-025]</b>).</p> <p><b>Post hearing note:</b> In terms of the assertion from Dr Garwood in relation to the impact of the feeder road from the visitors' centre, this road is the A360 link to the new junction. This road will be 86m from the Winterbourne Stoke barrow group, and will therefore be considerably further away than the existing A360. The road will also be in shallow cutting with hedgerows. The HIA finds (page 205), that <i>"As a whole, the realignment of the highways, and their placement in cutting, would be of benefit to the visual setting of the monuments within the group. Where greater separation occurs, it would improve visitors' ability to appreciate the monuments' setting,</i></p>
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	<p><i>in the context of reduced views of roads, signage and lighting. The benefits would be greatest for the more south-westerly and westerly monuments, including the long barrow and those flanking the present A360. The setting of those monuments already at greater distances from the present roads would benefit to a somewhat lesser extent”.</i></p>
<p><b>iii. Cuttings, embankments, and land bridges.</b></p>	<p><b>Sarah Simmonds of the WHS Coordination Unit</b> submitted that there was insufficient detail to show how the cuttings, embankments and land bridges mitigated the impact on the WHS as a whole.</p> <p><b>George Lambrick of the Council for British Archaeologists</b> made submissions in relation to preservation in situ under embankments and reinforced earth under land bridges.</p> <p><b>Kate Fielden of Stonehenge Alliance</b> queried whether paragraph 191 of the NPPF in relation to deliberate neglect of a heritage asset could be taken into account.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> explained that in relation to design features within the WHS as a whole, at Deadline 3 the Applicant had submitted a revised OEMP [REP3-006], which included numerous detailed design commitments and draft design principles which are under discussion. By the end of the Examination, there will be a full set of design principles designed to take on board the types of concerns raised about the detailed design of the Scheme.</p> <p>Mr Taylor QC explained that in terms of areas for preservation in situ, some 22 sites have been identified in Appendix D of the DAMS [REP2-038] as being proposed for preservation in situ.</p> <p>With respect to paragraph 191 of the NPPF, Mr Taylor QC explained that this relates to the deliberate neglect of a heritage asset, for example situations where listed buildings are deliberately neglected in order that they can be demolished. Mr Taylor QC submitted that the A303 was a long way from the situation envisaged by paragraph 191, and confirmed there has been no deliberate neglect in this case.</p>
<p><b>iv. Western portal, including 200m limit of deviation westwards</b></p>	<p><b>David Dawson</b> submitted that the western portal should be located outside the WHS.</p> <p><b>George Lambrick of the Council for British Archaeologists</b> made submissions in relation to the impacts at the western portal, and the loss of archaeology and its effect on understanding.</p> <p><b>Paul Garwood of the Consortium of Archaeologists and Blick Mead Project Team</b> asserted that the western portal was not concealed because of elements such as fencing, particularly when close to the portal.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> explained that the location of the portal had been appraised in paragraphs 3.3.42 – 3.3.50 in ES Chapter 3 [APP-041] and the Applicant’s response to written questions AL.1.25, 1.26, 1.29 [REP2-024]. In terms of the design of the western portal, Mr Taylor QC noted that discussions were ongoing in this respect, and the latest OEMP submitted at Deadline 3 included a number of design commitments in that regard.</p> <p><b>Post hearing note:</b> In response to comments about the effect of fencing within the WHS, this fencing shall be developed in consultation with the National Trust, Historic England, English Heritage and Wiltshire Council, as secured in the Outline Environmental Management Plan (OEMP) [REP3-006] (D-CH14). Within the WHS, all fencing above the top of the cuttings shall be post and wire with</p>

	<p>stock-proof netting as appropriate, and be consistent with other fencing within the WHS (D-CH24). The type of fencing would be sympathetic to the setting of the WHS. The top of new highway boundary fencing within the western cutting shall be no higher than the ground level at the top of the cutting alongside which the fencing runs (D-CH25).</p>
<p><b>v. Cut and cover tunnel and bored tunnel.</b></p>	<p><b>George Lambrick of the Council for British Archaeologists</b> queried whether there was an assessment of the hydrological effects on Wilsford Shaft.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> noted that the Applicant would confirm its position on this point.</p> <p><b>Post hearing note:</b> The Wilsford Shaft was fully excavated between 1960-62 with all archaeological deposits removed; although it is protected as a scheduled monument, the original waterlogged deposits are no longer present. No hydrological changes are predicted as a consequence of the Scheme in the location of the Wilsford Shaft. Regardless, any hydrological changes would have no impact on the significance of the heritage asset, and as a result, no assessment of hydrological impact on Wilsford Shaft was undertaken. Further detail is provided in the <b>Applicant's comments on written representations [REP3-013] at paragraph 21.4.63.</b></p>
<p><b>vi. Eastern portal, including 30m limit of deviation eastwards</b></p>	<p><b>Barry Garwood</b> made submissions about the impact of headlights on Vespasian's Camp.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> referred the Examining Authority to the assessment of the impact at the eastern portal in ES Chapter 6 and HIA, which includes an assessment of the impact on Vespasian's Camp. The assessment in relation to the impact on Vespasian's Camp, for the operational phase of the Scheme, concluded that, as the Scheme would adopt a nearly identical surface alignment as the present A303, the impact of the Scheme would remain as per the current baseline. The effect of the Scheme would be neutral.</p> <p><b>Victoria Hutton, on behalf of the Consortium of Archaeologists and Blick Mead Project Team</b>, made submissions asserting that the findings of the HIA may not remain valid, in light of further archaeology revealed by Professor Parker Pearson in his presentation. <b>Mr Taylor QC</b> confirmed that the Applicant's assessment is as set out in the Environmental Statement and HIA. The information identified (the findings of which were reported at Deadline 1) informed the conclusions of the Environmental Statement and HIA and there has been no change to the assessments undertaken since the submission of those documents with the DCO application. Mr Taylor QC confirmed that the Applicant's position is based on the appraisal of the impact on the OUV in the HIA, and noted the position of the Consortium of Archaeologists and Blick Mead Project Team, that it had not undertaken its own HIA for resourcing reasons.</p> <p>Mr Taylor confirmed, in response to a comment from George Lambrick of Council for British Archaeologists, that in relation to the Limits of Deviation (LoD), the effect of the LoD is to allow for the extension of the tunnel in the way identified, and any additional length added to the tunnel from the LoD will be in addition to the length of the tunnel (<b>see further explanation in the Applicant's response to written questions CH.1.57 [REP2-025] and DCO.1.25 and 1.26 [REP2-030]</b>).</p>
<p><b>vii. Countess flyover</b></p>	<p><b>Barry Garwood</b> made submissions in relation to the impact of the flyover on Countess Farm.</p>



<p><b>George Lambrick of Council for British Archaeologists</b>—made submissions with respect to the setting of Blick Mead, in particular asserting that it was incorrect to assess the setting of Blick Mead as part of the setting of the Amesbury Abbey Registered Park and Garden.</p> <p><b>Victoria Hutton on behalf of the Consortium of Archaeologists and Blick Mead Project Team</b>, made reference to a recent meeting between the Applicant and Andrew Rhind-Tutt in relation to a photomontage of the view from the boundary of the Amesbury Abbey Registered Park and Garden, and suggested that there were errors with the photomontage (in relation to the height of the road compared with engineering sectional drawings). Ms Hutton also asserted that the screening at this location relied on trees outside the control of the Applicant and that no consideration had been given to noise. Ms Hutton submitted that the photomontage in question may have been part of the Applicant’s statutory consultation in April 2018, and suggested that the same photomontage was produced at the site visit. Ms Hutton was not clear if the photomontage was part of the Environmental Statement. The photomontage had also been reproduced by Mr Rhind Tutt in REP3-089. Ms Hutton’s understanding was that the Applicant had agreed that the level of the road is incorrect in the photomontage. Ms Hutton asserted that this had implications in terms of the assessment and adequacy of consultation.</p> <p><b>Reuben Taylor QC on behalf of the Applicant</b> explained that the photomontage referred to was produced as part of the Applicant’s statutory consultation process in 2018. Mr Taylor QC explained that Amesbury Abbey asked for a specific view from their land ownership, which is why the photomontage was produced. Following feedback received at statutory consultation, noise barriers were subsequently included at the flyover, which is why the photomontage is no longer accurate. This was explained to Mr Rhind Tutt by the Applicant. Mr Taylor QC confirmed that this was an earlier photomontage produced for a specific party.</p> <p>Mr Taylor QC explained that the meeting the previous week was a discussion between the Applicant and the owner of Bowles Hatches about impacts on their property, which Mr Rhind Tutt attended.</p> <p>Mr Taylor QC further confirmed that the photomontage is not one of the agreed viewpoints and so does not appear in the Environmental Statement.</p> <p>In response to a question from the Examining Authority, Mr Taylor QC confirmed that the heights shown without the barriers on the photomontage are as currently proposed.</p> <p><b>Post hearing note:</b> With respect to the impact of the Scheme on Countess Farm, please see the Applicant’s response to written question CH.1.47 [REP2-025].</p> <p><b>Post hearing note:</b> In relation to points made at the hearing about the approach to the assessment of the setting of Blick Mead, the Applicant directs the Examining Authority to its <b>response to written question CH.1.8 [REP2-025]</b>, in particular, paragraph 8 which provides that:</p> <p><i>“The context of the Blick Mead site is its underlying topography and its relationship to the River Avon, within its setting of the Amesbury Park. It is part of a wider distribution of Mesolithic sites within the landscape, described in ES Appendix 6.2 Archaeology Baseline Report [APP-211].”</i></p>
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	<p>There would be no change to the current physical setting of Blick Mead due to the Scheme, which would be constructed within the existing highway boundaries of the A303, reusing the existing dual carriageway where it passes Blick Mead with no change in the existing height of the road here.</p> <p>As explained in Highways England's Comments on Written Representations [REP3-013; paras 44.2.10; 45.2.26 – 27; 57.1.7] the setting of Blick Mead would be unchanged as a result of the Scheme and is, in any event, protected by the natural landform and by substantial vegetative screening.</p> <p>The Applicant has also addressed this point in the response to the Examining Authority's written question CH.1.17 [REP2-024, implications of construction at Countess Roundabout on Blick Mead]; and CH.1.45, [REP2-024, visual impact of Countess flyover on Blick Mead].</p> <p>In terms of the impact of noise at Blick Mead, the change to noise at this location would be negligible.</p> <p><b>Richard Bartosz</b> made submissions with respect to mitigating impacts from sky glow or direct headlights from the flyover and referred to other challenges to the flyover and its impact on Amesbury Abbey as raised in representations from the Amesbury Abbey Group.</p> <p><b>Nick Snashall of the National Trust</b> made submissions in relation to the impact of the flyover on Grade II listed buildings. Dr Snashall referred to the acoustic and visual barrier to be provided, and to discussions between the National Trust and the Applicant about planting to be provided on National Trust's land to mitigate this impact.</p> <p><b>Mr Taylor QC on behalf of the Applicant</b> noted that the impact at Countess flyover was addressed in Table 6.11 of Chapter 6 of the Environmental Statement [APP-044], the Applicant's response to written question CH.1.8, and the Applicant's comments on the written representation from the Amesbury Abbey Group [REP3-013] at paragraphs 26.2.13 &amp; 26.4.22 .</p> <p>In response to questions on the height of the flyover, Mr Taylor QC explained that this was addressed by the Applicant in response to the representations made at the open floor hearing (see paragraph 2.11.7.2) [REP3-012]. That paragraph points to relevant sheets in engineering drawings, and a sketch is produced on page 2-15 of the document, which provides the height at various points of the flyover.</p> <p><b>Post hearing note:</b> With respect to the impact of the Scheme on Countess Farm and the planting being discussed with the National Trust, please see the Applicant's response to written question CH.1.47 [REP2-025].</p>
<b>viii. East of Amesbury</b>	There was no discussion on this point.
<b>7 DETAILED ARCHAEOLOGICAL MITIGATION STRATEGY (DAMS) AND ASSOCIATED DOCUMENTS</b>	
<b>Agenda Item</b>	<b>Highways England response</b>
<b><i>i. Content: Archaeological narrative, identification of archaeological sites and</i></b>	<b>Mike Parker Pearson of Consortium of Archaeologists and Blick Mead Project Team</b> delivered a presentation which outlined his recent studies in the WHS and his views on the need for comprehensive survey information and a high degree of sampling of the plough soil. Professor Parker Pearson asserted that half a million prehistoric artefacts would be lost without record or recovery unless 100%

<p><b><i>their description, scheme impact, and the mitigation proposed.</i></b></p> <p><b><i>and</i></b></p> <p><b><i>ii. Mitigation methods: Adequacy in themselves and in their application to particular sites.</i></b></p>	<p>hand sieving was carried out. Professor Parker Pearson's presentation also included submissions relating to the concentration of Neolithic long barrows at the western approach and flint distributions at the eastern portal. In response to a question from the Examining Authority, Professor Parker Pearson confirmed that he considered 100% sieving was required in the areas to be excavated or which were liable to be damaged by compression or otherwise in construction. Professor Parker Pearson explained that the sieving would be extremely time consuming and would require a team of 300 people over two annual seasons.</p> <p>Submissions on the importance of sufficient investigation and the use of appropriate techniques were also made by various parties including other members of the Consortium of Archaeologists and Blick Mead Project Team, Council for British Archaeology and the Stonehenge and Avebury WHS Coordination Unit.</p> <p><b>Nick Snashall of the National Trust</b> supported a 100% sampling strategy for the excavation and recording of human made archaeological features. With respect to plough zone assemblage, Dr Snashall submitted that these scatter sites do contribute to the OUV of the WHS, and as such, it is important to regard the ploughzone material as complementary to the material that would be recovered from human made features. Dr Snashall stated that in light of this the National Trust supports an intelligent mitigation sampling strategy – not 100% sampling - for those scatter sites.</p> <p><b>Melanie Pomeroy-Kellinger of Wiltshire Council</b> agreed with the National Trust's submissions in relation to an intelligent approach to topsoil sampling. Ms Pomeroy-Kellinger noted that HMAG was working to resolve the strategy in this respect in the DAMS to ensure it is adequate to deal with topsoil. Ms Pomeroy-Kellinger submitted that there is a need to distinguish between 100% sampling of areas of identified human made features, and the sample excavation of those features themselves. Ms Pomeroy-Kellinger said that typically in commercial operations sampling of 50% would be carried out, and noted that discussions were ongoing before coming to a final view.</p> <p><b>Helen Woodhouse of Historic England</b> made similar submissions to Wiltshire Council, noting that Historic England's approach had been to ensure the mitigation strategy is research-led. Ms Woodhouse explained that Historic England's advice aims to ensure the mitigation strategy is appropriate to the WHS, moving towards a more intelligent approach, so that Highways England and HMAG can focus on how to tailor the approach and strategy to the OUV and significance in more general terms of the landscape, targeting the mitigation works in a way that is both appropriate and proportionate.</p> <p><b>Reuben Taylor QC, on behalf of Highways England</b> explained that it is important to view the Detailed Archaeological Mitigation Strategy (DAMS) [REP2-038] in context; its purpose is to address and set out an appropriate response to the preservation of remains in-situ where possible, and to set out the detail of the archaeological mitigation where that is not possible. 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. Mr Taylor QC explained that the mitigation of archaeological impacts has been taken very seriously by the Applicant, since inception of the Scheme. The Applicant has facilitated detailed involvement of stakeholders, including the involvement of Wiltshire Council, the creation of the Heritage Monitoring and Advisory Group (HMAG) (comprising Historic England, Wiltshire Council, the National Trust and English Heritage Trust) and drawing on the resources of the Scientific Committee. Mr Taylor QC explained that all these parties have been involved in the development of the DAMS and will continue to be involved to provide a suitable certified document at the end of the Examination under requirement 5 of Schedule 2 of the draft DCO.</p>
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<p>Mr Taylor QC submitted that in this context, it is important to view the DAMS as a travelling document, that is being developed during the Examination process. As a result, some of the details such as the percentages of sampling and the techniques are not yet finally addressed and these details will be added following discussion with the relevant parties inputting to the evolution of the DAMS.</p> <p>In response to the presentation by Professor Parker Pearson, <b>Chris Moore, on behalf of Highways England</b>, explained that the archaeological work undertaken included a gridded test pit sample of 1% of the surface area of the evaluation areas in the WHS, on the recommendation of the Scientific Committee. Mr Moore explained that that work had produced flint scatters, and whilst there are theories on the significance of that material, the Applicant's position is that those theories are untested and the suggestions can only be treated as possibilities. Mr Moore explained that the detail of the flint scatters obtained through the test pitting process is reported in Archaeological Evaluations. Review of Ploughzone Lithics and Tree Hollow Distributions [REP3-024], separately from the Western portal evaluations [REP 1- 045 to 046]. Mr Moore explained that the preparation of the REP3-024 report was undertaken in discussion with HMAG, and an early version of the report was sent to the Scientific Committee for information and in order to assist the committee in commenting on the emerging DAMS. Mr Moore noted that the final report submitted [as REP3-024] contains some differences from the draft version provided to the Scientific Committee. Mr Moore explained the differences as follows:</p> <ul style="list-style-type: none"> <li>- in terms of proposed sample size, the REP3-024 report identifies the potential areas of lithic concentrations in the ploughzone; these are the areas presented in Professor Parker Pearson's presentation to the hearing. Mr Moore assured Professor Parker Pearson that the largest of the areas proposed in this report for further investigation includes the concentration of tools which the Professor particularly highlighted in his presentation.</li> <li>- paragraph 2.4.4, page 12 of the REP3-024 report includes proposals for topsoil sieving forming part of the further proposed sampling of the ploughzone in the detailed mitigation strategy for the five identified areas. The approach follows the same scalable test pitting strategy used at the evaluation stage, with proposed increases in the percentage of the sample, to refine the understanding of identified areas and to target resources in investigating them appropriately. This could allow for the sampling to be scaled up to 100% in a particular area, to recover all material.</li> <li>- tree hollows are also detailed within the REP3-024 report, and they are addressed slightly differently to the early draft seen by the Scientific Committee. The REP3-024 report reflects the intention to identify a representative sample for excavation, which could include proximity to lithic scatters, monuments, landform and known archaeological remains. The intention is to adopt an intelligent approach in this respect, and the report reflects this.</li> </ul> <p><b>Post hearing note:</b> Professor Parker Pearson's presentation asserted that half a million prehistoric artefacts would be lost without record or recovery unless 100% hand sieving was carried out. The Applicant did not respond to this point in detail at the hearing. The Applicant notes that the detail of the assertion from Professor Parker Pearson is set out more fully in a representation from the Consortium of Archaeologists and Blick Mead Project Team. The representation considers the amount of flint recovered within the construction footprint in three locations within the WHS (Western portal approach, Eastern portal approach, and Rolleston Corner), based on drawings in the Deadline 3 submission, Archaeological Evaluations. Review of Ploughzone Lithics and Tree Hollow Distributions [REP3-024], a pre-submission draft of which was circulated for information to the Scientific Committee. The representation states that these totals derive from the 1% test pit sample, however the drawings referenced by Professor Parker Pearson aggregate the test pit topsoil results with</p>
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	<p>flint recovered from the trial trenching also. The representation states that the report [REP3-024] provided no 'absolute' figures for flint recovery.</p> <p>Accordingly, the Applicant does not consider that the assertion made by Professor Parker Pearson is soundly based.</p>
<p><b>iii. Lines of reporting: Decision making responsibilities and how these are to be secured in the Development Consent Order (DCO).</b></p>	<p><b>The Examining Authority</b>, by reference to paragraphs 1.3.3 and 1.3.4 of the draft DAMS [REP2-038], questioned the approval role of Wiltshire Council and Historic England, given their statutory duties. The Examining Authority noted that the roles of Wiltshire Council and Historic England in this respect would need resolution during the Examination.</p> <p><b>Wiltshire Council and Historic England</b> made submissions that the responsibility for the final decisions in relation to archaeological mitigation should rest with the relevant consultee.</p> <p><b>Gordon McCreath, on behalf of Highways England</b>, noted that this point had been covered in the discussion at the DCO hearing on Tuesday 4 June 2019. Mr McCreath explained the position that has been established, which is that there is provision for the final approval of the documents (i.e. the various strategies and plans to be prepared under the DAMS) in the DAMS. Mr McCreath explained the Applicant's position that this is not the same situation as an ordinary planning application, where bodies such as Wiltshire Council and Historic England would have an approval role; consistent with other DCOs (for example, the A14 Cambridge to Huntingdon Improvement Scheme, which provides for approval of a Written Scheme of Investigation by the Secretary of State), the proposed approach is that approval would not ultimately sit with the local planning authority, but with the Secretary of State.</p> <p>Mr McCreath explained that the DAMS is one of the key detailed frameworks which is intended to be agreed with key statutory stakeholders and will be approved by the Secretary of State as a certified document via the making of the Order. As a result, a very great amount of detail will have been worked through and agreed, which should give sufficient comfort that if subsequent decisions on subsidiary documents are made in accordance with that detail and in consultation with the relevant heritage stakeholders, it will suffice for Highways England to make the final decision.</p> <p><b>The Examining Authority</b> questioned if all pre-commencement investigative works will be subject to the DAMS. <b>Mr Taylor QC</b> confirmed that this was the case.</p>
	<p>At this point in the hearing, <b>the Examining Authority</b> asked a series of questions relating to specific paragraphs of the DAMS [REP2-038] (and other parties also made comments on specific paragraphs). The following sections of the written summary are therefore set out under the relevant paragraph reference in each case.</p> <p><b>DAMS paragraph 3.3.13</b></p> <p><b>The Examining Authority</b> queried what would happen to the topsoil if it was not removed (in relation to north of the embankment, within the DCO boundary at Parsonage Down East).</p> <p><b>Chris Moore</b> confirmed that topsoil removed would be stockpiled and stored and reused in landscape restoration. In response to a question from Mr Lambrick of the Council for British Archaeologists, Mr Moore explained that if the topsoil was removed where topsoil</p>

	<p>sieving is required by the DAMS, that work will have been completed first. Mapping of where in the scheme removed topsoil was re-deposited would also be for inclusion in the DAMS.</p> <p><b>Post hearing note:</b> This post hearing note provides further detail in relation to comments made at the hearing relating to East of Parsonage Down and excavated material deposition.</p> <p>Chapter 2 Paragraphs 2.4.51 – 2.4.54 of the ES set out the proposals in relation to excavated materials.</p> <p>The moisture content of the tunnel arisings at the time of deposition will be reduced following treatment by sieving, centrifuging and pressing in the Slurry Treatment Plant (STP). If necessary, the chalk may be treated with lime to dry it further and improve its strength with time. When first placed, it will be compacted by light compaction equipment. The material is expected to have a relatively low dry density (~1.45Mg/m<sup>3</sup>) and a moisture content between 25 and 30%. This is to be confirmed by laboratory testing.</p> <p>With regard to the future accessibility of archaeological remains buried beneath areas of fill of less than 2m thickness, it is expected that the material for deposition will still be relatively soft, but will have sufficient strength to be placed and support passage of construction vehicles. While hand digging through the placed material to a depth of 2m may be difficult, the landscape fill will continue to be excavatable by conventional earthmoving equipment, such as a backhoe excavator, e.g. a JCB. The proposed barrier membrane between the existing ground surfaces and fill material will be a permeable Orange Hi-Vis Geotextile to aid visual identification during mechanical removal of deposited material.</p> <p>With regard to groundwater, the contractor will be required to carry out the works in such a way as to avoid adverse impacts on groundwater quality (which includes selecting suitable additives for tunnel spoil processing), and by doing so they would also avoid adverse impacts on buried archaeological remains. Any remains in the topsoil or buried in typically dry conditions would already have been subject to weathering/oxidation since they are in the unsaturated zone, so would not be as sensitive to chemical changes as material in waterlogged ground.</p> <p>As part of the detailed design for the Scheme, a land drainage solution will be developed for the area of tunnel arisings deposition. This will reflect the updated road drainage strategy [REP2-009, section 3.2], which will manage groundwater and have landscaping that would replicate the natural surface flow channels of the valley, conveying surface runoff to culverts beneath the proposed A303 and the B3083 and onwards to the River Till. These measures will be applied in combination with a range of engineering measures which may include surface treatment of the arisings to enhance their permeability if appropriate. The use of a permeable geotextile as a barrier membrane between the existing ground surfaces and fill material will not compromise the proposed drainage solution in this location. It is therefore expected that any impacts on groundwater hydrology and surface water run-off would be adequately mitigated.</p>
	<p><b>DAMS paragraph 3.3.16</b></p> <p><b>The Examining Authority</b> referring to DAMS Para.3.3.16 questioned the techniques that would be used to preserve archaeology at Parsonage Down and the considerations for deposition of materials.</p> <p><b>Chris Moore</b> explained that this area was included in the archaeological evaluation programme, and has been the subject of investigation including geophysical survey, trial trenching and topsoil sieving. Mr Moore explained that whilst there is a good</p>

	<p>understanding of the surface remains that have survived, the field system referred to survives poorly under the surface, and that mitigation in this area will be discussed with HMAG to identify the best means of recording these remains if it is not possible to retain them in situ. This is currently being discussed as part of the development of the DAMS.</p>
	<p><b>DAMS paragraph 3.3.18</b></p> <p><b>The Examining Authority</b> asked for an explanation of the last couple of lines of paragraph 3.3.18 which refer to clay-with-flint lined dissolution pipe formed as a result of periglacial processes.</p> <p><b>Chris Moore</b> explained that these are features within the Chalk that were formed at the end of the last ice age, during the periglacial periods or breaks within glacial periods. Mr Moore explained that the significance of these features is that they can preserve palaeoenvironmental evidence and information about the landscape from the end of the last ice age, moving into the Mesolithic period, during which occupation in landscapes in Britain was just beginning.</p>
	<p><b>DAMS paragraph 3.3.42</b></p> <p><b>The Examining Authority</b> asked for further details regarding the processing of chalk material detailed in paragraph 3.3.42.</p> <p><b>Marie Ayliffe, on behalf of the Applicant</b>, explained that in terms of tunnel arisings the Applicant has considered the possible means of excavation and the worst case scenario for the generation of material that would need treatment. Ms Ayliffe explained that the assessment has looked at generation of chalk-based slurry from the process of tunnelling.</p> <p>Ms Ayliffe explained that traditionally chalk-based slurry would be dealt with by a slurry treatment plant on site. The process involves a system of sieving, and centrifuging to separate and grade out the materials, which means there would be various levels of sieving. Ms Ayliffe noted that the detailed methodology would be dependent on type of tunnelling machine and the contractors' methods for the transportation of material.</p> <p>Ms Ayliffe explained that during the process of tunnelling, bentonite slurry will be used to support the excavation face through a closed face tunnelling machine; this chops up the rock into small pieces which is pumped back suspended in water through a pressured pipework system to the processing area in the compound. The bentonite is then reclaimed and sent back to the tunnel face. The chalk is recovered through centrifuging, sieving (as explained) to reduce the moisture content and then the fine material can be disposed of. Ms Ayliffe confirmed that the pipework would only be required during the tunnel excavation works.</p> <p><b>Post Hearing Note:</b> The Applicant explained at the hearing how the processing of chalk was undertaken using a materials separation system based on sieving, centrifuging and final pressing of the remaining fine material to provide a chalk 'cake'. The Applicant notes that the process relies on a vertical arrangement of the sieves, centrifuges and presses which accounts for the overall height of the plant required in the compound.</p> <p><b>Graham Martin, on behalf of the Applicant</b>, explained that chalk other than that from the tunnel would be excavated and transported by dump trucks and then deposited to form embankments and landscaping.</p> <p>In response to a question from Stonehenge Alliance regarding the presence of archaeological material in the material from the cuttings,</p>

	<p><b>Chris Moore</b> confirmed that excavation of the cuttings would follow the completion of archaeological mitigation works, as provided by the DAMS. Therefore, any material of archaeological interest would have been dealt with satisfactorily as part of the agreed process under the DAMS prior to main works commencing.</p>
	<p><b>DAMS Appendix E</b></p> <p>In response to questions from the <b>Examining Authority</b> and <b>Kate Fielden of Stonehenge Alliance</b> on the treatment of archaeological finds and general management of excavated material, <b>Chris Moore</b> confirmed that:</p> <ol style="list-style-type: none"> <li>i. archaeological material recovered during the archaeological mitigation works (during the preliminary works phase), prior to construction, will be moved from site and taken away for analysis and deposition at Salisbury museum; and</li> <li>ii. for chalk material excavated from the cuttings, the chalk will be used elsewhere on the Scheme, such as embankments.</li> </ol> <p>Mr Moore explained that topsoil and its re-deposition would be managed through the soil management strategy, secured in the Outline Environmental Management Plan (“<b>OEMP</b>”) (MW-GE03) [REP3-006]. Mr Moore confirmed that the soil management strategy would take cognisance of any archaeological considerations, as required by the DAMS. It was noted that the deposition of topsoil would be further discussed as part of the development of the DAMS.</p>
	<p><b>DAMS paragraph 3.3.95</b></p> <p><b>The Examining Authority</b> asked about the approach to archaeological investigation and mitigation east of Amesbury.</p> <p><b>Chris Moore</b> explained that the works in this area involve improvement of an existing track and diversion of an existing byway (AMES1) to provide a new access through Solstice Park to the Allington Track. In terms of archaeological impacts, Mr Moore explained that those works are predicted to be minimal, and therefore the principal work to date includes geophysical survey where the new byway would be constructed, and this found very little. By agreement with the Wiltshire Council County Archaeologist, any archaeology at this location will be dealt with as set out in the DAMS (<b>Site Reference 33 Appendix E of the DAMS [REP2-038]</b>).</p> <p>In terms of the short section of byway AMES1 that crosses a barrow, Mr Moore confirmed that there will be no works there and no effect on the monument.</p>
	<p><b>DAMS paragraph 4.1.16 and 5.1.2</b></p> <p><b>The Examining Authority</b> asked for an explanation of the toolbox talks referred to in paragraph 4.1.16 of the DAMS.</p> <p><b>Chris Moore</b> explained that the purpose of the toolbox talks is to ensure all site staff are aware of heritage constraints in the area and the precautions to take, how features are identified and the appropriate working method to ensure no accidental damage. The talks are given by an appropriate member of the construction team and primarily this would be the archaeological contractor, overseen by the archaeological clerk of works (who is a member of the Highways England team in accordance with paragraph 5.1.12 of the DAMS). Mr Moore also noted that the archaeological clerk of works would also be responsible for delivering some of the toolbox talks.</p>

	<p>In response to a further question from the Examining Authority, Mr Moore confirmed that of the list of roles in paragraph 5.1.12, the archaeological clerk of works would be the only role held by someone from Highways England.</p> <p><b>George Lambrick of Council for British Archaeologists</b> asked if the toolbox talks would cover reporting of finds such as treasures and human remains. Mr Moore explained that this would be part of a wider contractual obligation, outside the scope of toolbox talks. The purpose of the toolbox talks referred to is to explain and implement the requirements of the DAMS.</p>
	<p><b>DAMS paragraph 4.2.6</b></p> <p><b>The Examining Authority</b> requested further details regarding the appearance, location and operation of the tunnel movement monitoring stations.</p> <p><b>Marie Ayliffe on behalf of the Applicant</b> explained that the provision of monitoring is well established over the last decade, and that the monitoring of the ground for excavation movements would help validate the process of tunnelling. Ms Ayliffe explained that monitoring the ground for any movement would be undertaken following establishment of a baseline with a datum point outside the ground movement area. The baseline will show what is going on underground currently and, once established, a series of arrays will be installed along the line of the tunnel, perpendicular to it.</p> <p>Ms Ayliffe explained that the Applicant is currently looking at the detail to establish the best monitoring technology for this location. Ms Ayliffe further explained that this usually involves small surface monitoring points in the ground, and there would be continual monitoring at those points for ground movement.</p> <p><b>Kate Fielden of Stonehenge Alliance</b> asked what would happen if the monitoring indicated that there would be movement.</p> <p><b>Ms Ayliffe</b> confirmed that a detailed assessment of ground movement had been undertaken and the results were set out in Land Instability Risk Assessment Report [APP-278], ES Appendix 10.6. Ms Ayliffe explained that the risk assessment sets out the staged process taken to assessing ground movement. The Applicant has looked at how the ground will move, and has also looked at the features in the landscape, and has then carried out an assessment of the effect of the movement on those assets to determine whether there would be any adverse effects. The assessment has shown that any changes to heritage assets would be negligible. Ms Ayliffe explained that the impact on those assets would be controlled through the tunnel activity itself; for the purposes of monitoring, a series of trigger levels would be established (informed by the assessment as to the maximum amount of settlement that could occur without having an adverse effect on archaeological features), in order to determine when there would be a need for intervention. Ms Ayliffe explained that, if needed, intervention would be done within the tunnel alignment and would involve ground stabilisation within the tunnel (for example, grouting in the ground ahead of the tunnel boring machine).</p> <p><b>Reuben Taylor QC</b> confirmed that the OEMP contains a requirement for a ground movement monitoring strategy at MW-CH8.</p>
	<p><b>DAMS paragraph 4.2.17</b></p> <p><b>The Examining Authority</b> asked for an explanation of the two different types of haul roads.</p>



	<p><b>Graham Martin, on behalf of the Applicant</b>, explained that the line of the all-weather haul roads is shown in Figure 2.7 of the Environmental Statement [APP-061]. Mr Martin explained that the all-weather haul roads would be used in areas where access will be needed to the site and in order to cross the River Till prior to the construction of the viaduct. Other types of haul roads would be contained within the footprint of the scheme and would be used for general purposes within the site, such as building the embankment; this would involve driving over material already laid to avoid driving up the side of the embankment. The all-weather haul roads would be able to be used during wet weather, when chalk is not suitable for driving over; for this reason the all-weather haul roads would be used for deliveries into the site.</p> <p>Mr Martin confirmed that no haul roads are proposed within the WHS, other than those within the footprint of the permanent works.</p> <p><b>George Lambrick of Council for British Archaeologists</b> queried the impact on archaeology from movement and deposition of subsoil.</p> <p><b>Reuben Taylor QC</b> referred to paragraph 4.2.15 of the DAMS, which requires that in accordance with item MW-CH5 of the OEMP, the main works 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), and how the measures would be reversed following the end of construction (i.e. removal of compounds). Mr Taylor QC also referred to paragraph 4.2.24 of the DAMS which sets out a similar requirement with respect to temporary haul roads. Mr Taylor QC confirmed that this would a matter to be confirmed by the contractor, via the DAMS process.</p> <p>In response to a submission from <b>Andrew Rhind Tutt</b>, Mr Taylor QC explained that the OEMP contained detailed provisions in relation to hours of construction (see for example PW-G4, NW-G12).</p>
	<p><b>DAMS paragraph 4.2.31</b></p> <p><b>The Examining Authority</b> asked about the progress of the archaeological investigation and monitoring to be undertaken during 2019 to inform understanding of the piling strategy.</p> <p><b>Chris Moore</b> confirmed that the geotechnical investigations would be commenced in 2019. Mr Moore confirmed that preliminary works to gain access from landowners by agreement had commenced on 6 June 2019 (the day of the issue specific hearing), and works would be phased during 2019 and 2020.</p>
	<p><b>DAMS paragraph 5.1.14</b></p> <p>In response to a comment from <b>Nick Snashall from the National Trust</b>, that the DAMS did not include a mechanism for feedback from HMAG to the archaeological clerk of works, <b>Reuben Taylor QC</b> confirmed that the Applicant would discuss the inclusion of such a mechanism with HMAG as part of ongoing discussions on the DAMS.</p>
	<p><b>DAMS paragraph 5.1.17</b></p> <p>In response to a request that further detail be provided in relation to the process for dealing with unexpected finds and who has the ultimate responsibility for decision, <b>Reuben Taylor QC</b> confirmed this would be discussed with HMAG as part of the ongoing</p>

	development of the DAMS.
	<p><b>DAMS Appendices</b></p> <p><b>Melanie Pomeroy-Kellinger of Wiltshire Council</b> noted that the Council's deadline 2 response on the DAMS had asked for clarity in terms of the sign off procedures in the appendices, and the statutory and advisory roles of the different organisations. <b>Reuben Taylor QC</b> confirmed this would be discussed with HMAG as part of the ongoing development of the DAMS.</p> <p><b>Helen Woodhouse of Historic England</b> confirmed that both the DAMS and OEMP are evolving documents, and that the process of sign off and responsibilities is under discussion.</p> <p><b>The Examining Authority</b> referred to the flowcharts in Appendix A (in particular the reporting lines at Appendix A3 onwards) and asked that further clarity or detail be provided on various aspects in terms of where agreement is required, what happens if there is disagreement, how consultation operates.</p> <p>Mr Taylor QC confirmed that these points would be considered by the Applicant.</p> <p><b>George Lambrick of the Council for British Archaeologists</b> made submissions in relation to the application of the DAMS requirements in relation to archaeological mitigation and the British Standards in relation to soil handling, and queried how any conflict would be dealt with.</p> <p>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.</p> <p><b>Post hearing note:</b> 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"</p>
<b>8 BLICK MEAD</b>	
<b>Agenda Item</b>	<b>Highways England response</b>
	<p><b>Chris Moore, on behalf of Highways England</b> (the Applicant) explained in response to concerns raised by the Blick Mead Team and the Council of British Archaeologists that the EIA and HIA had assessed Blick Mead as of national importance, equivalent to it being a designated heritage asset and a scheduled monument, but did not afford it OUV status since it is not of the periods for which the WHS is inscribed .</p>



<p><b><i>i. The adequacy of baseline information for ground water levels and surface water levels.</i></b></p>	<p><b>Helen Woodhouse of Historic England</b> stated that Appendix 3 to their Preserving Archaeological Remains guidance on Water Environment Assessment Techniques provides a guide to the quality of the data in order to inform a tiered approach to assessment. Ms Woodhouse highlighted that the Guidance is not prescriptive about specific periods of time that are required but takes iterative process on basis of data that is collected at one tier to inform decisions on if works should be conducted on a further tier. She gave the example of a tier 2 assessment, where page 17, section 2.3 of the guidance states that the assessment can be undertaken after a month or two over summer, when a system can be under critical water stress, through to a year or more to gain a complete picture of a seasonal cycle. Summarising, Ms Woodhouse confirmed that the quality of data was the important point, rather than the time period.</p> <p><b>Dr Jane Sladen for the Applicant</b> stated that the Applicant had looked at a longer period than twelve months discussed by interested parties to include the peaks of floods in 2014 and droughts in 1976.</p> <p>Dr Sladen advised that the approach taken at Blick Mead was to follow a tiered assessment, which is the approach recognised by Historic England. She stated that this approach relies on conceptualising what happens on the Blick Mead site based on all the regional and local information. Dr Sladen outlined observations undertaken, including from Amesbury Abbey. Dr Sladen advised that the tiered assessment carried out is included in and supports the findings of the Environmental Statement.</p> <p>Dr Sladen advised that monitoring boreholes were installed in the Blick Mead area to monitor water levels in the area. She advised that these have now been monitored through the low levels of the autumn to the high levels seen this spring. Dr Sladen explained that the monitoring results confirm the conclusions of the Environmental Statement, that the groundwater system for Blick Mead is fed by the regional chalk aquifer, which also supplies the local public water supply and farmers supplies.</p> <p>In response to an Examining Authority query, Dr Sladen advised that 12 months is a general time frame for baseline data as it includes data from a full hydrological cycle, with the highs and lows one would expect in a year. Although the Blick Mead monitoring period has been less than 12 months it has collected data from the highs and lows of one hydrological year. She confirmed that the Applicant had also used historical monitoring data from the wider catchment which capture drought and flood extremes, so was better than just using 12 months. Dr Sladen added that the monitoring at Blick Mead is just for that area, and for elsewhere data was used from elsewhere. As there are no significant effects predicted at Blick Mead, Dr Sladen stated that there is no requirement to monitor there. Nevertheless the Applicant is monitoring on the request of Historic England and the Heritage Monitoring and Advisory Group.</p> <p>Dr Sladen added that the ongoing groundwater recording and monitoring at Blick Mead [AS-015] results had been provided to the Examination. She confirmed that these are consistent with the findings of the Tiered Assessment presented in Annex 3 of Appendix 11.4 - Groundwater Risk Assessment [APP-282] and the Environmental Statement.</p> <p>A low water level and high-water level period have already been recorded (autumn 2018 and spring 2019) at Blick Mead [AS-022] and these span the extremes of a typical twelve-month period.</p>
<p><b><i>Dewatering effects</i></b></p>	<p>In response to questions raised regarding the use of dewatering during the construction of the tunnel and the request for further detailed modelling data at Blick Mead <b>Mr Taylor QC</b> noted that the Environmental Statement assumes the use of a closed face tunnel boring machine, which removes the need for any significant dewatering associated with the tunnelling. With regard to dewatering more generally Mr Taylor QC noted that the OEMP MW-88 commits the main contractor to adopting construction techniques that minimise as</p>

	<p>far as reasonably practicable the need for and extent of dewatering and groundwater abstraction. He added that in any event the abstraction consenting regime that exists generally would have to be followed.</p> <p>Mr Taylor QC confirmed that the evidence demonstrates that the scheme will have no material impacts upon the hydrology of Blick Mead, whether the water supply comes from chalk aquifer or perched groundwater (the latter of which the Applicant does not accept is the case). Mr Taylor advised that the construction of the tunnel is unlikely to have a significant effect on the hydrology of Blick Mead. He advised that given that is the position, any requests for further information need to demonstrate why this is required.</p> <p>Mr Taylor QC confirmed in response to an Examining Authority question that dewatering has not been ruled out for the project as a whole, because in order to launch the tunnel boring machine there may need to be an element of dewatering at the western approach at the point of entry of the tunnel boring machine into the ground. However, Mr Taylor QC stated that at the present time there is not an identified need to dewater at the eastern end where the tunnel boring machine turns around. He added that if there was a need for it then consents would be needed, and therefore the situation would be controlled. In relation to the tunnel boring machine, Mr Taylor QC referred to paragraphs 2.4.32 and 33 of the Environmental Statement Chapter 2 – The Proposed Scheme [APP-040] and advised that a closed faced tunnel boring machine has been assumed in the assessment. Mr Taylor QC agreed that this point would be addressed again at ISH4.</p> <p><b><u>Post Hearing Note</u></b></p> <p>In respect of the potential for a requirement for dewatering during construction based on the current design and construction methods, no abstraction of groundwater is anticipated. It is possible that temporary and localised groundwater control could be required for the construction of the tunnel portal slab to launch the tunnel boring machine and for some cross passages for mechanical and electrical services at Stonehenge Bottom. Further information can be found in the Applicant's responses to the Examining Authority's first written questions [REP2-031], references Fg.1.11 and Fg.1.41.</p> <p>The Applicant has committed, through the Outline Environmental Management Plan (OEMP) [APP-187], reference MW-WAT8, to adopt construction techniques which minimise, so far as reasonably practicable, the need for an extent of dewatering and groundwater abstraction. Compliance with the OEMP is secured by requirement 4 of the draft DCO.</p> <p>The Statement of Common Ground between the Applicant and the Environment Agency [REP2-012], confirms under matters agreed paragraph 3.19:</p> <p>"The assessment of risk and identification of any required mitigation measures will be achieved though the OEMP (MW-WAT8) and whichever regulatory regime is ultimately agreed, i.e. either the Environment Agency's permitting regime or protective provisions within the DCO, if it is confirmed that dewatering will be required."</p>
<p><b><i>ii. The effects of variations in ground and surface water on the archaeology both historically and in the</i></b></p>	<p><b>Victoria Hutton and Dr Bradley on behalf of Blick Mead Team and the Council for British Archaeology</b> raised concerns about changes in the water levels leading to drying out of the Blick Mead area and affecting the preservation of organic matter and the need for monitoring to establish the source of the water periodically wetting the archaeological remains.</p>

<p><i>future.</i></p>	<p><b>Dr Sladen</b> presented an extract from Appendix B of the Blick Mead groundwater monitoring Technical Note [AS-015] which showed information on the natural fluctuation of water at Blick Mead since August 2018. She supplemented this information with three photographs that were taken at Blick Mead (contained in Appendix C), one each from November 2018, March 2019 and 21 May 2019, which also show the varying conditions over the same timeline, with standing water in March 2019 but none in May 2019. Dr Sladen advised that the borehole information forming the basis for Appendix B was supplemented by long term observations of the water levels elsewhere in the catchment. She commented that the variations at Blick Mead were relatively small and typical of alluvial aquifers. Dr Sladen confirmed that the effects predicted in the Environmental Statement do not extend to Blick Mead.</p> <p><b><u>Post Hearing Note</u></b></p> <p>The Scheme's potential impacts on groundwater levels and flows (including consideration of surface rainwater run-off to outfalls in the area of Blick Mead) have been assessed and the assessment shows there would not be any adverse effect on spring flows and the overall water regime at Blick Mead. Further information can be found in ES Appendix 6.8, Table 1.2 [APP-217], and ES Appendix 11.4, Annex 3, Blick Mead Tiered Assessment [APP-282]. The Tier 2 assessment concluded that:</p> <ol style="list-style-type: none"> <li>1. The groundwater level in the underlying aquifer is such that there will normally be upward pressure from the Chalk aquifer that assists in maintaining the wet conditions in the Mesolithic deposits.</li> <li>2. No changes in chalk groundwater levels are predicted at Blick Mead. However if there were temporary or permanent lowering of groundwater levels in the Chalk and sands and gravels aquifer by a few centimetres is unlikely to result in a significant impact with respect to the Mesolithic deposits of interest. This is because groundwater levels in the alluvial deposits are also influenced by road drainage (which is not predicted to change), river levels in the River Avon, and local recharge to the alluvium itself, which are not affected by the scheme. Such a magnitude of change is within the natural variation of groundwater and river levels.</li> </ol> <p>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 [AS-022]. The conceptual model of the hydrogeology at Blick Mead is described in the Tiered Assessment (ES Chapter 11, Appendix 4, Annex 3 Blick Mead Tiered Assessment [APP-282].) Paragraph 2.6.1 states that the Mesolithic deposits of archaeological interest are located at the base of the lower permeability superficial deposits (between 67 and 68m aOD), and immediately above the Chalk and sands and gravels aquifer. The groundwater level in the underlying aquifer is such that there will normally be upward pressure that assists in maintaining the wet conditions in the Mesolithic deposits. 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. Excavations at Blick Mead take place in the autumn months when groundwater levels are at their lowest and the excavations can be completed in partially dry conditions.</p> <p>Following comments from the Environment Agency, <b>Mr Taylor QC</b> noted that their written response at Deadline 2 [REP2-094] paragraph 1.3.1, notes that reports in Appendix 11 and supplementary work in reports since the DCO application was made provide</p>
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	<p>confidence that the Scheme is unlikely to have significant impact on groundwater levels and flows, including base flows to Rivers Avon and Till.</p> <p>Regarding the possibility of a perched water table, Mr Taylor QC confirmed that no evidence of this had been raised previously.</p> <p><b>Ben Hayball of the Environment Agency</b> stated that this issue had arisen as the heads recorded in the shallower deposits are higher than the heads in the chalk, suggesting two different water bodies.</p> <p><b>Dr Sladen</b> responded to confirm that no significant effects were predicted at this location. She stated that it is clear – as set out in the ES - that the chalk aquifer underlies the site, is a principal aquifer with major flows and that the effects of the scheme on that aquifer will not be significant.</p> <p>Even if the site were fed by another system such as shallow perched groundwater, she advised, there would be no change in that assessment because the scheme has the potential to affect chalk groundwater levels, and an additional source of water to Blick Mead would be independent of the scheme, therefore reducing the importance of Chalk groundwater inflows. However Dr Sladen advised that no evidence of perched water had been found in borehole information from boreholes drilled at various depths, appropriate for assessing this point. Dr Sladen noted that perched water is not mentioned in any of the reports and in every case the reports conclude that there is a single water table, and only fed by aquifer from chalk beneath.</p> <p>Mr Hayball confirmed however that even if water was coming from a perched water table above the site , it is clear that it would not be affected by the scheme. Equally if the water was coming from the aquifer below the site there was no evidence to suggest that the presence of the tunnel would result in any effect on the Blick Mead site.</p>
<p><b>iii. The adequacy of the Tiered Assessment</b></p>	<p>In response to comments from interested parties regarding for the need for a higher tier 4 assessment at Blick Mead <b>Dr Sladen</b> noted that the Applicant referred to the tiered assessment as 2/3, as it is borderline between the two. She advised that the tiered assessment process starts with a generalised concept of what is going on, and this is refined with any data. If there are no impacts, Dr Sladen stated, then it is not necessary to go into higher tiers. She confirmed that the stage used in the tiered assessment is perfectly adequate for the situation at Blick Mead as no significant effects are assessed.</p> <p><b><u>Post Hearing Note</u></b></p> <p>The Applicant can clarify that the different tiers of assessment are:</p> <ul style="list-style-type: none"> <li>· Tier 1: Desk study and site walkover to derive ‘first conceptual model’.</li> <li>· Tier 2: Basic qualitative assessment of water balance to identify groundwater levels, flow directions and identify key potential influences on the groundwater system.</li> <li>· Tier 3: Conceptual model testing using site-specific measurements, simple analytic equations and long-term average water balances, to arrive at a ‘better conceptual model’.</li> </ul>

· Tier 4: Development of a numerical groundwater model, calibrated and validated against monitoring data from the site and surrounding area. The model is then tested using detailed data, such as time variant levels, and more sophisticated analytical tools.

Tier 2 and Tier 3 assessments can be performed on the same amount of data, although there is a more detailed assessment of the data in Tier 3. The investigation should continue through the tiers until the reliability of the conceptual model has reached an acceptable level. A Tier 4 assessment may be required where mitigation is considered necessary to facilitate long-term preservation. Conversely, in some cases just Tier 1 may be sufficient.

Whilst suggestions were made from **Ms Hutton, Dr Bradley, Professor Jacques** and **Barry Garwood** that a more detailed assessment was required at Blick Mead due to its significance, **Dr Sladen** confirmed that the tiered assessment process is not linked to significance of the archaeological site but to the reliability of the conceptual model. Historic England agreed with this, as did the Environment Agency. She advised that the recent monitoring data shows high and low water level from Autumn 2018 to Spring 2019 which closely matches the predictions of the conceptual model. She stated that the Applicant has followed the required guidance from Historic England in the production of this assessment, Historic England further confirmed this at the hearing, noting also that the assessment conducted was adequate.

Reference to the site of Star Carr was raised by Mr Lambrick and Dr Bradley. Dr Sladen confirmed that because Star Carr had a perched water table it was hydrologically not similar to Blick Mead. Further, Dr Sladen stated that at Star Carr agricultural drainage and shallow drains affected the water table where the archaeological deposits were located, hence groundwater was removed from the aquifer in which the archaeological deposits were located, and this is totally different to this Scheme. Dr Bradley agreed with this.

**Mr Taylor QC** confirmed that the assessment had been undertaken carefully and fully. The assessment confirmed that no element of the scheme is likely to have a material effect upon the hydrology of Blick Mead and no mitigation would be required to preserve the significance of Blick Mead.

Professor Jacques queried the use of a large scale Chalk groundwater model for the assessment of Blick Mead. Groundwater levels within the Mesolithic deposits are supported by inflows from the Chalk aquifer. The Chalk aquifer is of regional extent, groundwater flow into the Stonehenge and Blick Mead areas comes from areas to the north, which interact with the Avon catchment to the east and Till and Wylde catchments to the west. Groundwater in the Stonehenge area flows south easterly and discharges to the River Avon south of the Scheme and south westerly toward the rivers Till and Wylde. River Wylde flows are influenced by its subcatchments such as the Chitterne Brook. Therefore a multi-catchment model is required to simulate the processes that lead to groundwater flow through the Scheme area.

**Mr Hayball** stated the model was a good representation of the Chalk aquifer and shows no change in groundwater levels in the Blick Mead area. Ms Woodhouse confirmed that Historic England were satisfied with the Tiered assessment on the basis of the conceptual model and that the Environment Agency were satisfied with the modelling approach.

**The Examining Authority** noted concerns that drainage from the road would lead to hydrology running into the Blick Mead site.

**Dr Sladen** responded that the Applicant's drainage team have ensured that the drainage system as it passes by Blick Mead is the same as the existing road but with the insertion of pollution entrapment, and therefore that the quality of any drainage at the point of

	<p>discharge to the environment is improved. She confirmed that what would be flowing onto the Blick Mead site would not be changed, although this would be best covered as part of the drainage discussion at ISH4. Mr Taylor QC added that the Environmental Statement Chapter 2 – The Proposed Scheme [APP-040] paragraphs 2.3.46 to 2.4.47 contained an explanation of the drainage proposals to the east of the tunnel, which include an infiltration crate system, settlement ponds and attenuation for betterment of discharge rates. Mr Taylor QC explained that the simple position is that it has been appraised and appraised very carefully, and no impacts have been identified.</p>
<p><b><i>iv. The necessity for ongoing monitoring during the construction and the operational phases and how that would be secured in the DCO</i></b></p>	<p>In response to assertions from Ms Hutton regarding issues with the installation of monitoring equipment in 2018, <b>Dr Sladen</b> noted that the Applicant did request permission from David Jaques, and the landowner David Cornelius Read, and offered the opportunity to give consent and provided information as to when agents would be on site. Whilst on site, Dr Sladen confirmed that borehole installation was attended by an archaeologist who checked the arisings. Dr Sladen advised that following checking, the arisings were either disposed off site in compliance with waste regulations or returned to the borehole. Dr Sladen confirmed that the Applicant's borehole strategy was in line with good practice and questioned why there was a larger pit next to borehole 9, which is exposing the aquifer to oxygen.</p> <p>In response to a question from the <b>Examining Authority</b> on whether specific monitoring at Blick Mead was required <b>Dr Sladen</b> explained that it was not. Since the Tiered assessment shows no likely impact upon the groundwater at Blick Mead, monitoring is not required.</p> <p>Dr Sladen stated that this does not mean, however, that the site will not be monitored more generally and more widely. She confirmed that there is scope for monitoring at Bick Mead to be included in a number of elements in the OEMP. Dr Sladen noted that there is a commitment to produce a groundwater management plan in MW - WAT10, and also reference to that in MW-G7 and also to monitoring of water resources at MW 15. There is scope for it to be addressed but she stated that there was no necessity for it given the conclusions of the impact assessment.</p> <p><b><u>Post Hearing Note</u></b></p> <p>There is a requirement in the Outline Environmental Management Plan (OEMP) [APP-187] (a revised version of which is submitted at Deadline 3) (MW-WAT10) for monitoring as follows:</p> <p>The main works contractor shall develop a Scheme-wide Groundwater Management Plan, outlining how groundwater resources are to be protected in a consistent and integrated manner. The Plan shall be prepared in consultation with the Environment Agency and address:</p> <ol style="list-style-type: none"> <li>a) Potential effects on groundwater (resources and quality) that fall outside other regulations such as the Environmental Permitting Regulations.</li> <li>b) An update to the Groundwater Risk Assessment for the final design and construction plan.</li> <li>c) The groundwater level and water quality monitoring and reporting programme.</li> </ol>

d) Development of baseline groundwater conditions and derivation of trigger levels and action levels/Mitigation/action plans for exceedances and accidents/incidents.

The plan will be prepared in consultation with the Environment Agency. The EA is the relevant authority for water resources.

Implementation of the OEMP is secured by requirement 4, schedule 2 of the draft DCO.

In response for further requests to consider specific monitoring at Blick Mead on a precautionary basis **Dr Sladen** confirmed that this approach could only be justified with reference to the risk of potential impacts. She explained that the model and tiered assessment has looked at impacts at wide extremes, the greatest droughts, the greatest floods and the impact assessment the tiered approach produced on that basis still doesn't identify a material impact on Blick Mead and given the scale of seasonal fluctuations detailed in AS-015, even on a precautionary basis monitoring is not justified.

Dr Sladen further clarified that the monitoring at Blick Mead referred to in Environmental Statement Chapter 11 [APP-049] paragraph 11.3.14 is and detailed in Appendix 11.4 [APP-282] is monitoring that is going on now and not a commitment to future monitoring.



## Appendix A: Applicant's response to points raised in relation to interpretation of the World Heritage Convention and the Tasmanian Dam Case

### Commonwealth of Australia v Tasmania [1983] 158 CLR1 ("the Tasmanian Dam Case")

In the *Commonwealth of Australia v Tasmania* [1983] 158 CLR1 ("the Tasmanian Dam Case") the High Court of Australia was required to consider (amongst other points) whether it was lawful pursuant to Australia's Constitution for the Commonwealth Government to have enacted measures which had the effect of prohibiting the further construction of a dam (thus overruling the laws of the state of Tasmania). This required a consideration of whether the World Heritage Convention imposed legal obligations on Australia, therefore justifying it in enacting laws implementing the convention under a certain head of power of the Constitution.

Ms Hutton referred to paragraph 41 of Brennan J's judgement and cited it as authority that there was no discretion with respect to the implementation of Article 4 of the World Heritage Convention. This position is, however, more nuanced than that, and what the case law establishes is that whilst there is a legal obligation imposed by the World Heritage Convention, it is not an absolute one. There is a discretion as to the manner of the performance of that obligation provided that, according to the terms of the Vienna Convention Article 31 it is interpreted in good faith.

It can be seen from extracts of key passages of the judgements in the Tasmanian Dam Case that the use of the language of obligation – in particular in the paragraph selected by Ms Hutton - stemmed from the central point at issue in the case: whether the Convention imposed obligations on Australia. It is clear from a wider reading of the judgements and subsequent case law that the members of the High Court consistently accepted that there was a discretion in the manner of performance of the obligation, allowing for the balance provided for in the UK's national policy statements, NPPF, Planning Act 2008 provision, and established approach to assessment of impacts on heritage generally and the balancing of factors in decision making. Key extracts from the Tasmanian Dam Case judgements and subsequent case law are set out below, followed by the conclusions that can be drawn from them.

### Key Extracts

It is instructive to consider paragraph 41 of Brennan J's decision in full:

*"41. The obligation under Art. 4 of the Convention leaves no discretion in a party as to whether it will abstain from taking steps in discharge of the "duty" referred to in that Article. Each party is bound to "do all it can . . . to the utmost of its own resources" and the question whether it is unable to take a particular step within the limits of its resources is a justiciable question. No doubt the allocation of resources is a matter for each party to decide and the allocation of resources for the discharge of the obligation may thus be said to be discretionary, but the discretion is not at large. It must be exercised "in good faith", as Art.26 of the Vienna Convention requires. If a party sought exemption from the obligation on the ground that it had allocated its available resources to other purposes, the question whether it had done so in good faith would be justiciable. An analogy in the law of contract can be found in Meehan v. Jones [1982] HCA 52; (1982), 56 A.L.J.R. 813 where it was held that a contract did not fail for uncertainty when a "subject to satisfactory finance" clause was construed as requiring the purchaser to act honestly and reasonably. Mason J. said, at p. 820:*

*"There is in this formulation no element of uncertainty - the courts are quite capable of deciding whether the purchaser is acting honestly and reasonably. The*



*limitation that the purchaser must act honestly, or honestly and reasonably, takes the case out of the principle . . .", that is, out of the principle stated by Kitto J. in Placer Development Ltd."*

Paragraph 41 also needs to read in the context of the paragraphs of Brennan J's judgement leading up to it. In his consideration of the obligations under the World Heritage Convention, Brennan J said in paragraphs 37 and 39 of his judgement:

*"37. The language of these Articles [Articles 4 and 5] is non-specific; the Convention does not spell out either the specific steps to be taken for the protection, conservation and presentation of the cultural and natural heritage situated on a State Party's territory nor the measure of the resources which are to be committed by the State Party to that end. The variety of properties that are part of the cultural and natural heritage, the economic differences among States Parties and the varying demands upon their respective resources no doubt made it impossible to secure common specific commitments from all States Parties. ..."*

...

*39. ... There is a clear obligation upon Australia to act under Arts. 4 and 5, though the extent of that obligation may be affected by decisions taken by Australia in good faith."*

There is, nor can there be, any suggestion that in respectively settling or approving the parameters of the Scheme, Highways England or the Secretary of State would be interpreting the Convention in anything other than good faith.

The decision of Mason J draws out the distinction "*between a discretion as to the manner of performance and a discretion as to performance or non-performance*"<sup>1</sup>, that is, whilst there is "*no discretion in a party as to whether it will abstain from taking steps in discharge of the "duty" referred to in [Article 4]*"<sup>2</sup>, there is discretion as to what those steps shall be.

*"31. Article 5 then goes further. What it does is to impose obligations on each State with the object set out in the opening words of the article "to ensure that effective and active measures are taken for the protection, conservation" etc. of the heritage in the discharge of the responsibility acknowledged by Art. 4. Article 5 cannot be read as a mere statement of intention. It is expressed in the form of a command requiring each party to endeavour to bring about the matters dealt with in the lettered paragraphs. Indeed, there would be little point in adding the qualifications "in so far as possible" and "as appropriate for each country" unless the article imposed an obligation. The first qualification means "in so far as is practicable" and the second takes account of the difference in legal systems. Neither of these qualifications nor the existence of an element of discretion and value judgment in par. (d) is inconsistent with the existence of an obligation. There is a distinction between a discretion as to the manner of performance and a discretion as to performance or non-performance. The latter, but not the former, is inconsistent with a binding obligation to perform (see Thorby v. Goldberg [1964] HCA 41; (1964), 112 C.L.R. 597, at pp. 604-605, 613, 614- 615). And it*

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<sup>1</sup> Mason J paragraph 31

<sup>2</sup> Brennan J paragraph 41

*is only natural that in framing a command to States to take measures of the kind described in par. (d) in relation to their heritage the command will be expressed in terms of endeavour, subject to the qualifications mentioned.”*

Deane J’s decision also acknowledges the lack of precision in the obligations in the World Heritage Convention in paragraphs 23 and 24.

The decision of Murphy J similarly considered the imprecise nature of the obligations in paragraph 62.

The Tasmanian Dam Case’s recognition of the non-absolute nature of the obligations under the World Heritage Convention was followed in subsequent case law.

*Australian Conservation Foundation Incorporated v Minister for the Environment* [2016] FCA 1042 (“**ACF Case**”) is a decision of the Federal Court of Australia, following the Tasmanian Dam Case. This case involved an unsuccessful claim by ACF to judicially review the decision of the Minister for the Environment to approve a coal mine, on the basis that particular requirements of Commonwealth environmental protection legislation had not been complied with. At the heart of the ACF’s case was a concern regarding likely impacts on the Great Barrier Reef. The Minister was under an obligation to not act inconsistently with Australia’s obligations under the World Heritage Convention, and so this case required a determination of what was envisaged by those obligations.

The decision of Griffiths J in this case referred to the Tasmanian Dam Case as follows:

*“188 While it may be accepted (consistently with the Tasmanian Dam case) that the WHC imposes obligations on Australia, I consider that the ACF has overstated the nature of those obligations. Articles 4 and 5 of the WHC are set out in [37] above. The obligation of the Minister (s 137 under the EPBC Act) to act not inconsistently with the WHC is set out in [36] above.*

...

*190 As the ACF pointed out, various Articles of the WHC were the subject of comment by various members of the High Court in the Tasmanian Dam case, including Arts 4 and 5 specifically. Several members of the Court commented on the non-absolute nature of the obligations imposed upon State Parties by those provisions. For example, Gibbs CJ commented at 91 that Arts 4 and 5 left to a State Party itself the questions as to what a State Party can do, how far its resources extend, what is possible and what is appropriate in implementing the provisions. His Honour concluded at 92 that, although WHC imposed certain obligations on State Parties, Arts 4 and 5 did not impose on any State Party an obligation to take any specific action and it was left to each State Party to determine the extent of the obligations and the mode of their performance.”*

Griffiths J also quoted from the judgements of Brennan J and Deane J in the Tasmanian Dam Case at paragraphs 192, 193 and 194 of his judgement. Griffiths J referred further to the commentary in the High Court’s judgement:

*“195 At 310 of the Tasmanian Dam case Dawson J described the WHC as recognising that “...there can be no absolute imperatives and that difficult decisions must be made which involve the compromise of environmental, social and economic values”. He added that these “decisions are left to the individual Parties to the Convention with the exhortation that they should endeavour, in so far as possible, and as appropriate for each country, to identify and conserve their heritage”.”*

In his consideration of the ACF’s submissions and interpretation of the World Heritage Convention, Griffiths J found:

*“197. The ACF’s claim that the Minister breached s 137(1) of the EPBC Act turned on the asserted inconsistency between the Minister approving Adani’s project and the obligations imposed upon Australia by Art 4 of the WHC. In substance, the ACF invited the Court to adopt a literal construction of the obligations set out in that provision. For the following reasons that invitation should not be accepted.*

*198 The general rule of treaty interpretation is set out in Art 31 of the Vienna Convention on the Law of Treaties 1969. That requires a treaty to be interpreted in good faith and in accordance with the ordinary meaning of the words of the treaty in their context and in the light of the treaty’s object and purpose. It is appropriate to have regard for the whole of the relevant text of a treaty in construing a particular provision, which is simply an aspect of construing a provision in its context.*

*199 Adopting that approach, in construing Art 4 it is relevant to have regard to Art 5. The chapeau to Art 5 makes plain that the obligations of a State Party to take appropriate measures to protect its cultural and natural heritage is qualified by the following words: “... each State Party to this Convention **shall endeavour, in so far as possible, and as appropriate for each country...**” to do the matters specified. The non-absolute nature of the obligation is reinforced by the terms of Art 5(d) which refer to each State Party taking “appropriate” measures necessary for the protection of their natural heritage. I accept the Minister’s submission that, properly construed, Arts 4 and 5 give considerable latitude to State Parties as to the precise actions they may take to implement their “obligations” under the relevant provisions of WHC.*

*200 I also accept the Minister’s submission concerning the proper construction of these provisions, which was in the following terms:*

*Unlike the applicant’s apparently literal interpretation of Article 4, this interpretation allows Articles 4 and 5 to operate harmoniously. It means that State Parties have a duty not to act in a manner manifestly contrary to the Convention but they must endeavour, in so far as possible, and as appropriate, to take particular kinds of measures in relation to natural heritage located in their territory so as to advance that duty. The preamble and operative provisions of the Convention, including in particular Articles 5 and 6 show that State Parties did not envisage absolute protection, but rather a level of protection that took account of economic, scientific and technical limitations, and the integration of heritage protection into broader economic and social decision making.”*

#### Conclusions based on the case law

Key principles based on the above Australian case law are as follows:

1. The World Heritage Convention imposes real legal obligations on State Parties. Whilst there is no discretion as to whether a State Party will abstain from taking any steps in discharge of the "duty" referred to in Article 4 of the Convention, there is discretion as to the manner in which the duty is performed, for example, it is for each State Party to decide the allocation of its resources. This is consistent with the imprecise nature of the obligations.
2. Despite the wording of Article 4 of the World Heritage Convention, requiring that each State Party does "*all it can*" to protect and conserve cultural heritage "*to the utmost of its own resources*", the Convention has to be read as a whole. Article 4 therefore has to be read subject to the wording of Article 5.
3. Article 5 sets out the specific steps a State Party can take in order to comply with the World Heritage Convention. It introduces those steps by stating that "each State Party to this Convention shall endeavour, so far as possible, and as appropriate for each country ..." to carry them out.

4. Under the World Heritage Convention, then, State Parties do not envisage absolute protection, but a level of protection of WHSs taking account of economic, scientific and technical limitations, and the integration of heritage protection into broader economic and social decision making.
5. Article 5 establishes that how the World Heritage Convention is implemented in practice is up to each State Party. The World Heritage Convention does not impose any specific action or binding commitment on a State Party. It is left to the State Party to determine the extent of the obligations and the mode of their performance. There is discretion as to what steps the State Party takes and "considerable latitude" as to their precise actions.
6. The World Heritage Convention is to be interpreted in good faith and in accordance with the ordinary meaning of the words of the Convention in their context and in the light of the Convention's object and purpose.

The Applicant's position therefore remains as set out in the Case for the Scheme and NPS Accordance [APP-294] and in response to written question G.1.1 [REP2-021]. The UK has taken the steps required by Articles 4 and 5 by putting in place the UK legal and policy framework in connection with the assessment and consideration of harm to heritage assets – namely, the UK's national policy statements, NPPF, Planning Act 2008 provision, and established approach to assessment of impacts on heritage generally and the balancing of factors in decision making. The protection and conservation of world heritage sites is integrated into the comprehensive planning programme in the UK for nationally significant infrastructure projects (as required by Article 5(a)), and the appropriate measures taken by the UK in legislation and policy surrounding planning decisions including the NPSNN for the protection, conservation, presentation and rehabilitation of world heritage sites (required by Article 5(d)) place great weight on their harm. It follows that the application of the planning balance envisaged in the NPSNN by the Secretary of State, would be in accordance with Articles 4 and 5.

The NPSNN allows for a balancing of harm to heritage assets, and this is not inconsistent with the terms of the World Heritage Convention, which do not, giving Articles 4 and 5 their ordinary meaning, impose an obligation to avoid all harm to WHSs.

As recorded in the written summary of oral submissions made at the hearing, the corollary of Ms Hutton's submissions that the NPSNN does not implement the World Heritage Convention nor reflect the protection given to World Heritage Sites, is that the NPSNN has been adopted unlawfully, as the policy would be inconsistent with the UK's international obligations. There is no suggestion that the approach to WHSs in the NPSNN is unlawful. The same argument applies with respect to the NPPF, given the similar approach it takes to protection of heritage assets and the balancing of harm. This position would presumably result in the UK failing to have implemented its obligations under the World Heritage Convention, although Ms Hutton has not made that submission.

## Appendix B: Applicant's response to submissions in relation to paragraph 5.139 of the National Policy Statement National Networks (NPSNN)

Paragraph 5.139 of the NPSNN provides:

*"A documentary record of our past is not as valuable as retaining the heritage asset and therefore the ability to record evidence of the asset should not be a factor in deciding whether consent should be given."*

The 2017 decision in *The Queen on the application of John Charles Hayes MBE v City of York Council v English Heritage Trust Limited* [2017] EWHC 1374 (Admin) ("**Hayes v York CC**") is instructive in terms of the interpretation of this paragraph. The decision in Hayes v York CC considered the meaning and effect of paragraph 141 of the National Planning Policy Framework ("**NPPF**") (now paragraph 199 in the 2018 version of the NPPF). Paragraph 141 provides (emphasis added):

*"Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted."*

The effect of the Hayes v York CC decision is that the ability to record evidence obtained from a heritage asset to be lost (and therefore enhance the understanding of it) should not be the *sole* reason for allowing such harm to occur. However, this does not mean that such mitigation and the benefit flowing from it cannot be taken into account *at all* – it can be taken into account, alongside other factors. It should not be the sole or main determining factor.

The Court's judgement, at paragraph 81, concludes that "*In my judgment, the last sentence of that paragraph 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", in deciding whether the harm to the asset should be permitted.*" Since the wording considered here is substantially the same as paragraph 199 of the NPPF (2018 version) and paragraph 5.139 of the NPSNN<sup>3</sup> the final sentences of those paragraphs should be read by inserting the word "decisive" as follows:

*"However, the ability to record evidence of our past should not be a decisive factor in deciding whether such loss should be permitted."* (NPPF)

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<sup>3</sup> It is noted that whilst paragraph 5.139 reflects paragraph 141 of the NPPF, paragraph 5.139 is in fact more similar to the NPPF predecessor policy PPS5, which the Court also considered suffered from the same *non sequitur* as paragraph 141 of the NPPF. Policy HE 12 of PPS 5 provided:

*"HE12.1 A documentary record of our past is not as valuable as retaining the heritage asset, and therefore the ability to record evidence of our past should not be a factor in deciding whether a proposal that would result in a heritage asset's destruction should be given consent."*

*“A documentary record of our past is not as valuable as retaining the heritage asset and therefore the ability to record evidence of the asset should not be a decisive factor in deciding whether consent should be given.” (NNNPS)*

It is clear, therefore, that the effect of paragraphs 5.139 and 199 is not that the recording of evidence may not be taken into account by the Secretary of State. The recording should be considered alongside all other factors in assessing the planning balance applying to the Scheme, including the environmental, economic and OUV benefits that it delivers.



## **Appendix C: Blick Mead WS09 and Archaeology Pit through the seasons**

Blick Mead

WS09 and Archaeology pit through the seasons

8 November 2018

6 March 2019

21 May 2019



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