

A303 Amesbury to Berwick Down

TR010025

Deadline 5

**8.36 - Comments on any further information requested by
the ExA and received at Deadline 4**

APFP Regulation 5(2)(q)

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

July 2019



Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure)

Rules 2010

A303 Amesbury to Berwick Down

Development Consent Order 20[**]

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1 Introduction

1.1 Purpose of Report

1.1.1 This report provides Highways England's responses to representations by Interested Parties (IPs) submitted at Deadline 4.

1.2 Structure of this document

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

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

- Comments on the Written Representations Report [REP3-013] submitted at Deadline 3;
- Comments on the drainage reports [REP3-008, REP3-017, REP3-018, REP3-020, REP3-021] submitted at Deadline 3;
- Further comments on responses to First Round of Examining Authority's Written Question [REP2-020 to REP2-037] submitted at Deadline 2;
- Comments on the Comments on the Local Impact Report by Wiltshire Council [REP3-014] submitted at Deadline 3;
- Written confirmation of oral statements made at Issue Specific Hearings; and
- Additional submissions.

1.2.3 Comments on the revised OEMP [REP3-006], comments on the revised dDCO [REP3-002] and comments on documents submitted at Deadline 4a regarding the legal positions established at Deadline 4 are responded to in separate reports, submitted at Deadline 6.

1.3 The Examination Library

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

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

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

2 Chris Gillham for A36/A350 Corridor Alliance (AS-046)

2.1	Additional Submission
Highways England responded to Chris Gillham's comments relating to climate emergency in 2.1.1 in the Comments on Deadline 3 Submissions [REP4-036].	

3 Jon Morris (REP4-002 and REP4-069)

3.1	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
3.1.1	<p>On this basis, and accounting for negative impacts listed above, the tunnel appears to have inadequate cost-benefit. However, it has not been possible to identify if this lack of benefit is extensive.</p> <p>Highways England response It is important to note that the work around the contingent valuation report (CVR) was primarily relevant to the Department for Transport's (DfT) investment decision in the Scheme, not the planning merits of the Scheme.</p> <p>However, the "National Policy Statement for National Networks as Presented to Parliament pursuant to Section 9(8) and Section 5(4) of the Planning Act 2008 in December 2014" states: 4. Assessment principles 4.5 Applications for road and rail projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail projects. The business case will normally be developed based on the Department's Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. It is expected that NSIP schemes brought forward through I have highlighted the section of the above guidance which</p>	<p>The Applicant agrees that, as per paragraph 4.5 of the NPSNN, the information in the economic case (which forms part of the business case forming the basis for the investment decision on the Scheme) on economic, environmental and social impacts of the Scheme is important to the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. That information is contained in the; Environmental Statement [APP-038 to APP-292], Case for the Scheme [APP-294], Combined Modelling and Appraisal Report [APP-298] and its Appendix D [APP-302]. Please see the Applicant's previous submissions on this point, in particular in answer to First Written Question SE.1.25 [REP2-035]. Please see the Applicant's previous submissions on this point, in particular in answer to First Written Question SE.1.25 [REP2-035].</p> <p>The CVR is a key part of the assessment of value for money of and therefore the investment decision for the Scheme. However as set out in the Applicant's previous submissions, it is important to be clear on what the CVR does. Although it forms part of the information referred to in paragraph 4.5 of the NPSNN, the monetisation of heritage benefits it contains is not primarily relevant to the decision on whether to grant development consent for the scheme, because those benefits do not need to be monetised in order to be taken into account in the planning balance.</p> <p>The contingent valuation study does not seek to say that its results <u>are</u> the economic benefits deriving from the Scheme, but instead seeks to quantify the heritage benefits for valuation purposes. The question of value for money does not form the basis of the ExA's assessment of the heritage impacts of</p>

	<p>applies to this scheme. It appears to me, from reading this document, that the Business Case is relevant to, and a consideration of, the Inquiry.</p>	<p>the Scheme, which is done in the context of the NNNPS, EIA (including the HIA) and WHS Convention.</p>
<p>3.1.2</p>	<p>As mentioned in previous Written Submission 20020712, referenced 80034-R0011-01 para 2.4.1.4, the statement “Removal of the A303 would reconnect the World Heritage Site to the north and south of the existing A303 allowing visitors to walk freely between Stonehenge and other archaeological sites in the World Heritage Site. “is not factually correct: Removal of the road will only give access to the “Stonehenge Landscape” of which most land is to the North of the A303. The remainder of the WHS to the South contains some bye-ways with public access. However, the monuments themselves cannot be accessed except by trespass: the land is not defined as CROW accessible (for more information see previous submission).</p> <p>The issue with this is that this statement was made immediately before asking the public to value the proposal (and this also applies to other groups surveyed). On the subsequent question B5 on page 71 (LXIX) it was asked: “Looking at the list of amounts below, what is the maximum you would be willing to pay per year, to support a tunnel route? This would be via an increase in your annual taxes in each year of the three-year construction period. Studies have shown that many people answering surveys such as this one, say they are willing to pay more than they would actually be willing to pay in reality. Please think about this question as if it were a real decision and you were actually making a payment for real ”</p> <p>And on subsequent page 73, respondents were then asked to rate the importance of the benefits. One of the identified benefits was:</p> <p>“The ability to explore the whole Stonehenge World Heritage site and explore all its archaeological monuments without the land being divided by the road (6).”</p>	<p>During the CVS, respondents were presented with an artist impression of the views with the A303 removed from the site. The key features of the image were also described as follows:</p> <p><i>“if the A303 became a dual-carriageway with a tunnel of 2.9km (1.8 miles):</i></p> <ul style="list-style-type: none"> • <i>The A303 within Stonehenge World Heritage Site would no longer be visible from Stonehenge.</i> • <i>Reduced traffic noise whilst visiting the stones, which would make large areas of the World Heritage Site more tranquil.</i> • <i>Removal of the A303 would reconnect the World Heritage Site to the north and south of the existing A303 allowing visitors to walk freely between Stonehenge and other archaeological sites in the World Heritage Site.</i> • <i>Tunnel entrances would be constructed within the Stonehenge World Heritage site. These would not be visible from the stones but would be new visible features in the archaeological landscape, although the road would be carefully designed to reduce its impact as far as possible.</i> • <i>Dual carriageway would lead up to the tunnel entrances, including the short sections inside the World Heritage site.</i> • <i>Stonehenge would not be visible from the new A303 route.</i> • <i>A route along the old A303 route would provide access for cyclists, horse riders and walkers.”</i> <p>The Survey was carefully designed and reviewed to ensure information bias was minimised and would not skew the results. The statements in the survey regarding ability to walk in the World Heritage Site were accurate given the number of byways with public access that exist. Further detail follows.</p>

		<p>Removal of the A303 from the WHS creates a safe environment for people to access the southern areas without the need to cross a road: the current A303 will become a restricted byway allowing safe access. There is public access to the WHS south of A303 via Byways 11 and 12 and along a permissive path on National Trust land between these two byways north of the Normanton Down barrow group. Section J13.2 in Appendix J1 of the Consultation Report [APP-036] shows all the permissive paths and PROWs. The Open Access Land is shown as a green hatch on the Environmental Masterplan, Figures 2.5F, 2.5G and 2.5H, that form part of the Application [APP-059]. These plans clearly show the improved connectivity (and therefore improved safety) between existing permissive paths and PROWs once the tunnel is in place.</p> <p>It is therefore clear that the scheme and the removal of the road does allow visitors to walk more freely between Stonehenge and other archaeological sites and monuments in the WHS and so the terms of the survey were accurate and result in no bias.</p>
3.1.3	<p>I have highlighted relevant parts of the above paragraph [NAO Report: <i>At £955 million (2010 prices and discounted) these make up 73% of total monetised benefits. With these included, Highways England expects the project to deliver £1.15 of benefit for every £1 spent</i>].</p> <p>When these issues are taken into account, from a cost-benefit ratio perspective, the project appears to deliver less than £1 of value for every £1 spent even accounting for the heritage benefits. If this is correct, the application should be rejected on this basis alone.</p>	<p>Not all benefits are assigned a monetary value and as such the BCR is only one component of the Value for Money assessment. Further information can be found in The Case for the Scheme and NPS Accordance Table [APP-294].</p> <p>The Value for Money calculation reports a positive BCR i.e. there is more than £1 of benefit for every £1 spent where heritage benefits are accounted for. Moreover, the results of the BCR and Value for Money assessment are primarily relevant to the Government's decision to invest in the Scheme; the decision on whether to grant the application for development consent requires a planning balance to be assessed.</p>
3.1.4	<p>It is likely that Interested Parties to the Inquiry will no longer have sufficient time in which to address these issues with the applicant. It may be possible for the Inquiry to refer the issues for a more detailed review to the National Audit Office: From reading their report, it is not clear that they are aware that there may be additional value issues with respect to the survey.</p>	<p>There are just under two and half months left of the examination during which interested parties can address issues with the applicant and to the Examining Authority. The Applicant will also remain open to engagement following close of the examination. Regarding the National Audit Office (NAO), Highways England actively engaged with the NAO during the preparation and production of their report. All relevant information and background reports were made available to the NAO and all potential sources of bias were discussed with them.</p>

<p>3.1.5</p>	<p>As previously requested in representation R0011 (Deadline 2 response), it would be useful to have the full Contingent Valuation Study made available for review. It may also be useful to incorporate all of the FOI requests (produced by Highways) into the examination process. The documents below, together with any Reports on the Final Surveys (as described for the pilots in Appendix C of document HE551506-AA-GEN-SWI-RP-JX-0026) will be particularly helpful:</p> <p>c) HE551506-AA-GEN-SWI-RP-JX-0025 28apr2017.pdf and; d) HE551506-AA-GEN-SWI-RP-JX-0026 28apr2017.pdf</p> <p>My Preliminary Meeting informative document, Deadline 2 response and my Deadline 3 response requested that the CVR (CVA) should be made available and that it is an apparent requirement of the National Policy Statement for National Networks that the Business case is justified. My deadline 3 response also noted that if the business case is not made available for inspection, it will be rather difficult for the Inquiry to review whether or not it complies with the NPSNN. These documents have not been made available to the Inquiry.</p>	<p>These documents have now been made available [REP4-079 and REP4-080] building on the CVR itself that was submitted with the application (Appendix H to CoMMA Appendix D [APP-302]).</p> <p>As explained in the Applicant's comments on further information requested by the ExA at Deadline 3 [REP4-036], the Applicant has submitted the economic case that supports the transport business case for the Scheme (the CoMMA), pursuant to paragraph 4.5 of the NNNPS, which notes that the economic case will contain certain information that will be important for the consideration of impacts and benefits of a Scheme.</p>
<p>3.2</p>	<p>Oral Submissions</p>	
	<p>Matter Raised</p>	<p>Highways England's Response</p>
<p>The Applicant's written oral submissions for ISH6 [REP4-034] respond to Jon Morris's comments received at Deadline 4. Additional points raised are detailed below</p>		
<p>3.2.1</p>	<p>Based on the CVS documents obtained by Suzanne Keene, the survey appears to have used Information Bias to construct the background to valuation questions asked of the public (refer to my</p>	<p>There are a number of well-known potential biases in Contingent Valuation that can be problematic if not adequately addressed in the survey instrument and analysis. By engaging experts who undertook a thorough literature review of</p>

	<p>previous note referenced 80034-R0012 sections 1.5 to 1.14 for more information).</p>	<p>appropriate methods and techniques the potential incidence of bias is reduced.</p> <p>Framing and information bias refer to the issue of when people react to information in different ways depending on how it is presented and on the level of detail provided in the information. The way the information is provided in a CV survey, therefore, has the potential to impact on WTP/WTA results. The information provided in the surveys was clearly set out in a neutral manner, describing both the positive and negative effects of the different road options. The information provided in the surveys was tested within all three surveys during the pilot phase to ensure it was sufficiently clear to allow respondents to answer the questions.</p>
<p>3.2.2</p>	<p>If information Bias becomes accepted as a method by which an applicant can show that publicly funded projects comply with Green Book principles, some unusual consequences could start to appear. In particular, the public's opinion appears to have been used in this project to justify spending on a perceived benefit which is not actually beneficial (see 80034- R0012 sections 1.7 to 1.9 and 80034-R0013 for more information and explanation).</p>	<p>See response to paragraph 3.1.2 above - the survey was carefully designed to avoid information bias</p> <p>The use of CVS is endorsed by the HM Treasury Green Book in the circumstances of the Scheme. Enhancing the cultural heritage of the Stonehenge WHS, through the delivery of the A303 Amesbury to Berwick Down Road Scheme, is of such significance that it formed an integral part of the Client Scheme Requirements and, therefore, must be fully incorporated into the appraisal process. The HM Treasury Green Book sets out that the Economic Case should monetise costs and benefits where possible. For the WHS there are no market prices to reflect benefits of the potential improvements.</p> <p>Highways England commissioned bespoke research to estimate the value of enhancing the WHS at Stonehenge by removing the road from a substantial part of it. The purpose of the research was to elicit a monetary valuation by asking members of the public what they would be willing to pay for improvements that the Scheme would deliver. This is a Contingent Valuation Approach and is one of the techniques recommended in HMT's Green Book.</p> <p>Respondents to the survey were provided with a description of the impact of the existing A303 on the WHS. They were also provided with information on the expected impacts of the scheme in terms of tranquillity, visual amenity and landscape severance. Based on this information, respondents were asked to consider if they were willing to pay something to realise these</p>

		impacts, or if they would require to be compensated for these impacts. The three attributes we have valued are demonstrably beneficial – as evidenced throughout the rest of the application documents - and would be delivered by the Scheme.
3.2.3	<p>For the above reason, I believe it is in The Public Interest to have the documents supplied to Suzanne Keene, together with subsequent reports on those documents, made available to the Inquiry (more detail can be found in 80034-R0012, section 2.1).</p> <p>Section 4.5 of the NPSNN appears to me to allow those documents to be made available to the Inquiry.</p>	These documents have now been made available as REP4-079 and REP4-080 which together with previously submitted material form all material relevant to the CVS.
3.2.4	<p>The QC for the applicant mentioned that the NAO had approved the CVS (in partial response to the request by Interested Parties for the support documentation on that study). The NAO report referred to is assumed to be “Improving the A303 between Amesbury and Berwick Down” (HC 2104 SESSION 2017–2019 20 MAY 2019 named as “Improving-the-A303-between- Amesbury-and-Berwick-Down.pdf”).</p> <p>As noted in my submission 80034-R0012 (for deadline 4 but published in advance), the National Audit Office report does not appear to formally state that the NAO have reviewed the study itself. Given the issues noted above, it would be particularly useful to establish whether or not the NAO has verified the entirety of the A303 Contingent Valuation Study, especially given the apparent reliance of the applicant's counsel on the NAO's approval.</p>	<p>See response to paragraph 3.1.4 above.</p> <p>The NAO report is concerned with making early observations on the progress and risks in upgrading the A303 between Amesbury and Berwick Down including building a tunnel through the Stonehenge WHS, in order to therefore comment on the value for money to the public purse provided by the Scheme. In doing this the NAO examined the DfT's and Highways England's case for investing in the A303 Amesbury to Berwick Down Scheme. The review included interviews with Highways England and DfT staff as well as review of documentary evidence including the outline business case for the project (<i>which includes the results and description of the CVS</i>), project reviews, portfolio management information, and papers and minutes of boards, such as the Department's Board Investment and Commercial Committee.</p> <p>Highways England actively engaged with the NAO during the preparation and production of their report. All relevant information and background reports were made available to the NAO. There is no inference in the NAO report that the CVS methodology is inappropriate. The NAO noted in para 2.6 of their report that Highways England sensibly expanded its appraisal in the economic case to include heritage benefits.</p>

4 Trail Riders Fellowship (REP3-096 and REP4-058)

4.1	Comments on Written Representations	
	Matter Raised	Highways England's Response
<p>TRF “maintains the case set out in its own Written Representation and has nothing to add at this stage”. For the Applicant’s response to TRF’s Written Representation [REP2-141], see section 9 in the Comments on Written Representations [REP3-013].</p>		
<p>4.1.1</p>	<p>TRF welcomes (and agrees with) Wiltshire Council’s view <u>that motorcycles are not likely to have a significant impact on the byways</u>, and submits to the Examining Panel that this applies equally (if not more strongly) to the ‘old’ A303. Do not extinguish public highway rights along the entire width of the ‘old’ A303 and create by order a new restricted byway. Instead stop-up part of the width and leave the existing public right of way on the residual width and regulate the traffic along it by means of a traffic regulation order.</p>	<p>As set out in the Applicant’s responses to agenda items 4.9 to 4.12 in the written oral submission from ISH6 regarding traffic and transportation [REP4-034] and the Applicant’s Deadline 4a submission [REP4a-001]:</p> <ol style="list-style-type: none"> 1. The Applicant does not agree that it simply can be said that motorcycles are not likely to have an impact without an assessment taking account of all environmental submissions being first undertaken; 2. The Applicant considers that it is for the TRF and Wiltshire Council to propose to the ExA how these changes could be brought forward within the Examination timetable; and 3. The degree of change from the Applicant’s proposal is significant. The change would see a 400m stretch of what would be a restricted byway accessible only by restricted byway users, within the sensitive WHS landscape, becoming a byway open to all traffic available to use by any vehicle capable of using it, subject to any traffic regulation measures imposed. This would introduce the sights and sounds of public traffic where previously none was proposed. <p>The Scheme presented at the statutory public consultation between February 2018 and April 2018, did include a link for motorised vehicles between AMES 11 and AMES 12. This was located in a dry valley to the south of the existing A303 alignment. Further to stakeholder feedback, the option not to provide a new connection south of the existing A303 to provide a motorised connection between byways 11</p>

and 12 was presented at the supplementary consultation between July and August 2018 and was well supported, including by the heritage bodies. The option was considered preferential as it avoids having an additional route open to vehicle traffic within the WHS. This route would likely have adversely affected the setting of the Normanton Down Barrow Group and increased disturbance of nesting stone curlew in the Normanton Down RSPB reserve. The option without the link was taken forward within the Scheme design (ES para 3.3.14) and was consequently assessed in the ES and HIA.

The removal of the link for motorised vehicles between Byways AMES 11 and 12 contributes to the Scheme's objective to remove the sight and sound of traffic from much of the WHS landscape, a key aspiration of the 2015 WHS Management Plan.

The ES identifies a substantial number of significant beneficial effects. These apply to 72 scheduled monuments (65 contained within 12 asset groups, plus seven discrete assets), together with two non-designated assets. All are within the WHS and all are considered as having Very High value (ES para 6.9.27). Reintroduction of a link for motorised vehicles between AMES 11 and 12, along the old A303, could reduce the beneficial impact currently assessed, potentially to the extent that some of the significant effects identified in the ES would no longer be significant.

Further, the Applicant strongly objects to any change to the extent of stopping up of the existing A303 to retain a strip of existing highway that is not stopped up. That approach would fix at this stage the precise width, alignment and highway boundary of the retained way which would unnecessarily and inappropriately constrain the Applicant's flexibility to deliver this element of the Scheme.

4.2	Oral Submissions	
	Matter Raised	Highways England's Response
4.2.1	<p>TRF is surprised that unpublished survey work (relating to use of Byways 11 and 12) is being undertaken now. TRF considers that the ExA should be very cautious about placing any weight on it. TRF reserves its position in relation to costs if new evidence is submitted at a late stage.</p>	<p>For clarification, Highways England can confirm that survey data related to Byways 11 and 12 was obtained on the following dates:</p> <ol style="list-style-type: none"> 1. just over 2 weeks of data at Easter 2018, from 30th March to 19th April 2018, this focussed on non-motorised users; 2. Byway 11 from 1st to 20th June 2018 and Byway 12 between 1st to 17th June 2018; 3. From 25th March 2019 to 5th July 2019. <p>A summary of the 2018 data was provided in the Applicant's response to the TRF's Written Representation [REP3-013, section 9]. An update including a summary of the 2019 data was provided in the Issue Specific Hearing on Traffic and Transport (ISH6) on 13 June 2019 [REP4-034]. To assist the reader, that information is included here:</p> <p>Highways England commissioned a traffic survey of the use of Byways 11 and 12 which was undertaken in June 2018. Summarised as follows:</p> <ul style="list-style-type: none"> • Concurrent traffic counts were undertaken on 1st, 2nd and 3rd of June 2018. • On Byway 11, the survey recorded a range of 0 to 4 movements by motorcyclists per day northbound to the A303 and 2 to 11 movements by motorcyclists southbound from the A303 on Byway 12. • On one of those survey days, no motorcyclists were recorded moving north of AMES11 to the A303 at all. • Over a 20-day period between 1st and 20th June 2018 a total of 12 motorcycles were recorded travelling north to south and 13 travelling south to north on Byway 11. Even assuming that all of the motorcyclists heading north turned left and then left again into Byway

		<p>12, the largest number of people recorded in the traffic survey using the A303 to connect between the byways would be 4 in an entire day.</p> <ul style="list-style-type: none"> Highways England commissioned a further survey starting on 25th March 2019 and continuing until further notice: <ul style="list-style-type: none"> A total of 9 motorcycles turned off A303 onto Byway 12 south-bound over a 26-day period between 25th March and 20th April 2019, an average of about one every 3 days. This is the manoeuvre that would be prevented if the link for motorcycles between Byways 11 and 12 was removed. <p>A total of 66 motorcycles travelled along Byway 11 over a 37- day period between 25th March and 1st May 2019, an average of less than 2 per day. Further analysis of the images is necessary to confirm whether these trips were two-way along Byway 11 or whether they used A303 for part of the trip.</p> <p>Highways England has been analysing and providing summaries of the June 2018 and Spring 2019 survey data in order to respond to points raised by TRF in their written representations [REP2-141] and oral evidence provided at ISH6 [REP4-058].</p>
4.2.2	TRF considers that Highways England's analysis of the User Experience Forms (UEFs) did not consider quality and safety of the user experience. The focus on quantity alone ignores the qualitative aspects of the current use of Byways 11 and 12.	Highways England's analysis of the UEFs was purposely based on an initial numerical basis in order to refute TRF's earlier statement [REP3-013, paragraph 5.1.15] that Byways 11 and 12 and the link between them are well used by motorcyclists.
4.2.3	TRF consider that the alternative route suggested by Highways England, requiring a 5mile detour via the A360 is not a satisfactory or safe alternative. It would increase the danger for motorcyclists on busier and less enjoyable roads; it does not provide an alternative for recreational enjoyment of the countryside. There has been no assessment of the suitability of the alternative for motorcyclists or other vulnerable road users. James Higgs' written summary (attached as part of the TRF DL4 submission) also provides data	<p>Motorcyclists do not at present, have an off-road link between Byways 11 and 12.</p> <p>The alternative route between Byways 11 and 12 is available via Middle Woodford and the A360. The detour is approximately 5 miles or 10 minutes at an average speed of 30mph. This assumes 3.4 miles along unclassified roads and 1.6 miles along the A360.</p> <p>Vulnerable road users in mobility scooters are permitted by law (section 20 of the Chronically Sick and Disabled Persons Act 1970) to use the restricted byways (subject to them complying with the conditions and requirements of</p>

<p>relating to numbers of motorcyclists that have been killed or injured on local road networks.</p>	<p>the Use of Invalid Carriages on Highways Regulations 1988), such as between Byway 11 and 12.</p> <p>The accident data that is available to Highways England from the STATS19 dataset for the alternative route between Byways 11 and 12, has been reviewed in order to provide a response to TRF on this matter. The data extracted is a record of all accidents on the alternative route between 2009 and 2016.</p> <p>In summary, there were a total of 30 recorded accidents between 2009 and 2016 on these identified roads. 25 of the recorded involved car occupants. Of these, two were fatal, five were severe and 19 were slight. Two of the accidents involved van / goods vehicles of 3.5 tonnes maximum gross weight (mgw) or under and were both classed as slight. Two further accidents involved Goods vehicles 7.5 tonnes mgw and over. One of these accidents was classed as slight while the other was classed as severe.</p> <p>With reference to the specific concerns of the TRF, the remaining one accident involved a motorcyclist. This is the only recorded motorcycle accident on these roads in the entirety of the 2009-2016 dataset. This accident took place in June 2016. This was classed as a severe accident and involved a 23 year old male. The accident occurred when the vehicle was slowing or stopping at a junction.</p> <p>However, Mr Higgs of TRF, in his written summary of oral evidence at the Issue Specific Hearing [REP4-058] used accident data between 1999-2018 for a larger search area than just the alternative route. By extending the review of accident data to match the dates that were used by Mr Higgs (1999-2018) for the alternative route only, there were six incidents involving motorcycles. These include the severe accident noted above. Of the others, two occurred in 2002, one in 2005, one in 2006 and one in 2008. Of these six incidents, five are slight with one serious.</p> <p>So, in summary, the accident record for the suggested alternative route between Byways 11 and 12 does not support the TRF's assertion regarding the suitability and safety of the alternative route.</p>
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4.2.4	TRF identify Defra's guide entitled, "Making the Best of Byways" (Dec 2005) as setting out practical guidance for authorities to maintain and support networks. They state that in "broad terms connectivity and circular routes should be promoted for all types of user".	<p>Highways England has considered the Scheme against relevant policy in its Case for the Scheme and NPS Accordance [APP-294]. The Planning Act 2008, section 104 requires the Panel to have regard to any national policy statement, the local impact report, any matters prescribed in relation to development of the description to which the application relates and any other matters that the Panel thinks are both important and relevant to its decision. The Case for the Scheme [APP-294] considers the Scheme's compliance against the National Networks National Policy Statement (NPSNN) and other relevant and important legislation and policy including the National Planning Policy Framework. The Case for the Scheme [APP-294, Appendix A] provides detailed analysis of NPSNN policy and explains how the Scheme complies. In particular, it accords with NPSNN requirements in relation to sustaining and where appropriate, enhancing the significance of heritage assets including the contribution of the setting (NPSNN paragraph 5.130); improved provision for Non-Motorised Users (NMUs) (NPSNN paragraph 3.17), helping and encouraging use of more sustainable modes of transport for local journeys and it would also afford safer NMU connections using north-south Public Rights of Way, currently severed by the existing surface A303 (NPSNN paragraphs 3.22 and 5.203-5.205).</p> <p>The Guidance identified by TRF is now some 14 years old, it has not been updated since the 2005 edition and guidance generally carries less weight than policy. It should therefore be considered as that – just guidance.</p>
4.2.5	TRF consider that Highways England's claim that there are few motorcyclists using Byways 11 and 12 is inconsistent with the claim that they would cause a significant impact, if allowed to use the old A303 between Byways 11 and 12 as a link.	Highways England considers that if motorcycles were to be the only vehicles allowed to use the former A303 between Byways 11 and 12, then an extended off-road facility within the WHS would be available for motorcyclists, which would be likely to increase the use of the byways compared with the present position. This would be contrary to the aims of the 2015 WHS Management Plan.
4.2.6	TRF considers that the application documents do not reflect the fact that motorcyclists are vulnerable road users, despite them having been recognised as such by the Department for Transport since the term's inception.	<p>Highways England disagrees with TRF on this matter.</p> <p>The Equalities Impact Assessment [APP-296], page 18, explains that the assessment includes an assessment of NMUs and vulnerable users, many of which have protected characteristics. It goes on to explain that "<i>Vulnerable</i></p>

		<p><i>road users also include NMUs in particular children and older people as well as motorised vehicle users who are more 'at-risk' such as young male drivers and motorcyclists."</i></p>
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5 Dr Andrew Shuttleworth (AS-049)

5.1	Comments on Written Question responses	
	Matter Raised	Highways England's Response
5.1.1	<p>Highways England appear to have scored a significant “own-goal” and demonstrated, fairly conclusively, that 8 of the 10 models relied on for the A303 Scheme have not been validated in any meaningful way, that validation documentation is unavailable and that no Senior Responsible Owner (or equivalent) has been identified for any of them.</p> <p>Irrespective of Highways England’s claims to the contrary, the recommendations in the Aqua Book apply to them and have not been followed either in practise or spirit.</p> <p>Notwithstanding the implications of 6.2, Highways England have failed to adhere to the mandatory requirements of DfT in their own internal documentation (WebTAG and its primary source documentation).</p> <p>As 8 of the 10 models must be regarded as unvalidated, their outputs and implications must be treated as questionable.</p> <p>We invite the EA to reject any and all studies based on the use of these models and draw the shortcomings of Highways England to</p>	<p>The models used to assess the impacts of the A303 Amesbury to Berwick Down Scheme have, as demonstrated in the application documentation, been developed using appropriate methods and to a suitable standard. The Examining Authority has observed the use of the same methods and standards in other planning applications, which comply with the NPSNN requirements, and can therefore have confidence in the quality of the evidence provided.</p> <p>The Department for Transport (DfT) quality assurance procedures are set out in their document ‘strength in numbers’¹. This explains their compliance with the AQUA book², which explains the Government guidance on publishing quality analysis.</p> <p>In planning the A303 Amesbury to Berwick Down Scheme, Highways England has worked with DfT in full compliance with DfT quality standards and procedures. The DfT ‘centres of excellence’ have reviewed the data, approach and outputs, appropriate to the risks for the decision making, for the different technical aspects and provided quality assurance statements at the different decision stages as the business case for the Scheme has been developed.</p>

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/353372/strength-in-numbers.pdf

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/416478/aqua_book_final_web.pdf

	<p>the attention of the Chief Scientific Advisor for the Department of Transport and the Government Chief Scientific Advisor.</p>	<p>Highways England is structured with specialist technical departments. Project management draws on and relies on this expertise to approve both the methodologies employed and technical reporting. The individuals allocated this responsibility have supported the DfT in understanding the quality of the work undertaken and provided analytic assurance statements for the business case.</p> <p>The documentation provided as part of the DCO application was developed and assured by technically competent individuals, and comprises the evidence summarised in the business case. This documentation sets out appropriately, reflecting the risks involved, the source data, the methods employed, verification and validation, and explains the confidence that can be placed in the outputs.</p>
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6 Richard Bartosz (AS-044)

6.1	Oral Submissions	
	Matter Raised	Highways England's Response
6.1.1	<p>With support for this application, as it stands, very dangerously close to being so - "pay to see", threatens the ability to engage intimately, either spiritually, physically or emotionally, with the Monument and its setting. Arguably this has already begun to happen, and I concur with those who argue this will only get worse if consent is granted.</p>	<p>See response to item 2.13.1 in the Oral Submission [REP3-012] and 15.1.1 in the Comments Received at Deadline 3 [REP4-036] which states that a principal aim of the Scheme is to remove the sight and sound of traffic from much of the WHS landscape, thereby re-uniting Stonehenge with surrounding monuments. The response also explains that a free view of the stones would remain from the existing A303 which would be converted to a restricted byway as part of the Scheme, and from the existing PRoW network. Furthermore, Highways England notes the results of the Equalities Impact Assessment [APP-296] which concluded that, in relation to heritage and the WHS specifically, the Scheme will have beneficial impacts in terms of the setting of specific spiritually significant heritage assets, particularly in relation to the removal of the existing A303. The Equalities Impact Assessment concluded this will add to the experience of people visiting the area.</p>
6.1.2	<p>It seems to me the Expressway has reached a point of no return, and Stonehenge is to be the victim in order to achieve its delivery. Stonehenge should not be, and should never be the subject of, or subjected to, a point of no return. I fear that many who might be inspired to pursue the challenge in the future will simply turn round and say "what's the point". We will lose what should be a breathing and living authentic entity. We will fail future generations.</p>	<p>The Applicant is unsure of the point being made by this comment but would be happy to respond further once the point is clarified. The Applicant also notes the assessment of the impact of the Scheme on the Outstanding Universal Value of the World Heritage Site. This assessment concluded that, overall, the Scheme is assessed as having a Slight Beneficial effect on the OUV of the WHS and that the OUV of the WHS would be sustained. Further information can be found in the ES Chapter 6 Cultural Heritage [APP-044] and ES Appendix 6.1, Heritage Impact Assessment [APP-195]. In the context of the public sector equality duty and human rights, the Equalities Impact Assessment (referred to in the response above) concludes that the positive changes would add to the experience of people visiting the area and the Scheme is not anticipated to impact on human rights in this respect.</p>

		<p>The outcome of the application is not pre-determined. The Scheme is currently subject to an examination by an independent panel of Inspectors, who will make a recommendation to the Secretary of State for Transport. The Secretary of State will make the final decision on whether the Scheme receives consent.</p>
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7 Wiltshire Council (REP4-039 and REP4-081)

7.1	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
7.1.1	<p>(691 – British Horse Society, 735 – Peak District Green Lanes Alliance, 737 -English Heritage, 814 - GLEAM, 816 & 817 – National Trust) The traffic issues raised by Myra Bennet concerning BOAT AMES 11 in particular are supported by Wiltshire Council and should be resolved by Highways England (HE), not left for the Council to resolve subsequent to the Scheme having been delivered. HE maintains that the DCO does not provide for changing the status of byways 11 and 12, but Wiltshire Council considers that the concerns could be overcome through the use of appropriate prohibition of driving orders and has proposed that an additional Schedule be included in the DCO to provide these.</p>	<p>Please see the Applicant's Deadline 4a submission on this matter [REP4a-001] which sets out why the Applicant does not agree with Wiltshire Council's proposed amendments. This builds on its response to agenda item 4.9 – 4.12 in the oral submission report from Issue Specific Hearing 6 regarding traffic and transport [REP4-034].</p>
7.1.2	<p>(737 – English Heritage) In regards to Stonehenge Cottages, the response from HE does not reflect the undertaking on rehousing in case of reaching agreed vibration trigger levels given to the Council's Public Protection Service (as outlined in MW-NO15).</p>	<p>To confirm, Highways England has committed to offer temporary re-housing to the occupants of Stonehenge Cottages in the circumstances detailed in the Outline Environmental Management Plan (OEMP) [REP4-020] as submitted at Deadline 3 (MW-NO15). This is also detailed in the latest Wiltshire Council Statement of Common Ground. Compliance with the OEMP is secured by requirement 4 of Schedule 2 to the draft Development Consent Order [REP4-018].</p> <p>Please note a revised version of the OEMP will be submitted at Deadline 6.</p>
7.1.3	<p>(737 – English Heritage) Wiltshire Council also notes the comments with regards to the private water supply at the Stonehenge Visitor's Centre. During the Issue Specific Hearing the Council was not reassured by the statement from the HE hydrologist, that appears to</p>	<p>The Stonehenge Visitor Centre boreholes have been assessed in the ES Groundwater Risk Assessment [APP-282]. The Centre was visited as part of the Water Features Survey. It has four boreholes (Table 1 of Appendix 11.4 Annex 2 Water Features Survey Results [APP-282]). Three are used for</p>

	<p>indicate that HE were not monitoring water quality to Drinking Water standard. Potability is a significant issue and HE need to take steps to ensure potability of supplies used for human drinking water purposes are maintained in such a condition and not detrimentally affected by their proposed development.</p>	<p>ground source heating and one for water supply. These are approximately 1.5km up hydraulic gradient from the proposed road. The boreholes are at low risk and no significant effects are predicted.</p> <p>Regarding the statement in the Issue Specific Hearing, this was related to not monitoring water quality at private users' boreholes and wells with the purpose of assessing potability. This role will continue to be carried out by the Local Authority which acts as the regulator for private water supplies and has a number of statutory duties under the Private Water Supplies Regulations. These Regulations place a duty on local authorities to conduct a risk assessment of each private water supply within their area and to undertake monitoring in order to determine compliance with drinking water standards.</p> <p>Highways England confirms however that its groundwater samples have been compared to the UK Drinking Water Standards (see paragraph 3.10.2 of APP-282 and Table 3.6). Highways England will continue to compare groundwater quality samples with drinking water standards as part of the Groundwater Management Plan proposed at item MW-WAT10 of the OEMP [REP4-020] but is not proposing to take on the role of the Local Authority or the Drinking Water Inspectorate (DWI) with regard to Private Water Supplies. The Drinking Water Inspectorate (DWI) is the competent authority for ensuring the Drinking Water Directive requirements are met in England and Wales. It provides independent reassurance that public water supplies in England and Wales are safe and drinking water quality is acceptable to consumers.</p>
<p>7.1.4</p>	<p>(741 – Turner Family) In HE's response (paragraph 4.9.20), it states that the existing tree line / hedge which will form the divide between the bridleway and the existing A303 will form part of the local highway and public right of way network owned and maintained by Wiltshire Council moving forward. This has not been discussed with Wiltshire Council PROW service and appears to be a previously unmentioned requirement upon the Council. PROW does not generally take on the maintenance of hedges / fences alongside public rights of way; if it is to do so here, funding provision will be</p>	<p>Highways England proposes to pay a commuted sum for maintenance obligations (including in relation to hedge and fence maintenance along public highways) to Wiltshire Council where it would have a statutory responsibility, as local highway authority, for those obligations. This will be recorded in the agreement proposed to be entered into with Wiltshire Council.</p>

	sought from HE to cover the additional costs to the Council moving forward.	
7.1.5	(741 – Turner Family) Wiltshire Council has previously commented that it supports the Turner family's request that HE assess the impact of compaction on the underlying geology. Wiltshire Council would require evidence that the proposed development will not alter the drainage characteristics of the site area so as to cause flooding (ponding) or lead to increased surface water runoff. The Soils Management Strategy, to be developed by the appointed contractor, will identify the types of soil affected and the methods that would be employed for the restoration of agricultural land. Currently, there is inconsistency in the OEMP (Rev 1) with regards to the need for consultation with Wiltshire Council in preparation of the Soils Management Strategy. Wiltshire Council would like to be consulted in the preparation of the Soils Management Strategy to ensure that construction activities do not lead to increased surface water runoff that can lead to flooding.	As stated within item MW-G7 (Management Plans) of the OEMP [REP4-020], Wiltshire Council will be consulted on all aspects of plans that are relevant to their functions. Further to this, the 'reporting criteria' column within item MW-GEO3 (Soils Management Strategy) of the OEMP will be amended at Deadline 6 to include consultation with Wiltshire Council.
7.1.6	(808 – M&R Hosier) Wiltshire Council have received correspondence from the Hosier's with Appendix 2 attached, and will respond directly to the Hosiers. The Council have asked HE for comment and await their reply. The Council also refers to the general comment on private water supplies as indicated in response to representation 000737 above.	<p>The correspondence relates to the omission in the Environmental Statement of a fifth borehole on the Turner licence. The fifth abstraction point does not alter the findings of the Qualitative Risk Assessment (Annex E [APP-282]) and, irrespective of the detail of boreholes, the Environmental Statement assesses impacts on the aquifer as a whole, and there are no significant impacts (upon either the water levels, flow or quality) on the aquifer from which the boreholes draw water, or on these individual abstractions.</p> <p>Four of the licensed points (A-D) were included in Table 3.3 of 6.3 Environmental Statement Appendix 11.4 - Groundwater Risk Assessment [APP-282]. Point E was omitted and is approximately 200m south west of Point D. None of these points (including E which is further away from the Scheme) are predicted to be impacted by the Scheme.</p>

		<p>In the Environmental Statement [APP-049] paragraph 11.6.56 it is made clear that a licence was being re-applied for and also that licence details can change. Paragraph 11.6.56 states:</p> <p><i>“Through the water features survey undertaken in 2018 (the results of which are provided in the GRA in Appendix 11.4) an additional expired licence has been identified at Manor Farm in Winterbourne Stoke. This licence, which covers four boreholes for agricultural (general and domestic) purposes, lapsed in March 2017 and was re-applied for in February 2018. It was included in the water features survey in case it was re-licensed, which The Applicant understands has now occurred.”</i></p> <p>It is also stated in paragraph 11.6.91:</p> <p>“Private water supplies may alter and the contractor will need to confirm any new supplies through the requirements of the Outline Environmental Management Plan (OEMP)”. Refer OEMP commitments MW-WAT11, MW-COM6 and MW-COM8 (REP3-006).</p> <p>The expired licence at the time of writing has been re-issued by the Environment Agency and covers five wells.</p> <p>Figure 11.4 of the Water Chapter of the ES [APP-049] shows the borehole locations. An updated version of Figure 11.4 is attached to include the fifth borehole and the updated licence (no longer pending in the Key). The borehole that was omitted is further from the scheme than the other four boreholes and therefore at lower risk.</p> <p>There were discussions with the Turners during a visit to their boreholes by HE on 30th May 2019, with a view to carrying out the monitoring requested by borehole users (this monitoring is not required, but Highways England has agreed to undertake this where practicable).</p>
<p>7.1.7</p>	<p>(810 - the EA) Regarding paragraphs 23.1.1 and 23.1.2 in HE’s response, Wiltshire Council supports the Environment Agency’s (EA’s) proposal that a more specific mention of the Construction Environmental Management Plan (CEMP) and Handover Environmental Management Plan (HEMP) should be included in the DCO. Requirement 4 in the DCO currently states:</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>

Outline Environmental Management Plan

“4.

1. Save for the preliminary works, the authorised development must be carried out in accordance with the OEMP.
2. The preliminary works must be carried out in accordance with the preliminary works OEMP.
3. The undertaker must make each construction environmental management plan and each handover environmental management plan produced in accordance with the OEMP available in an electronic form suitable for inspection by members of the public.”

Wiltshire Council are considering changes to this requirement and the following amended wording:

“Construction Environmental Management Plan

1. No part of the authorised development is to commence until a CEMP has been prepared, in consultation with Wiltshire Council and the Environment Agency, and submitted to and approved in writing by the Secretary of State, in consultation with Wiltshire Council and the EA.”
2. The CEMP must be in accordance with the Outline Environmental Management Plan.
3. The authorised development must be constructed in accordance with the approved CEMP.
4. Upon completion of construction of the authorised development the CEMP must be converted into the HEMP, in consultation with Wiltshire Council and the EA, and the authorised development must be operated and maintained in accordance with the HEMP.”

The amended requirement would ensure the following:

	<ul style="list-style-type: none"> - Approval of the CEMP by the Secretary of State, in consultation with Wiltshire Council and the EA, instead of HE, which will provide a higher level of assurance. - Implementation of the Scheme in accordance with the CEMP, instead of the OEMP, which is more appropriate as the Scheme will be refined as the CEMP is developed. <p>Clarification of how the OEMP will develop over time into the CEMP and then HEMP, guiding the Scheme from outline design to detail design to construction to operation and maintenance.</p>	
7.1.8	(810 – the EA) Regarding paragraph 23.2.26, Wiltshire Council also requests that the Council be consulted during the preparation of the Water Management Plan, as it is the flood risk management authority leading on surface water, groundwater and ordinary watercourses.	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
7.1.9	(812 - NFU) Regarding HE's response (paragraph 25.1.10): In the site drainage action / commitment in the OEMP (MW-WAT3), HE commits to limiting water flows from the site during construction to existing runoff rates, unless otherwise agreed with the EA. This should also be agreed with Wiltshire Council as the statutory authority leading on surface water risk management.	In the OEMP MW-WAT3 [REP4-020] and ES Chapter 11, Section 11.8 Road Drainage and the water environment [APP-049] Highways England commits <i>“to limiting water flows from the site during construction to existing runoff rates, unless otherwise agreed with the EA.”</i> It would be normal practice to construct sections of the full boundary drainage system at the start of the construction to manage the surface water run off within a controlled system, the discharge rate from this system would be agreed with the EA. However, should there be a need to convey the surface water runoff to a discharge point utilising an open overland route following the controls imposed by the existing ground levels and topography, as required this would be agreed with the relevant Statutory Authority prior to the installation of the drainage works. In this case the Statutory Authority leading on surface water risk management is Wiltshire Council who would be consulted as defined within the statutory procedure. An amendment has been made to item MW-WAT3 of the OEMP in line with this at Deadline 6:

		<p><i>“water flows from sites will be limited during construction to existing runoff rates, unless otherwise agreed with Wiltshire Council or the Environment Agency in accordance with relevant legislation;”</i></p>
7.1.10	<p>(821 – Wiltshire Council) Regarding paragraph 22.1.4 in Highways England response, Wiltshire Council archaeology does not agree with the following reason for dismissing the consideration of longer tunnel options: “because they would not deliver sufficient additional benefits to justify the additional cost.” The Council’s archaeology service does not think this has been fully justified.</p>	<p>Detail of the reasoning behind the decision to reject the extended tunnel options is set out in Highways England’s Response to Written Questions [REP2-024] at AL.1.29 which explains the benefits and dis-benefits of either cut-and-cover or bored tunnel extension in more detail than Wiltshire Council’s response alludes to.</p> <p>The heritage benefits of each option are acknowledged and are summarised in paragraphs 42 and 47 of AL1.29 as, “slightly more beneficial than the Scheme”. The additional cost for the two options is estimated as £264 million for cut and cover extension (paragraph 52) and £578 million for bored tunnel extension (paragraph 55).</p> <p>Highways England remains of the opinion that the balance of benefits and dis-benefits would not justify the significant additional cost of either option. This position has been fully justified in Highways England’s previous response outlined above.</p>
7.1.11	<p>(821 – Wiltshire Council) Regarding paragraph 22.1.22, Wiltshire Council’s archaeology service’s view is that an addendum to the EIA is still required as the report and the analysis of the fieldwork results contained in them were published after the EIA chapter on cultural heritage was written.</p>	<p>Highways England is continuing to discuss this matter with Wiltshire Council as part of the agreement of a Statement of Common Ground. Highways England respectfully maintains its current position that an addendum to the EIA is not required as the results reported in the Environmental Statement are not changed as a result of the archaeological evaluation and survey reports, as set out at paragraph 22.1.19 of the Applicant’s Comments on Written Representations [REP3-013]. See also the Applicant’s Comments on Wiltshire Council’s Local Impact Report at 4.02 [REP3-014].</p>
7.1.12	<p>(821 – Wiltshire Council) With regards to paragraph 22.1.32, Wiltshire Council archaeology retains its view that further mitigation may be required to reduce the adverse impact of the cutting on the monuments displaying attributes of OUV at the western end of the</p>	<p>The additional confirmatory plans are being generated. These plans are zones of theoretical visibility, illustrating the theoretical visibility of vehicles on the proposed western approach cutting, between the western edge of the WHS and the entrance to the western tunnel. The plans will be shared with Wiltshire Council as soon as they are complete.</p>

	scheme. Wiltshire Council archaeology has requested additional visual analysis and plans that have not yet been forthcoming.	
7.1.13	(821 – Wiltshire Council) The issues of approvals for all archaeological mitigation work is still under discussion and Wiltshire Council strongly disagree with what is set out in paragraph 22.1.57, that the Council will only be consulted where appropriate. Wiltshire Council's view is that HE cannot be the approving body for the archaeological mitigation works.	Wiltshire Council's view is noted. Highways England is continuing to liaise with Wiltshire Council regarding this matter.
7.1.14	(821 – Wiltshire Council) Paragraph 22.4.6 in HE's response appears to underplay the extent of the heads which Wiltshire Council wishes to see in the side agreement (no draft has yet apparently been received, but was promised last week). Importantly, Wiltshire Council wishes to ensure, inter alia, that the agreement makes provision for Traffic Regulation Orders (TROs) to be made by the Council post works, where these are reasonably required as a consequence of traffic activity directly related to the provision of the Scheme. For example, such orders could seek to restrict parking at Stonehenge Road, prohibit HGV traffic on Allington Track, or impose speed restrictions at the Rollestone Crossroads upgrade.	The draft agreement issued to Wiltshire Council on 1 st July 19 includes at Clauses 8.2.2 and 9.1.2 provision for Highways England to pay the Council's reasonable costs for delivering Traffic Regulation Orders (TROs) in certain circumstances and locations (at Rollestone Crossroads, Allington Track and during Solstice events), where Highways England consider it appropriate (acting reasonably).
7.1.15	(821 – Wiltshire Council) Wiltshire Council does not accept HE's assertion that the lack of provision of a link between BOATs AMES 11 and 12 for motorised users does not create a need for prohibition of driving orders. The Council anticipates increased use of these byways by motor vehicles for reasons already stated in its written representations and which will adversely affect the safety and enjoyment of non-motorised users, damage the surface of the byways and despoil the Outstanding Universal Value (OUV), so working against the benefits to the World Heritage Site (WHS) that the Scheme as a whole will deliver. HE should acknowledge these ancillary issues as an integral adverse effect of the Scheme and	Highways England does not accept the Council's assertion that lack of provision of a link between BOATs AMES 11 and 12 for motorised users will increase use of these byways by motor vehicles. This is discussed further in the Applicant's Deadline 4a submission and its summary of submissions at ISH 6 [REP4-034].

	<p>should not leave them to be resolved after the event by the local highway authority, but instead take the opportunity to resolve them before they become a problem by the inclusion of solutions within the DCO. Wiltshire Council considers that the concerns could be overcome through the use of appropriate prohibition of driving orders and has proposed that an additional Schedule be included in the DCO to provide for this.</p>	
7.1.16	<p>(810 – the EA) There is inconsistency with regards the need for consultation with Wiltshire Council on documents such as the Flood Risk Management Plan (MW-WAT12), the Groundwater Management Plan (MW-WAT10), the Soils Management Strategy (MW-GEO3) and site drainage (MW-WAT3).</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
7.1.17	<p>(822 – Morrison & King) Regarding paragraph 37.2.6 in HE's response, action / commitment MW-GEO3 in the OEMP states that the main works contractor shall produce a Soils Management Strategy. Wiltshire Council requests that it be consulted in the preparation of the strategy as the movement of soils and construction activities could impact the drainage characteristics of an area and increase flood risk.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
7.1.18	<p>(840 – Trail Riders Fellowship) HE's traffic counts were taken with the A303 as a heavily trafficked trunk road open to all vehicles and with 'no-right turn' orders in place limiting movement between Byways 11 and 12. With the A303 decommissioned, there could be an entirely different demand for the use of these byways and a link between them, from motorcyclists. Wiltshire Council considers that by comparison with other motorised vehicles, motorcyclists on these byways present a low safety risk to non-motorised users and cause little damage to the surface, do not present the same long-term overnight camping issues and have far less visual impact. For these reasons, the Council has concluded that while there is a need to exclude motor vehicles from using the byways (and there being no</p>	<p>As set out at in the oral submission of ISH6 [REP4-034], Highways England has balanced a number of factors – the aims of WHS Management Plan (including Aim 6 which is stated to be a 'reduction in sight and sound of vehicles in the WHS', which plainly embraces motorcycles), potential impact of the loss of a link on users, the benefits of the loss of a link in terms of OUV and other heritage matters, and the consideration of other assessment disciplines, in bringing forward proposals which do not include a link between Byways 11 and 12.</p> <p>From TRF's user evidence forms it is apparent that the ban on right turns onto or off A303 does not significantly influence the use of the byways by motorcyclists. There is no evidence that there will be an increase in motorcycle use of byways 11 and 12.</p>

	<p>need to provide a linking route), the exclusion does not need to include motorcycles in order to resolve the major vehicular issues. It is clear that HE do not consider that the DCO can include changes to the status of the byways, but the Council considers that the DCO can make provision for prohibition of driving orders that would resolve many of the adverse effects of what will otherwise be an increase over the existing levels and problems of motor vehicle use. Although HE are unwilling to include solutions within the DCO, preferring to leave them to be addressed by the local highway authority once the Scheme has been delivered, Wiltshire Council has proposed that an additional Schedule could and should be included in the DCO to resolve these issues before, instead of after, they become a problem.</p>	<p>Further submissions on this matter are set out in the Applicant's Deadline 4a submission [REP4a-001].</p>
7.2	Comments on Written Question responses	
	Matter Raised	Highways England's Response
7.2.1	<p>DCO.1.30: As per our previous comment at Deadline 3, with regard the vertical limit of deviation affecting infiltration features, HE must ensure a minimum of 1m clearance between the base of the feature and the maximum groundwater level, taking into account seasonal variations. This is to prevent rising groundwater from reducing the available storage capacity, and to ensure a sufficient depth of unsaturated material for effective operation.</p>	<p>In line with the Environmental Statement [APP-281], the preliminary design invert levels for infiltration systems have been specified at a minimum of 1m above the maximum recorded groundwater level. This is set out in para 2.4.4 of the Road Drainage Strategy [REP2-009] and secured through requirement 10 of the draft DCO [REP4-018].</p>
7.2.2	<p>DCO.1.70: HE's response states that site clearance is part of the preliminary works, and that the preliminary works will be carried out in accordance with the preliminary works OEMP (REAC table 3.2a of the OEMP). Wiltshire Council requests that table 3.2a includes an action / commitment for site drainage, similar to what has been included in REAC table 3.2b ref MW- WAT3 for the main works, that states "water flows from sites will be limited during construction to</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

	existing runoff rates, unless otherwise agreed with Wiltshire Council and the EA in accordance with relevant legislation".	
7.2.3	<p>Fg.1.25: Section 7.2.5 - 7.2.7 in Appendix 11.4 Groundwater Risk Assessment of the ES states that groundwater monitoring (both level and quality information) will be undertaken during a baseline period, construction, and a minimum 5-year period post construction. This information will be invaluable to confirm that the design is functioning as intended and any required mitigation works. The ongoing monitoring will provide confidence in the groundwater modelling outputs and inform the detailed design and Groundwater Management Plan for construction. Wiltshire Council requests that the scope and detail of the monitoring (number, location, ownership, maintenance, etc.) be agreed with ourselves and the EA when developing the Groundwater Management Plan. Wiltshire Council should also be consulted in the preparation of the Groundwater Management Plan (MW-WAT10 in the OEMP), as the Council is the statutory authority leading on groundwater flood risk management.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
7.3	Comments on Local Impact Report response	
	Matter Raised	Highways England's Response
7.3.1	<p>4.25 and 6.11: Wiltshire Council considers that HE should acknowledge that an effect of the Scheme as a whole will be likely to increase the volume of motorised vehicle traffic using the byways, as a means of getting closer to the Stones and parts of the WHS without having to walk, cycle or ride a horse. While HE states here that changing the status of the byways is beyond the scope of the Scheme, the Scheme does include changing the status of another BOAT (AMES 1) to a footpath and upgrading bridleway BSJA3 to at BOAT. Wiltshire Council is requesting not that the status of BOATS</p>	<p>As stated in the Applicant's Deadline 4a submission and its summary of submissions at ISH 6 [REP4-034], Highways England considers that it is for Wiltshire Council to bring forward their proposed changes if they so desire them, to allow them to be fully examined, and to consequentially allow the ExA to recommend, and the SoS to decide in what way it wishes to make the DCO in a legally acceptable fashion.</p> <p>See also response above to paragraph 7.1.15.</p>

	AMES11 and AMES12 is changed under the Scheme, but that a prohibition of driving of motor vehicles by the public (other than motorcycles) is placed upon them under the Scheme.	
7.3.2	<p>5.30, 5.31 and 6.10: The Council notes the comments from HE, although does not accept the position stated. The Council's position with regard to the byways is set out within previous submissions and the legal submission submitted at this deadline (Deadline 4).</p> <p>The Council does also not agree with the comment regarding access from the southern end of AMES11. See comments made above at para 2.1 [paragraph 7.3.1] relating to 4.25. HE's response may be relevant whilst motorised traffic has access to the northern end of byway AMES11 from the A303, that will not be the situation if the Scheme goes ahead. The Scheme will change the way in which byway AMES11 is used from its southern end.</p>	<p>Please see the Applicant's Deadline 4a submission [REP4a-001] on this matter which sets out why the Applicant does not agree with Wiltshire Council's proposed amendments. This builds on its response to agenda item 4.9 – 4.12 in the oral submission report from Issue Specific Hearing 6 regarding traffic and transport [REP4-034].</p> <p>See also response above to paragraph 7.1.1.</p>
7.3.3	<p>6.13: Wiltshire Council acknowledges the response. However, queries whether HE have considered whether the trees are of sufficient value in their own right and within the landscape to outweigh the safety benefits to users of creating the additional width required for a restricted byway.</p>	<p>Highways England has balanced a number of factors including likely use by carriages, the landscape and biodiversity impact of the loss of the tree belt, and the consideration of other assessment disciplines, in bringing forward proposals which do not include a restricted byway south of byway BSJA9.</p> <p>As part of the application, these referenced trees were included in the Arboricultural Impact Assessment [APP-230] and rated as mostly category B (moderate quality and value) groups with some category C (low quality and value) trees. In terms of landscape character, the trees are part of the vegetation pattern adjacent to the A360, which is a characteristic of the road networks being bordered by vegetation in contrast to the open character of the agricultural land uses. This vegetation cover aids in reducing the visibility of vehicles on the road network to varying degrees. Therefore, the vegetation does have a landscape value, both in terms of its character and as individual trees.</p> <p>There are bat roosts in the area and there are so few tree lines in the WHS that those that are present are likely to have some value for bats in this largely open landscape, with potential for foraging and commuting. It is</p>

		<p>therefore preferable that the trees are retained here at the boundary of the WHS.</p> <p>There is bat activity on byway 12 (especially serotines) and high activity around the woodland west of A360 near Druids Lodge. It is therefore likely that bats use the trees on both sides of the A360.</p>
7.3.4	<p>9.15 and 9.21: In light of comments made at the hearing on Tuesday 11th June in connection with Private Water Supplies, the Council would make the following additional comments:</p> <p>The Council is concerned that the hydrologist for HE appeared to indicate that water sampling was not based on Drinking Water Standards. There are a number of private water supplies in the locality, most notably the reservoir located north of the main compound and that serving the Stonehenge Visitor Centre. Regard must be had to ensuring that development activities do not compromise the potability of supplies used for human consumption and therefore it is expected that water sampling be undertaken proactively to ensure that the potability of such supplies is not compromised during the construction phase.</p>	See response above to paragraph 7.1.3.
7.3.5	<p>9.18: The Council notes HE's comment with regard to the Noise Insulation Regulations 1975. The Council would be obliged to receive the results of the survey undertaken.</p>	As the Applicant is required to do, the Noise Insulation Regulations 1975 assessment will be completed in accordance with the procedures and timescales set out in those regulations.
7.4	Comments on Drainage Report	
	Matter Raised	Highways England's Response
7.4.1	<p>Finding 4 has not been addressed in the documents provided at Deadline 3.</p>	<p>A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been</p>

		adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.2	Finding 5 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.3	Finding 7 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.4	Finding 8 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.5	Finding 9 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.6	Finding 11 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.7	Finding 13 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Finding has been adequately addressed. Wiltshire Council will submit the details at the next Deadline. Separately, the Applicant notes that the ground treatment to be used will require EA approval, as per OEMP item MW-WAT9.

7.4.8	Recommendation 1 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Recommendation has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.9	Recommendation 2 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Recommendation has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.10	Recommendation 4 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Recommendation has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.4.11	Recommendation 7 has not been addressed in the documents provided at Deadline 3.	A response was provided to Wiltshire Council. It has been agreed with Wiltshire Council and their peer reviewer that this Recommendation has been adequately addressed. Wiltshire Council will submit the details at the next Deadline.
7.5	Oral Submissions	
	Matter Raised	Highways England's Response
7.5.1	ISH 1 Para 1.1.2 The Council's understanding of the DCO process has matured and the Council agreed that the higher-level strategies should be signed off by the Secretary of State in consultation with Wiltshire Council and other statutory consultees. Below this, for other tiers of documentation, the Council recognised that it is neither necessary nor appropriate for the Secretary of State to approve them, however the Council does not believe that it is appropriate for Highways England (HE) to sign off on its own documentation. The Council considers this a question of proprietary. The Council feels	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.

	that due process should be seen to be done and is therefore uncomfortable with the proposed approach.	
7.5.2	ISH 1 Article 2, para 1.2.1 - The Council expressed concern that some of the things excluded from the definitions may have potential impacts. For example, remedial work on contaminated land conditions could result in extensive impact and site clearance activities could impact on ecology, and depending on what this entails, there could also be an impact on the landscape. The Council indicated that clarity was required, although it did not wish to tie conditions unnecessarily in this regard.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.3	ISH 1 Article 2, para 1.2.2 - With respect to the definition of “maintain”, the Council indicated that if the intention is for it not to go beyond the DCO, it may be sensible for the word “record” to be inserted so that it evidences where the starting point is.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.4	ISH 1 Article 2, para 1.2.3 The Council confirmed that it was pleased to hear that the intention for “ancillary works” would that they would fall entirely within the order limits. The Council suggested that some fine tuning of the language would be helpful to address the confusion, specifically with regard to Article 7. It was suggested that this could be incorporated into the specific definition of “ancillary works”.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.5	ISH 1 Requirement 4, paras 1.10.1 to 1.10.3 regarding approval process for the CEMP and also the role of the respective organisations in respect of specific aspects requiring approval.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.6	ISH 1 Requirement 5, para 1.11.1 - The Council acknowledged that discussions on the DAMS were ongoing. However, as things stand, there is currently no timetable aligned with the public engagement	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version

	strategy contained within Appendix F of the DAMS. Detail is also lacking on when it is submitted or who approves it, and what it is carried out in accordance with. This should be incorporated into the requirement or something along these lines included within the DAMS.	of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.7	ISH 1 Requirement 10, para 1.13.2 - Furthermore, normal procedure would be for a timetable for provision to be added into subsection 2, i.e. for the drainage system to be constructed prior to the Scheme being brought into use. This is what the Council requires.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.8	ISH 1 Additional requirements, para 1.14.2 - The Council believes that a more detailed archaeological requirement is necessary, and the DAMS will need to be revised to ensure that it covers all of the Council's needs. This would include the public engagement strategy previously mentioned at this hearing and it would also be essential to have a strategy for each of the individual sites. The DAMS should be amended to cover these and other comments made in previous written submissions to the Examination.	The Applicant continues to engage with the Council to identify a reasonable and proportionate mitigation strategy. An updated draft DAMS [REP4-024] has been submitted at Deadline 4 (which includes a Public Archaeology and Community Engagement Strategy at Appendix E and the proposed archaeological fieldwork strategies and preservation in situ areas for each Action Area at Appendix D). Meetings with the Council, Historic England, HMAG and the Scientific Committee are scheduled before submission of a further updated version of the DAMS to the ExA at Deadline 6. In terms of the requirement in Schedule 2 of the draft DCO to secure the implementation of the DAMS, as recorded in the Applicant's Written Summaries of oral submissions at ISH1 regarding the draft DCO [REP4-029] page 2-30, it considered that the current draft requirement 5 is sufficient.
7.5.9	ISH 1 Additional requirements, para 1.14.3 - There is a need for an additional requirement to address traffic monitoring and mitigation, which is particularly required to address the potential impact on Amesbury and its town centre.	Wiltshire Council's view is noted. The nature of impacts on Amesbury and its town centre have already been assessed. The Transport Assessment [APP-297] paragraph 6.3.18 explains that the main forecast traffic flow changes in Amesbury arise from stopping up Stonehenge road. Highways England does not therefore agree with Wiltshire Council's view that there is a need for the additional monitoring requirement. Highways England will continue to liaise with Wiltshire Council regarding this matter.

7.5.10	<p>ISH 2, para 2.3.1 - One of the Council's main concerns is the potential impact of the western cutting on the visual setting and OUV of the Winterbourne Stoke, Normanton and Diamond Group of barrows. The Council has requested and are awaiting further visual assessments from HE.</p>	<p>See response to paragraph 7.1.12 above.</p> <p>Highways England is in discussion with the Council to clarify the scope of the additional visualisations – as some of those requested are already presented as photomontages with the Setting Assessment [APP-218] or are being prepared following requests by the Examining Authority. This matter remains under discussion within the Statement of Common Ground with the Council.</p>
7.5.11	<p>ISH 2 para 2.5.2 - Currently, the Council is not content with the extent of archaeological mitigation proposed outside of the WHS. Once the further information requested has been submitted, the Council will need to assess and discuss these issues with HMAG and members of the Scientific Committee. The Council is still some way from being able to provide its full advice on and approval of the draft DAMS.</p>	<p>The Applicant continues to engage with the Council to identify a reasonable and proportionate mitigation strategy. An updated draft DAMS [REP4-024] has been submitted at deadline 4 and meetings with the Council, HMAG and the Scientific Committee are scheduled before submission of a further updated version of the DAMS to the Examining Authority at Deadline 6.</p>
7.5.12	<p>ISH 2 para 2.5.3 - Wiltshire Council considers it imperative that the Council, as local planning authority, can approve and sign-off on all documentation relating to archaeological mitigation and fieldwork. It would not be appropriate for HE to be the approving body in relation to this aspect of the Scheme. A Site Specific Written Scheme of Investigation (SSWSI) should be completed before fieldwork starts. The Council would expect the LPA to approve the document before work starts, sign off following site visits, agree that fieldwork had been completed to standard and at each phase of the Scheme.</p>	<p>Wiltshire Council's view is noted. Highways England is continuing to liaise with Wiltshire Council regarding this matter.</p>
7.5.13	<p>ISH 2 Blick Mead, para 2.6.3 - Whilst the Council does not require monitoring of water levels at the site from an archaeological perspective, the Council considers that monitoring post-construction is required to address, monitor and mitigate flooding concerns. It is not specifically relevant to the Blick Mead site, instead the Council wishes for this post-construction monitoring to be applied for the whole Scheme. However, by undertaking this monitoring, it would serve to address and alleviate those concerns raised by others in</p>	<p>A response to paragraph 7.2.3, which also responds to this point, will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

	relation to the potential impact on the Blick Mead site and its archaeological remains.	
7.5.14	ISH 4 para 4.1.2 - The risk that permanent compaction poses is to change the drainage characteristics of the land, causing more runoff that could lead to flooding. HE has indicated that the mitigation measures will be outlined in the Soils Management Strategy to be developed by the appointed contractor. The Council believes that this could be more clearly stated in the OEMP.	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
7.5.15	ISH 4 para 4.1.3 - MW-WAT3 in the OEMP commits to “water flows from sites will be limited during construction to existing runoff rates, unless otherwise agreed with the Environment Agency in accordance with relevant legislation”. This should include consultation with Wiltshire Council, as the Council is the statutory authority leading on surface water, groundwater and ordinary watercourse flood risk management.	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
7.5.16	ISH 4 para 4.2.4 - Site drainage is dealt with in the REAC Table 3.2b (reference MW-WAT3). In the current wording, there is no mention of consultation with Wiltshire Council for agreeing the strategy, only the EA and the sewerage undertaker are mentioned. As the Council is the lead authority for flood risk management and surface water, the Council must be consulted with regard flood risk and site runoff. This action / commitment within the OEMP will need to be amended to include consultation with Wiltshire Council.	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
7.5.17	ISH 4 para 4.2.11 - Wiltshire Council anticipates that most of the actions should be addressed by the new Flood Risk Assessment (FRA), but the Council has not yet been supplied with the associated modelling outputs. HE has advised that they should be able to provide these within the next week. Without the modelling outputs, the Council is unable to undertake a full review of the updated FRA	The outputs for the pluvial hydraulic model were issued to Wiltshire Council on 13 June. Wiltshire Council have reviewed the hydraulic model, in conjunction with the Flood Risk Assessment. After this review a number of conclusions still remain under discussion and the Applicant continues to

	against the outstanding peer review actions.	engage with Wiltshire Council to reach an agreement upon all conclusions within the Flood Risk Assessment (FRA) [REP3-008].
7.5.18	<p>ISH 4 para 4.2.13 – ‘.....The Council requires HE to provide a 40% allowance in the design, in line with the surface water allowances and EA guidance, however HE is following the Design Manual for Roads and Bridges (DMRB) guidance and providing a 30% allowance with a sensitivity check for 40%. In the Council’s view, this is not sufficient because the 40% allowance would use up the freeboard at ponds (the depth between the top water level and the top of the pond embankment) which removes the factor of safety that freeboard provides and leaves no allowance for uncertainty.</p>	<p>This was addressed in the oral submission report from ISH4 regarding Flood Risk, Groundwater, Geology and Waste, Section 6.4 Climate Change Allowance [REP4-032].</p> <p>The updated Road Drainage Strategy [REP2-009] states in 3.24 that an allowance of 30% was used in the preliminary design of the basins as DTAs. The updated FRA [REP3-008] states in 5.3.10 that the surface water flood risk assessment used an allowance of 40%. When assessed using this allowance, the road drainage basins were found to contain the design storm without overtopping.</p> <p>The following built-in measures are proposed:</p> <ul style="list-style-type: none"> • In the event of a rainfall event exceeding the design storm (1 in 100 year +30%) exceedance routes have been identified to ensure excess water does not flow towards vulnerable properties (3.2.4 of the Road Drainage Strategy). • The basins are designed based on an infiltration rate one twentieth of the lowest rate corresponding to the soakaway test closest to the area. (2.4.4 of the Road Drainage Strategy). • The basins include a 300mm freeboard (3.2.4 of the Road Drainage Strategy). When tested with an allowance of 40% the remaining freeboard is more than 250mm at each drainage treatment area. <p>There is, therefore, sufficient capacity within the preliminary design of the road drainage strategy, west of the tunnel, to manage storm water runoff safely.</p> <p>In the event that the national guidance changes before detailed design is carried out, this would be considered. Similarly, if additional measures are required in the future, there is space to do this.</p> <p>The changes in the overall dimensions of the DTA are small, for example the change in climate change allowance from 30% to 40% impacts the freeboard</p>

		<p>only by a reduction of 50mm. This could be mitigated by reducing the invert level by approx. 50mm keeping, the footprint area the same. Each DTA has a boundary width allowance of some 6m for maintenance access and to cater for design changes.</p> <p>The physical changes in the overall dimensions, or footprint of each DTA is small, therefore there is capacity to enlarge the basins or Drainage Treatment Areas within the proposed Red Line Boundary.</p> <p>Given the current measures incorporated in the illustrative design and the capacity to include further measures, Highways England concluded that it was not necessary to incorporate the upper end allowance. It did however decide to increase the allowance beyond the central allowance: from 20% to 30%, as a further precautionary measure.</p> <p>A meeting was held on 20th June 2019, part of the ongoing consultation with Wiltshire Council, (attended by Highways England and the Environment Agency), to discuss outstanding points concerning surface water drainage and flood risk, including the sharing of technical notes.</p>
7.5.19	ISH 4 para 4.3.2 regarding contaminants, The Council will work closely with the EA on this issue. The Council requires to be consulted on the Soils Management Plan, and notes that at the moment it isn't.	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
7.5.20	ISH 4, para 4.3.5 - With respect to Requirement 7, the Council requires a minor drafting amendment so that it states, "in the event that contamination of land and / or groundwater is identified at any time..." rather than the current wording which seemed confused.	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
7.5.21	ISH 6, para 6.2.7 to 6.2.11 - In conclusion, the Council considers that the current problem of turning AMES 11 into a cul-de-sac needs a more sophisticated solution than that proposed at present.	Please refer to the response to Wiltshire Council's and Trail Riders Fellowship Legal Submissions on Potential Changes re Byways 11 and 12 submitted at Deadline 4a [REP4a-001].

7.5.22

ISH 6, para 6.2.22 The Council is concerned that if the point of the stopping up of Stonehenge Road is changed from that currently proposed in the DCO, to a point at the junction of the Woodford Valley Road at West Amesbury, then parking could be displaced from a cul-de-sac all-purpose road, with little frontage development, to a live road, near a sharp bend, and where, on Stonehenge Road, there is frontage development to the south side of the road. This could be detrimental on both road safety and amenity grounds.

Adjacent landowners have proposed that the start of the restricted byway is moved south to the junction of the Woodford Valley Road at West Amesbury, citing potential problems including parking, anti-social behaviour and fly-tipping if the road is turned into a cul-de-sac as proposed in the DCO. However, Highways England does not intend to amend the draft DCO in this area, as Wiltshire Council has the powers to control these issues.

8 Amesbury Museum and Heritage Trust (REP4-045) and Andrew Rhind-Tutt (REP4-074)

8.1	Additional Submission	
	Matter Raised	Highways England's Response
8.1.1	<p>It would still appear from the unsatisfactory responses given to date that the presentation and handling of the covenants laid out in the deeds dated 31st December 1915 is being withheld and delayed.</p> <p>I would like to know what “searches” have been undertaken to locate these precious documents and why Highways England believe that there is no evidence the covenants have been applied?</p>	<p>In relation to the availability of the 1915 covenants, Highways England is only in a position to reiterate the information already provided in its Deadline 1 submission letter [REP1-001], repeated below for ease of reference:</p> <ol style="list-style-type: none"> 1. <i>Highways England has endeavoured, without success, to locate a copy of the 1915 covenants contained in the transfer of Stonehenge to Sir Cecil Chubb and his wife on 31 December 1915. No documents held at HM Land Registry in respect of land adjoining Stonehenge would appear to reference the 1915 conveyance to the Chubbs; and the land/property comprising Stonehenge itself is not registered.</i> 2. <i>Research revealing the response from English Heritage to a Freedom of Information requests received in 2018 indicates that no title land deed exists. In English Heritage's response the only document referred to in relation to the provenance of Stonehenge as a national monument is the 1918 Deed of Gift from Sir Cecil Chubb and his wife to the Commissioners of Works.</i> 3. <i>Furthermore, whilst there exists a transcript/summary of the 1915 auction notes taken at the time of Sir Cecil's purchase of Stonehenge, the transcript merely notes that, as a condition of the sale, the purchaser (i.e. Sir Cecil) “ would be required to ... (illegible) ...to the satisfaction of the vendor's solicitors and maintain a fence on the western boundary of ... (illegible) ...so as the fence exists at present”. The transcript includes no reference to any restriction or restrictive covenant on the use of the land so conveyed.</i>

		<i>It will be clear from the above that Highways England's position as regards "the 1915 restrictive is that there is no available information or existing evidence which would have the effect of restricting Highways England's current proposals to improve the A303 between Amesbury and Berwick Down, in the vicinity of Stonehenge.</i>
8.1.2	On this basis the Trust would like Highways England to demonstrate why the A303 construction in 1967 was restricted to single lane alongside the Stone circle without disturbing the surrounding World Heritage Landscape?	Highways England notes that Stonehenge and Avebury were inscribed on the UNESCO World Heritage Site list in 1986, following the construction of the previous road scheme constructed in the 1960s. Whilst it is not possible for Highways England to comment on the effect of the 1960s on the surrounding landscape at that time, we understand that the purpose of that previous scheme carried out on the A303 in the late 1960s was to provide a bypass of Amesbury, therefore that its extent would have been determined according to this remit. The 1960s scheme did not have a wider objective of upgrading the A303 to the west of Amesbury, which the presently proposed Scheme does.
8.2	Additional Submission (Andrew Rhind Tutt)	
	Matter Raised	Highways England's Response
8.2.1	<p>I refer to my presentation on Thursday 13th June 2019 to the Planning Inspectorate where I discussed the issues and impact of contraflows causing delays and diversions of traffic travelling to the Stonehenge Visitor Centre within the World Heritage Site.</p> <p>At the end of my presentation it was suggested that there would now be a contraflow immediately East of the new grade separated Long barrow junction.</p> <p>If this is now the proposal, I would like to know how this contraflow junction and lane change (within the alignment of the Winterbourne Stoke barrow clumps) East of the A360 can be achieved without any temporary and permanent lighting, such as gantry signs, temporary</p>	<p>Two cross-over facilities are proposed, one east of Longbarrow junction and one within the junction. These are indicated on Sheet 5 of the Engineering Section Drawings (Plans and Profiles) [APP-010]. This will enable safe exit from the A303 to the A360 during contraflow in either bore.</p> <p>See agenda item 6 in the written oral submission for ISH6 regarding traffic and transport [REP4-034] which sets out Highways England's position in respect of the contra-flow in more detail.</p>

	signs, temporary lighting disturbing the World Heritage Landscape and night sky and how it can deliver a safe fast flowing traffic solution when the distance available for traffic to change lanes and exit for the visitor centre or North / South routes is reduced to less than 600m.	
8.2.2	Further, I would like to know how large HGV freight traffic Eastbound leaving Larkhill, or the A360 will safely access the A303 at times when the tunnel is closed.	<p>During closure of the west bound (southern) bore, east bound traffic, including HGVs will be able to access the A303 at either Longbarrow or Countess junctions.</p> <p>When the east bound (northern bore) is closed, it will not be possible to join the A303 eastbound at Longbarrow Junction. Drivers wishing to make this turn would be signposted to use the diversion route through Larkhill along the Packway, joining the A303 at Countess junction.</p> <p>See agenda item 6 in the written oral submission for ISH6 regarding traffic and transport [REP4-034] and item 5.6 in Highways England's written summary of the Open Floor Hearings held on 22 and 23 May 2019 [REP3-012] which set out further information in respect of tunnel closure.</p>
8.2.3	Please explain what routes Home Bargains HGV lorries with 16ft high trailers will use to comply with their planning conditions which prevents the use of the alternative routes suggested in Highways England's proposals	16ft high vehicles would be catered for in the tunnel and on the diversion routes. See Mr Taylor QC's response to Mr Noake which was given at ISH6 and was recorded at the end of section 6.1 (page 27) in the written oral submission for ISH6 regarding traffic and transport [REP4-034].

9 Barry Garwood (REP4-064)

9.1	Additional Submission	
	Matter Raised	Highways England's Response
9.1.1	<p>Although the Applicants are happy to assert that 'Mesolithic deposits were probably removed before embankment construction', the fact is that the embankment is built up on the site and Mesolithic archaeology is likely to exist under the modern A303.</p>	<p>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 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>"</p> <p>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>Please see response to agenda items 4(i), (ii) and (iii), from ISH2 regarding Cultural Heritage [REP4-030] for more detail.</p>
9.1.2	<p>The Works Compound and adjacent Slurry Treatment Site leave open the question: What will be left after they have gone?</p>	<p>Once the construction requirements of the Works Compound and Slurry Treatment Site are completed, all plant, materials, equipment, temporary buildings and vehicles not required during subsequent activities are to be removed from the site and that land is restored to its former use or in accordance with the requirements of design as appropriate, and that temporary access points are removed or downgraded as appropriate. This is set out in the Outline Environmental Management Plan (OEMP) [REP4-020]</p>

		section MW-G30. An updated version of the OEMP will be submitted at Deadline 6.
9.1.3	The area to the west of Longbarrow Cross Roads is archaeology rich. It is likely that any archaeology in these locations will be lost or degraded. In particular it is known that Stonehenge Chalk includes unique Phosphatic Chalk that includes natural radioactive elements. No detail has been given on how this will be dealt with, or whether any radioactive material will be used for landscaping.	<p>Archaeological remains will be protected from all risks, including that of the disturbance from Phosphatic Chalk, through the measures set out in the DAMS and OEMP</p> <p>This is summarised in items 10.2.30, 12.3.126 and 20.5.19 in the Comments on Written Representations [REP3-013].</p>
9.1.4	<p>It was suggested by Highways England the previous day that the portal could be moved to lessen the impact on Vespasian's Camp.</p> <p>This would reduce the height to below the water table level at Blick Mead, given that the retaining walls are stated as being constructed down to 64.3m above AOD in the Environmental Statement (ES Appendix 11.4, Table 6.1).</p>	<p>The locations of the eastern and western portals in the proposed Scheme have been identified as the optimum locations when all environmental, technical and economic considerations are taken into account. Highways England does not propose to move the portals by any more than allowed for in the limits of deviation provided for in the DCO. The limits of deviation for the eastern portal and associated works would permit it to deviate in an easterly direction up to 30 metres or in a westerly direction by up to 1 metre from the location shown on the Works Plans [APP-008].</p> <p>This limit of deviation has been assessed in the Environmental Statement [APP-282] Annex 5, Table E-3, ID C05 06. The impact has been assessed as being negligible because, taking into account the limit of deviation, no structures are proposed within sufficient proximity of Blick Mead that could give rise to significant effects.</p>
9.1.5	<p>Both the raised Countess Flyover and particularly the embankments around Winterbourne Stoke will result in high level traffic shining headlights across the landscape. In addition, traffic volume and hence light can be expected to increase considerably.</p> <p>This will result in a negative effect on viewing the night sky. Even where there is no direct line of sight of traffic there will be more background light, as atmospheric effects will cause the artificial light to refract and reflect.</p>	<p>The raised Countess Flyover is bordered by 1.8metre high acoustic barriers and the proposed A303 road alignment is bordered by a false cutting (bund) across the embankments around Winterbourne Stoke in addition to new woodland and hedgerow planting as indicated on the Environmental Masterplan. Therefore, there will not be a high level of traffic shining headlights across the landscape due to these features adjacent the proposed road.</p> <p>See response to items 26.4.4 and 43.6.1 in the Comments on Written Representations [REP3-013] and responses on pages 5-19, 25-1 and 25-2 in the Relevant Representations Report [AS-026].</p>

9.1.6	<p>The effects of Climate Change are not being taken seriously. Politicians and planners need to listen to science and scientists. A 16 year old schoolgirl could tell you that.</p>	<p>The Applicant rejects this comment and considers that climate change has been extensively assessed as part of the Scheme documentation, in particular noting that the effect of the Scheme on climate was considered as a standalone chapter in the Environmental Assessment accompanying the Scheme application (See ES Chapter 14, APP-052).</p> <p>For more detail on the Scheme in the context of the recently declared "climate emergency" (which the Applicant understands this comment to relate to, at least in part), please see the Applicant's response to item 2.1.1 in the Comments Received at Deadline 3 [REP4-036].</p>
9.1.7	<p>Slurry removed from the tunnel may be dried but will become wet again when deposited and is likely to be compacted by its own weight and the machinery used to deposit it.</p> <p>It is likely to create an impermeable layer with implications for drainage.</p>	<p>The characteristics of the tunnel arisings following placement have been taken into account in the development of the drainage of the Scheme.</p> <p>See also the response to item 43.5.7 in the Comments on Written Representations [REP3-013] regarding compaction (which sets out that this will be able to be managed as part of the construction of the Scheme) and also the response to item 6.1.2 in the Comments Received at Deadline 3 [REP4-036], which reports on flood risk.</p>
9.1.8	<p>There is currently access from the A303 and I question whether there have been any incidents that have resulted in accidents?</p>	<p>There were two slight and one serious recorded accidents at the Allington Track junction with the A303 between 2007 and 2016.</p>

10 Avebury Society (REP4-046)

10.1 Comments on Written Representations Report		
	Matter Raised	Highways England's Response
10.1.1	Our concerns were expressed in relation to erosion that already occurs from over-visiting at Avebury and that increased visitor footfall arising from less easy access to Stonehenge would exacerbate an already serious problem which is not resolved according to best practice.	<p>The Applicant notes the Avebury Society's concern, however there is not expected to be an indirect impact on Avebury. We refer to Highways England's response to Written Representations [REP3-013, para 27.4.7], which states: <i>"However, it is pertinent to note that the characteristics of visitors to Stonehenge and Avebury are distinct; those visiting Stonehenge are often either from the international market, visiting iconic tourist attractions, or part of an organised tour; those visiting Avebury are often more dedicated, in-country visitors interested in the prehistoric period and its monuments. As the existing A303 will remain open throughout construction, and because of the different nature of visitor each site attracts, it is not anticipated that visitors and tour operators will change their tour schedule to visit Avebury rather than Stonehenge during construction, or following scheme opening and in the operational phase. It is therefore expected that the construction or operation of the Scheme will not have an indirect impact on Avebury."</i></p> <p>Regarding the management of footfall and visitors at Avebury currently, this is beyond the scope of the Scheme.</p>
10.1.2	We note the 'warm words' about future allocation of resources relying upon the partnership of the NT and English Heritage. This is a matter of concern to us, bearing in mind the relative silence of these two organisations during the Examination on many critical matters, not least the importance of the recent discoveries at the western end of the proposed tunnel and ignoring the advice of UNESCO.	Highways England notes this item however makes no response as the comment is understood to be directed to The National Trust and English Heritage.

<p>10.1.3</p>	<p>The World Heritage Centre/ICOMOS advisory missions consider that the scheme would damage the OUV of the WHS which means that it would not be sustained. The report of the advisory bodies to the World Heritage Committee in 2019 agrees - as does the Draft Decision prepared for the Committee's consideration (ref. 27.1.6). Highways England's application documents indicate that the scheme is low value for money and would be poor value for money without the monetary benefit of a wholly unconvincing heritage valuation survey which did not ask participants what value they would place on removing the A303 from the WHS (ref. 27.1.6-8).</p> <p>The balancing exercise for the scheme overall should obviously include the cost benefit analysis, since the cost of the scheme is crucial to consideration of any benefits it might be suggested to have (ref. 27.1.9).</p>	<p>With regards to recommendations of UNESCO / ICOMOS and the World Heritage Committee, Highways England has previously fully considered these in relation to the Scheme, which is the subject of this DCO application, which includes various features and controls that have been put in place in response to those recommendations. For example: the route alignment has been selected as the preferred route avoiding the winter solstice sunset alignment and the bisecting of the Diamond Group; setting the road in deep retained cuttings to minimise landtake; determining the length of the tunnel to avoid the Scheduled Monument known as the Avenue (NHLE 1010140) at its eastern end and a Bowl barrow south of the A303 and north west of Normanton Gorse (NHLE 1010832) at its western end – the tunnel length has been extended to 2 miles (or 3km) in length; the further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal to further extend the tunnel (to almost 3.3km) to aid landscape integration; the optimization of the positions of the tunnel portals at the head of dry valleys in the landscape; in order to reduce the length of cutting (and minimise the length of the culvert part of the tunnel in the western approaches) the addition of the 150m long land bridge to maintain physical and visual connectivity between the Winterbourne Stoke Crossroads Barrows and the Diamond Group; the removal of the surface A303 into a tunnel and approach cuttings to reduce noise and improve the tranquillity of the WHS; in order to minimise light spill measures have included no lighting of the new Longbarrow Junction or the approach cuttings, new directional lighting at Countess Junction replacing the existing non-directional lighting, lighting of the portals would be designed to minimise light spill out in to the WHS landscape and lighting under the land bridge will only operate during daylight hours; and to minimise the visibility of new infrastructure within the WHS signage and other highways installations will sit completely within the approach cuttings and not extend above them). Highways England (and DCMS in its State of Conservation Report submitted to the World Heritage Centre in February 2019) has explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the WHS, and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified (see [REP1-015]). Highways England continues to work closely with heritage stakeholders, and will continue to report to and engage with UNESCO / ICOMOS and the World Heritage Committee through DCMS.</p>
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		<p>With respect to the decision formally adopted by the World Heritage Committee in July 2019, as recorded with respect to Agenda Item 3(v) in the Written Summary of oral submissions from the hearing [REP4-030], Mr Nichol of DCMS reported at the hearing that the view of DCMS was that the then draft decision amplifies the perceived negative impacts of the Scheme and does not adequately reflect the extent to which the World Heritage Committee's 2018 decision has been taken into account by DCMS as the State Party and Highways England.</p> <p>With regards to the Scheme being poor Value for Money without the monetary benefit of the contingent valuation survey, this not correct. Irrespective of whether the impact on the WHS is monetised, it is a real impact that must be considered either qualitatively or quantitatively within the assessment of value for money. Negative impacts on the WHS are included in this overall assessment alongside the positives. The contingent valuation survey provides good supporting evidence alongside all other sources of cost and benefit, both quantitative and qualitative, that the scheme can be expected to deliver Low Value for Money.</p> <p>With regards to the balancing exercise, see Highways England's response to agenda item 3.vi in the oral submission report from ISH2 regarding Cultural Heritage [REP4-030] which explains the overall balancing exercise against public benefit. This is also set out in the Applicant's Case for the Scheme and NPS accordance [APP-294].</p>
10.1.4	<p>The scheme does not meet the requirements of Article 4 of the World Heritage Convention or the vision and purpose of the Management Plan to protect the WHS (ref. 27.1.10). It does not conform to the requirements for protection of the cultural heritage of the WHS in the NSPNN (ref. 27.1.11) or local plan policy for the WHS (Core Policy 59) (ref. 27.1.13). If all these constraints are ignored at Stonehenge, then they could also be ignored at unknown cost to Avebury. Plans for an Avebury bypass, mooted over 40 years ago, were scrapped because of the sensitivity of the archaeological landscape even before it was designated a WHS. If the archaeological landscape of Stonehenge is damaged, then a precedent would be set for any renewed proposals for an Avebury bypass or any other major</p>	<p>See response to agenda item 3.vi and 4.iii in the oral submission report from ISH2 regarding Cultural Heritage [REP4-030] and response to item 27.1.5 in the Comments on Written Representations [REP3-013] which explains how the Scheme meets the requirements of Article 4 of the World Heritage Convention, the WHS Management Plan, the NPSNN and local planning policy.</p> <p>With regard to compliance with the Government's obligations under the World Heritage Convention, we would refer the Avebury Society to the Applicant's response to the Examining Authority's Written Question G.1.1 [REP2-021, page1-2 to 1-5]. In brief, the Applicant refutes the statement that the Scheme does not comply with UK obligations under the WHC. The UK has taken the steps required by Articles 4 and 5 by putting in place the UK legal and policy</p>

	<p>development proposal at some future date. So far, no such proposals at Avebury have received planning consent.</p>	<p>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. As demonstrated by Case for the Scheme and NPS Accordance [APP-294], the Scheme is in compliance with the NPSNN. The Heritage Impact Assessment submitted with the application [APP-195] demonstrates that, overall, the OUV of the WHS would be sustained. In line with Articles 4 and 5 of the WHC, the Scheme and any decision to grant consent for it would not put the UK in breach of the duty to protect and conserve the cultural and natural heritage of the WHS.</p> <p>The Applicant has set out throughout the Scheme documentation and responses to comments how the OUV is to be sustained and the WHS protected.</p> <p>The WHS Management Plan (Simmons & Thomas 2015, p. 8, http://www.stonehengeandaveburywhs.org/management-of-whs/stonehenge-and-avebury-whs-management-plan-2015/) sets out the Vision for the Stonehenge and Avebury World Heritage Site as follows:</p> <p><i>"The Stonehenge and Avebury World Heritage Site is universally important for its unique and dense concentration of outstanding prehistoric monuments and sites which together form a landscape without parallel. We will work together to care for and safeguard this special area and provide a tranquil, rural and ecologically diverse setting for it and its archaeology. This will allow present and future generations to explore and enjoy the monuments and their landscape setting more fully. We will also ensure that the special qualities of the World Heritage Site are presented, interpreted and enhanced where appropriate, so that visitors, the local community and the whole world can</i></p>
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better understand and value the extraordinary achievements of the prehistoric people who left us this rich legacy. We will realise the cultural, scientific and educational potential of the World Heritage Site as well as its social and economic benefits for the community."

Many of the elements of this Vision are not within the remit of Highways England, in particular, elements such as WHS presentation, interpretation, engagement and transmission – which are the remit of heritage partners. The harmful impacts of current roads and traffic on the WHS are described in the Applicant's response to the Examining Authority's Written Question AL.1.20 (iii) [REP2-024]. With regards to the Vision's aim to "allow present and future generations to explore and enjoy the monuments and their landscape setting more fully", the Scheme provides the opportunity to enhance physical access, linking Stonehenge to the wider landscape.

The stated primary aim of the WHS Management Plan's strategy is "to protect the Site to sustain its OUV as agreed by UNESCO, provide access and interpretation for local people and visitors, and allow its continued sustainable economic use." The cultural heritage assessment, ES Chapter 6 [APP-044] and an accompanying Heritage Impact Assessment, ES Appendix 6.1 [APP-195], Section 12.3, ("Alignment with WHS Management Plan vision, aims and policies"), considers the ways in which the Scheme delivers against these aims as well as the policies as set out in the 2015 WHS Management Plan more generally.

The Scheme design has been developed having regard for the aims and policies set out in the 2015 WHS Management Plan as well as the potential impact of the Scheme on the World Heritage Site and its OUV. One of the fundamental objectives of the Scheme, as stated in the Case for the Scheme [APP-294] is to help conserve and enhance the WHS. Heritage considerations have been afforded the highest priority throughout the development of the Scheme, informing the choice of preferred route and influencing the design of the Scheme, geared towards delivering this objective. The preferred route for the Scheme was selected to sustain OUV, by avoiding the archaeological remains and, important sites and monuments that contribute to the OUV of the WHS. Subsequent careful and sensitive design development, including mitigation measures to limit or avoid impacts, has been informed by ES Appendix 6.9 - Cultural Heritage Setting

		<p>Assessment [APP-218] and ES Appendix 6.1, Heritage Impact Assessment (HIA) [APP-195]. Further details of how the Scheme has been developed to avoid and minimise adverse impacts on cultural heritage and to protect or enhance the setting of the WHS are provided in ES Chapter 6, Cultural Heritage [APP-044], Section 6.8, Embedded Mitigation, and Table 6.9.</p> <p>With regards to NPSNN compliance, this is as set out in the Applicant's Case for the Scheme and the NPS Accordance Table [APP-294].</p> <p>With regards to compliance with local plan policy including Core Policy 59, the Applicant explained at Issue Specific Hearing 2 agenda item 3 (iii) [REP4-030] 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]. The Applicant 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 Wiltshire Council, who submitted that overall the balance is in favour of the Scheme.</p> <p>Finally, the Applicant wishes to note that no scheme will be able to set a precedent for a following scheme. Under both the Town and Country Planning Act 1990 and the Planning Act 2008 regimes, each application must be considered on its own merits.</p>
10.1.5	<p>The application documents failed to supply adequate information on alternatives, the natural environment and, until very late in the day, archaeological evaluation. We note the overwhelming number of objections to the scheme from respondents, even if their views were "taken into consideration". We have not been invited to join the Local Community Forum and presume that it does not include Avebury representatives (ref. 27.3).</p> <p>Highways England has provided no visitor survey at Avebury to support their erroneous assertions about the visitor-profile (ref. 27.3.1).</p>	<p>The application for development consent submitted by Highways England was accepted by the Planning Inspectorate, on behalf of the Secretary of State for Transport, who, after the 28-day formal acceptance period, concluded that it met the standards required to progress to examination. As part of the consideration to formally accept the application for examination the Secretary of State needed to have been satisfied that the application documents contained adequate information on the Scheme.</p> <p>The A303 Stonehenge Scheme Community Forum provides a way for Highways England to engage with communities local to the A303 Stonehenge scheme. It is a forum for local bodies/groups to get up-to-date information about the scheme, feedback any local issues, and understand how the scheme will progress. It is independently chaired and represents a broad</p>

		<p>section of the local communities more directly affected than Avebury and other towns and villages similarly farther afield from the scheme. In the context of the World Heritage property, the scheme is engaging via the WHS Partnership Panel and the Coordination Unit, with the Avebury Society being among the partners whose views are being represented by both the Partnership Panel and Coordination Unit. Should the Avebury Society wish to find out more about the Community Forum, they can contact the team by emailing A303Stonehenge@highwaysengland.co.uk.</p>
<p>10.1.6</p>	<p>Key Issue 27.4.1. (Increase in visitor numbers). We could have contributed to the findings had we been asked, likewise Avebury residents (ref. 27.4.3). We consider such information should have been sought by Highways England directly as it would perhaps have corrected the inaccurate assumptions made about the Avebury visitor-profile and numbers (ref. 27.4.7). It is ludicrous to suppose that access around a mile or more away for walkers and cyclists only via rights of way to Stonehenge (where they are not allowed to wander freely among the Stones) would not persuade many to come and park their cars at Avebury where visitors can walk a short distance over the henge and to other monuments without charge. There is no question in our minds that the A303 scheme would result in increased visitor numbers to Avebury and exacerbate the problems we already experience (ref. 27.4.8).</p>	<p>The Applicant notes that the visitor centres at Avebury, at the Avebury henge and stone circles, are managed by The National Trust on behalf of English Heritage; both organisations were consulted regarding current and anticipated visitor flows and characteristics at Avebury during the preparation of the Heritage Impact Assessment [APP-195, paras. 5.5.14–15].</p> <p>Also, in terms of visitor profile data, the differences in the types of visitors to the separate parts of the WHS (Stonehenge and Avebury) are set out in the WHS Management Plan 2015 (WHSMP). Paragraph 2.8.1 of the WHSMP states <i>‘Stonehenge is perceived internationally as a ‘must see’ attraction and around half of its visitors come from abroad. It is one of the most popular sites in Britain for visitors; indeed it is the most visited archaeological site in Britain.’</i> Whilst paragraph 9.1.3 of the WHSMP states <i>‘Both parts of the WHS appeal to many different types of visitor. Stonehenge is a popular destination for coach tours. Over 60% of paying visitors travel to Stonehenge as part of a group. Avebury is less well-known by overseas visitors but receives a number of groups. However, in contrast to Stonehenge in 2012, 94% of visitors travelled independently to the site by car or on public transport.’</i> The ‘Facts and Figures’ section of the WHSMP (page 321) also further illustrate this point. Highways England therefore do not agree that the submissions made to the Examining Authority previously are erroneous.</p> <p>Highways England therefore notes these comments, however for the reasons set out above disagrees with the statement that visitor profile information used in preparation of submissions to the Examining Authority is inaccurate. Highways England also refers to our previous responses [REP3-013, paragraphs 27.4.7 and 27.4.8].</p>

11 Kate Fielding for Stonehenge Alliance (REP4-055, REP4-056, REP4-087 and REP4-095)

11.1	Oral Submissions	
	Matter Raised	Highways England's Response
11.1.1	<p><u>Geotechnical Properties of Chalk Bedrock along the tunnel line: Rock Strength and Stability</u></p> <p>To adequately understand the changes in rock properties (rock strength/RQD, permeability, degree of fracturing, persistence and groundwater flow potential of major fractures and faults) it is essential to adequately examine changes in all these aspects throughout the 3.3km (and possibly up to 0.5km additional distance west and east of each tunnel portal), and up to 1km or more to the north and south of the proposed tunnel line, and perhaps up to at least 100 metres in depth.</p> <p>There is no possibility of thoroughly examining this 4.3 x 2 x 0.1 km block of (predominantly) Chalk rock, with very variable strengths and permeability properties, without creating a 3-Dimensional Ground Model.</p> <p>The present situation, in the opinion of this current specialist expert (GMR) is that all this data is poorly collated, investigated and interpreted, along and around (especially to the north and south) of the proposed tunnel line.</p>	<p>See the Applicant's response to agenda item 5.1 in the Written Summary of Oral Submission from ISH4 regarding Flood risk, Groundwater, Geology and Waste [REP4-032].</p> <p>The Applicant considers that a proportionate approach has been taken to characterise the variable nature of the geology employing experts in this field, including Professor Rory Mortimore, and does not agree that a 3D model is necessary at this stage.</p>
11.1.2	<p><u>Hydrogeological Conditions and Consequences</u></p> <p>It is especially evident to the present author that the proponents of the A303 Stonehenge tunnel project, Highways England and some of their consultants, do not have the necessary in-house expertise to</p>	<p>The groundwater levels provided in AS-015 support the conceptual model that the regional Chalk aquifer is maintaining the wet conditions in the Mesolithic deposits. Rainfall will also provide a mechanism for wetting of the</p>

	<p>fully assess and understand the potential hydrogeological data and the need for site specific groundwater modelling.</p>	<p>Mesolithic deposits. (Section 2.6 of Annex Appendix 11.4 Annex 3 Blick Mead Tiered Assessment [APP-282]).</p> <p>The groundwater levels and rainfall at Blick Mead would not be affected by the Scheme and therefore there is no mechanism for impacts at Blick Mead. Given that no significant effects are predicted at Blick Mead [APP-282] additional investigations into the detail of Blick Mead and site specific modelling would not change the outcome of the assessment.</p> <p>The professional credentials and expertise of the team is provided for all parts of the ES and has been undertaken and reported by competent experts.</p>
11.1.3	<p><u>Hydrogeological Conditions and Consequences</u></p> <p>Groundwater modelling for such a specific high-profile tunnelling project needs to be carried out at an appropriate scale, using the available site-specific data, set in the regional, larger scale context of the local context of Chalk Aquifer conditions. Since much of the proposed tunnelling will now occur below the Chalk groundwater water level, a far more detailed, site specific groundwater model needs to be developed rather than the “Wessex Basin” approach currently adopted and applied by Highways England consultants and the Environment Agency. Nodes (and consequently a groundwater modelling mesh) of 20m, or at worst 50 metre spacings is more applicable and relevant to expected tunnel groundwater flow conditions than the 250 metre node spacing currently adopted.</p>	<p>Modelling has been carried out at an appropriate scale to simulate the effects of the Scheme on regional groundwater flow and sensitive receptors. The modelling has been reviewed by the Environment Agency and Wiltshire Council’s peer reviewers.</p> <p>This model has been refined in the area of the tunnel with aquifer property data from pumping tests and preferential flow horizons have been considered using geological, geotechnical and geophysical data.</p> <p>The model with a 250m grid is conservative because if the tunnel crosses part of a 250m model cell the entire cell is set to block a proportion of flow. In a refined grid with a mesh of 50m or 20m, but less of the aquifer would be blocked and the results would be less precautionary. The precautionary approach to the modelling used is therefore robust and sound.</p>
11.1.4	<p><u>Tunnelling Methods, ground vibration, settlement and subsidence</u></p> <p>Unless ground conditions along the proposed tunnel line (especially the existence of weak unstable, often Phosphatic, Chalk), as well as the permeability and persistence of major fracture zones (as are shown on Figures 9 and 10 on attached presentation), are properly understood, no assessment of the effects of grout migration from tunnelling can be made.</p>	<p>See the Applicant's response to agenda item 5.1 in the Written Summary of Oral Submission from ISH4 regarding Flood risk, Groundwater, Geology and Waste [REP4-032] and the additional information provided in the Post Hearing Note. As noted there, the properties and characteristics of the grout will be carefully selected to limit grout migration, dilution and other effects from groundwater and fissures in the chalk. This would be undertaken in accordance with best practice and as part of the risk management of the tunnelling works, and will be controlled pursuant to item MW-WAT9 of the</p>

	For a full analysis of potential grout migration the physical and chemical properties of the slurry grout must be known, as well as information on the “effective porosity” (or more correctly the Field Permeability) of the country rock, the fracture zones, and the altered and highly Phosphatic Chalk in-situ properties.	OEMP which requires EA approval of the materials used for ground treatment when more details of the construction methodology will be known.
11.1.5	<p><u>Tunnelling Methods, ground vibration, settlement and subsidence</u></p> <p>If large flint nodules (some have been reported as big as 40 to 60cm) are encountered by the full face TBM, then the rotary progress of the machine could well be detrimentally affected or even stopped. Larger flint nodules could indeed cause the tunnelling process to “act as a jackhammer”, which would induce significant ground vibration to surface. Few flint bands, beds, nodules or content occurs within the Phosphatic Chalk zones, but in both the Seaford and Newhaven Formations such features are quite common. Vibration limits are discussed elsewhere (by Rupert Taylor), but adverse rock conditions, as discussed, not yet fully understood and characterised along the proposed tunnel length, could well cause problems with ground movement, settlement and even migration of subsidence and void spaces to surface in some extreme conditions.</p>	See agenda item 5.2 in the Written Summary of Oral Submission from ISH4 regarding Flood risk, Groundwater, Geology and Waste [REP4-032] and agenda item 6 (iii) in the Written Summary of Oral Submission from ISH5 regarding Noise, Vibration, Health and Wellbeing [REP4-033]. See agenda item 5.2 in the Written Summary of Oral Submission from ISH4 regarding Flood Risk, Groundwater, Geology and Waste [REP4-032] and agenda item 6 (iii) in the Written Summary of Oral Submission from ISH5 regarding Noise, Vibration, Health and Wellbeing [REP4-033]. In relation to flints specifically, the selection and sophistication of modern closed-face TBM can include head intervention within the tunnel horizon to deal with the flints that are known to exist within chalk geology. Incorporating head intervention within the design of the TBM allows for safe access by trained personnel under hyperbaric pressure to the cutting head to perform necessary maintenance or changing of tools affected by wear from flints.
11.1.6	<p>Item 6. Effect of elements of the scheme on cultural heritage assets and their settings</p> <p>ii. <i>Winterbourne Stoke Longbarrow junction</i></p> <p>There are concerns about the impacts of lighting: there are no projected images of the new Longbarrow junction where traffic lights are planned: will there be glow from these lights and car lights on rising slip roads? This question was not given a satisfactory answer.</p> <p>There is no projected view of the Works Compound – though image REP3-030 - Figure 7.73 Viewpoint 13 taken from the Winterbourne Stoke barrow group shows it would cover an extensive area and the</p>	<p>Night time images have not been undertaken due to several technological limitations that prevent a night time photomontage illustrating a lighting scenario to any degree of technical accuracy or realistic nature as set out in the Applicant’s response to the Examining Authorities written question LV.1.9 [REP2-033].</p> <p>Section D-CH29 of the Outline Environmental Management Plan [REP4-020], an updated version of which is to be submitted at Deadline 6 of this Examination, provides that traffic signals at Longbarrow junction shall have shrouds or louvres to direct the signals towards the intended user and minimise light spill. Therefore, whilst there will be localised light spill there is</p>

	<p>Slurry Treatment Plant would rise well above the trees. These features would be even more visually prominent closer to, including from the A360 (route to the visitor-centre).</p>	<p>not predicted to be glow from the traffic lights because of the shrouds or louvres.</p> <p>Vehicle headlights are considered to be a source of glare rather than light glow, and with the vehicles in cutting between Longbarrow Junction and the A360, the glare is considered to be reduced by these features.</p> <p>The proposed Scheme is assessed as resulting in beneficial effects in respect of the lighting due to the relocation of part of the A360 further from the western edge of the WHS and the removal of the existing lighting columns at Longbarrow Roundabout in respect of the WHS, as set out in APP-045 paragraph 7.9.129.</p> <p>As noted by the question, views of the work compounds have been produced in response to the Examining Authority's First Written Question LV.1.9 [REP2-033] via Figure 7.73 [REP3-030]. Views of the compound have been assessed within the landscape and visual impact assessment (APP-045) as set out in paragraph 7.9.82, 7.9.86 and 7.9.87 of APP-045 and from views from the A360 for representative visual receptor VR11 within Table 7.8 of APP-045.</p>
11.1.7	<p>ISH 4</p> <p>5.2. vii. monitoring and remediation</p> <p>If monitoring of the TBM is to be undertaken, there must be a concern that damage from vibration/ground instability is possible. We need to know what precise measures will be employed to <i>avoid</i> damage to archaeological remains from vibration and how it would be dealt with if it occurred – e.g., as a result of collapse of a void. Also, what measures exactly will be required, if necessary, to stabilize the portals and cutting walls?</p> <p>[Post hearing note. References made at the hearing by Mr Taylor to the OEMP do not answer the above questions. Appendix 10.6 (APP-278), Section 5 (“Potential sources of ground movement”) and Section 6 (“Assessment of land instability”) to which Mr Taylor also referred us, give rise to very considerable</p>	<p>A programme of ground movement monitoring and complimentary vibration modelling is standard best practice on tunnelling projects and is not included because of “<i>concern that damage from vibration/ground instability is possible</i>”. This is required as part of the risk management strategy and in compliance with the ICE/BTS Joint Code of Practice for the Risk Management of Tunnel Works. The assessment of the risk will be based on the existing and supplementary ground investigation being undertaken for detailed design. As part of the safe system of works the contractor will develop a suite of measures to allow for further investigation and assessment of ground conditions ahead of the tunnel face and identify the need for ground treatment where necessary to maintain movement to within agreed limits to protect archaeology. Where the need for ground treatment is identified this will be undertaken from inside the tunnel portal/ bore where it is safe and practicable to do so in preference to surface intervention.</p> <p>The prediction methodology for vibration from tunnelling follows the methodology prescribed in BS 5228:2009 + A1:2014 ‘Code of Practice for</p>

	<p>concern, since Highways England there admits to potentially serious unknowns. There can be no confidence in reserving such matters as <i>protection</i> (as opposed to “mitigation” which can include loss) of known and unknown archaeology along the line of the tunnel for the contractor to decide. These issues should be addressed as a part of the DCO, so that there is <i>certainty</i> that no further damage is done to the archaeology of the WHS once construction begins. Admission that unexpected conditions may occur during tunnelling indicates that Highways England does not yet have full understanding of the ground conditions. APP-278, para. 6.1.2, reads:</p> <p><i>“Dissolution features have been identified regionally and several features have been identified during preliminary excavations within the footprint of the Proposed Route. The features within the footprint of the proposed route are within proposed cuttings, so will not have any impact on construction. Small scale features have also been identified in interpretative reports; however, the evidence is deemed to be limited and inconclusive.”</i> (our emphasis)</p> <p>The fact that dissolution features [including, we understand, at least one incompletely excavated fissure] appeared in trenches in the proposed cutting area, does not mean that they would not also exist in the area of the tunnel or in cutting sides.]</p>	<p>noise and vibration control on construction and open sites’. This methodology is conservative as it is derived from worst case source data for tunnelling in rock using a hydraulic hammer. Source data for TBM works and chalk ground conditions indicates lower levels of vibration are likely to be generated, however as a precautionary approach the BS 5228 tunnelling vibration prediction methodology has been used.</p> <p>Both vibration and settlement monitoring will be implemented during the works to confirm predictions and trigger intervention by means of ground stabilisation to prevent unexpected movement causing damage. This will be secured under the DCO through provisions included in the OEMP including MW-CH1, MW-CH7, MW-CH8, MW-NO13, MW-NO15 and MW-NO16 with the development of the Heritage Management Plan and monitoring strategy to protect the historic environment.</p> <p>The Applicant considers that there is sufficient site investigation to inform the preliminary design in terms of the choice of a closed-face TBM and options for construction of the cross-passages. Variation in ground conditions (including solution features) are allowed for in the choice of a modern closed-face TBM that can employ techniques to investigate the ground in front of the tunnel and facilitate mitigation measures for any local features subsequently identified.</p> <p>See also the Applicant's response to agenda item 6 (iii) in the Written Summary of Oral Submission from ISH5 regarding Noise, Vibration, Health and Wellbeing [REP4-033] and the response to Written Question Fg.1.5 [REP2-031] which considers these issues.</p>
11.1.8	<p>ISH 5</p> <p><u>Item 7 Effects on wellbeing</u></p> <p>iii. <i>Access to WHS</i></p> <p>Irrespective of proposed byway closure, the scheme denies access to sight of Stonehenge from the A303 currently enjoyed by many for free. So they would have to walk, if they can, unless they pay via the visitor-centre. One would have hoped that, at the very least, car parking would have been provided [as a part of the scheme].</p>	<p>See response to item 2.13.1 in the Oral Submission [REP3-012] and 15.1.1 in the Comments Received at Deadline 3 [REP4-036] which states that a principal aim of the Scheme is to remove the sight and sound of traffic from much of the WHS landscape, thereby re-uniting Stonehenge with surrounding monuments. The response also explains that a free view of the stones would remain from the existing A303 which would be converted to a restricted byway as part of the Scheme, and from the existing PRow network.</p> <p>Furthermore, Highways England notes the results of the Equalities Impact Assessment (EqIA) [APP-296] which concluded that, in relation to heritage</p>

	<p>Driving along the byways isn't always easy, especially from Druid's Lodge. There is potential for closure of Byway 12 to traffic at Larkhill from time to time by the MoD for emergency reasons.</p>	<p>and the WHS specifically, the Scheme will have beneficial impacts in terms of the setting of specific spiritually significant heritage assets, particularly in relation to the removal of the existing A303, which the EqlA concluded will add to the experience of people visiting the area.</p> <p>Proposals to close Byways 11 and 12 are not included in the application for development consent for the A303 Amesbury to Berwick Down Scheme. This was discussed under agenda item 7 (i) in the Issue Specific Hearing for Noise, Vibration, Health and Wellbeing. See Highways England's Written Summary [REP4-033]:</p> <p><i>"In relation to access issues, specifically Byway 12, the Applicant's position remains as described at the Open Floor Hearings. The Scheme proposals in respect of public rights of way are set out in the relevant plans and there are no proposals put forward by the Applicant to change the ability to access Byway 12 as part of the Scheme whatsoever. Instead, it is Wiltshire Council that is proposing a change to the DCO (not the Applicant) in this regard."</i></p>
11.1.9	<p>ISH 5</p> <p><u>Item 7 Effects on wellbeing</u></p> <p>iii. <i>Access to WHS</i></p> <p>At the Preliminary Hearing, there was a request to see the "English Heritage Phase 1 Visitor Survey" which is, in fact, a survey undertaken by the NT that looks at people's value of the view of the Stones from the A303. Although the NT does not wish to place it into the Examination, its findings are referred to by Highways England in the HIA [to support its case for the scheme]: we ought to be able to see at least that part of the survey mentioned in the HIA: assumptions have been made from it that c.75% of people aren't too worried about loss of the view from the A303 which seems unlikely. If we can't see the survey, will the ExA dismiss that part of the survey/HIA from their considerations?</p>	<p>As recorded by Highways England in its cover letter submitted to the Examination at Deadline 1, Highways England does not hold the raw data or the factual report of the English Heritage / National Trust's Phase 1 Visitor Survey and the English Heritage/National Trust Phase 1 Partnership Plan. A summary presentation on this was provided to the UNESCO ICOMOS Mission in 2018 by English Heritage and the National Trust. Three slides from that presentation, referred to in the HIA [APP-195], were reproduced (Charts 2, 3 and 4) in the HIA under sections 6.12.43 – 45 and 6.14.5.</p> <p>The Stonehenge Alliance misquotes the HIA slightly in terms of the survey results; as reported in the HIA at paragraph 6.14.5, the survey <i>"indicated that 75% of A303 travellers don't mind losing the view of Stonehenge or believed that the loss of the view was less important than reducing traffic or protecting the WHS"</i>.</p> <p>As reported in the HIA [APP-195], specifically in paragraphs 9.3.27 and 9.3.28] the loss of the view of the Stones for those using motor vehicles on the existing A303 results in both positive and negative changes. These</p>

	<p>Following the Hearing, study of the section of the HIA which includes this survey (APP-195, pp.500–502) indicates that contrary to the assertion of the NT, not all of the survey information has been published in the HIA: we do not know fundamental and critical facts about it, e.g., how many people were interviewed or how, nor where and who they were.</p>	<p>changes are readily apparent for those who visit the landscape. The HIA is not reliant on the NT survey results.</p>
11.1.10	<p>ISH 6 Agenda Item 3.1</p> <p>We note that the DIADEM Variable Demand Modelling software has been used to assess some of the impacts of the project on travel behaviour. The Examining Authority and Interested Parties have not been provided with the Calibration and Validation Reports for the model, so we cannot be confident that it is appropriate for this project, despite some very limited validation checks being supplied by Highways England. We note that Mr Hanson, for Highways England, stated at the Hearing that the model was validated at a national, not local, level and this further increases our concerns on this issue. We consider that the Calibration and Validation Reports should be provided to the Examining Authority and Interested Parties, so they are available for scrutiny.</p>	<p>The Applicant's response to agenda item 3.1 in the Written Summary of Oral Submission ISH 6 Traffic and Transport [REP4-034], details the approach to Variable Demand Modelling (VDM) in compliance with Webtag. It also references CoMMA Appendix B [APP-300], which provides a suitable level of further detail of the calibration and validation of the model.</p>
11.1.11	<p>ISH 6 - Agenda Item 8.1: Reliance on Monetisation of Cultural Benefits</p> <p>We have not seen the report of this study [Mourato and Maddison study, 1998] and we think it is essential that it is provided to the Examining Authority and Interested Parties so that it can be scrutinised.</p> <p>However, in relation to point (d) above, we presume that the 1998 survey asked respondents to provide a value of the project to their household and not to them as an individual. If so, it is incorrect to multiply the responses by the ratio of individuals to households in updating the results as Highways England have done.</p>	<p>The Maddison and Mourato study was published in the journal 'Conservation and Management of Archaeological Sites' in 2001: https://www.tandfonline.com/doi/abs/10.1179/135050301793138182</p> <p>The headline results in Maddison and Mourato are based on households, however that study also elicited individual willingness to pay results, which can be more directly compared to the current CV study. Item 11.2.63 elaborates further how to do this. As in our response to item 11.2.63, the purpose of this comparison was to show that the values obtained in the 2016 Simetrica study are in line with those of the 1998 Maddison and Mourato study.</p>

11.1.12	<p>ISH 6 - Agenda Item 8.1: Reliance on Monetisation of Cultural Benefits</p> <p>Para 29</p> <p>We would also strongly refute Highways England’s claim that the survey is not an important consideration. The fact is that the BCR without any heritage value is an appallingly low 0.31. Only by using this inflated and flawed heritage valuation survey can it get anywhere near being passable and that is the reason it was included. To now seek to deny the need for this survey and the need to consider value for money and the weighing up of costs and benefits in the decision-making process, illustrates how desperate Highways England have become.</p>	<p>Please see the Applicant’s previous submissions on this point, ranging from its response to written question Se.1.25 [REP2-035] through to its Written Summary of Oral Submissions – Traffic and Transport section 8 [REP4-034].</p> <p>The Applicant rejects criticisms of the CVR as “inflated” or “flawed”: Detailed and robust responses on methodological concerns raised on the CVR are contained throughout its submissions, including in part 13 of its Comments on Written Representations [REP3-013] and in the Applicant’s Deadline 4 submissions in response to the Deadline 3 submissions of Paul Gossage and the Stonehenge Alliance [REP4-036].</p> <p>The value of the scheme cannot be expressed as a limited sub set of monetised benefits as asserted by SHA. The scheme benefits include a range of factors monetised and non-monetised, with the National Audit Office (NAO) in their audit, para 2.6 [https://www.nao.org.uk/wp-content/uploads/2019/05/Improving-the-A303-between-Amesbury-and-Berwick-Down.pdf] stating that Highways England sensibly expanded monetised appraisal to include heritage benefits.</p> <p>It follows from this that at no point has the Applicant denied the need for the survey: it is a key part of the assessment of value for money and therefore the investment decision for the Scheme. The Applicant’s submissions all emphasise the importance of clarity on what the CVR does. Although it forms part of the information making up the economic case referred to in paragraph 4.5 of the NPSNN, the monetisation of heritage benefits it contains is not primarily relevant to the decision on whether to grant development consent for the Scheme, because those benefits do not need to be monetised in order to be taken into account in the planning balance. As set out in [REP-034] above, the contingent valuation study does not seek to say that its results <u>are</u> the economic benefits deriving from the Scheme, but instead seeks to quantify the heritage benefits for valuation purposes. However the question of value for money does not form the basis of the ExA’s assessment of the heritage impacts of the Scheme, which is done in the context of the NPS, EIA (including the HIA) and WHS Convention.</p>
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11.1.13	<p>ISH 7 – Item 5 <u>Effects on the water environment (SAC)</u></p> <p>Drainage to the Blick Mead area and River Avon [SAC] via culverts would be with no treatment of runoff. (It was argued at an earlier hearing, that the increased road surface with flyover would generate more runoff than at present.) Potential pollution affecting the SAC arising from the tunnel construction has not been fully addressed. There is potential for some gain to be made here – at least with treatment of runoff.</p>	<p>These issues were addressed in Written summaries of oral submissions put at Flood Risk, Groundwater, Geology and Waste Hearing on the 11th June 2019 (ISH4) [REP4-032], but in summary:</p> <ul style="list-style-type: none"> • Blick Mead – The drainage around Blick Mead is discussed in ES Appendix 11.4 (Groundwater Risk Assessment) Annex 3 (APP-282) where paragraph 5.2.5 and Figure 2.11 show the A303 existing and proposed, confirming that the drainage arrangements have been maintained as the existing. In addition, Figure 5.2 of the Road Drainage Strategy [REP2-009] shows that the highway area contributing to the surface water runoff discharging in the Blick Mead area is of a similar scale to the existing. The water flowing past Blick Mead will not change in quantity, this flow is conveyed utilising the existing highway ditch and discharge point into the River Avon. The ditch, as noted in para 5.2.5 of the Road Drainage Strategy, will be <i>‘lined with a filtration system to treat the runoff that infiltrates through the base of the ditch’</i> this treats the water entering the ground water system, whilst that entering the River Avon is as per the existing. • The surface water runoff from the remaining highway and new works (countess flyover) is discharged through eight new Drainage Treatment Areas (DTA’s) located adjacent to the slip roads at Countess Roundabout. The DTA’s would be lined and planted with reeds to provide treatment prior to discharge at a rate 20% lower than existing. This is detailed in Road Drainage Strategy para 5.2.3.
11.1.14	<p>The applicant confirmed that tranquillity had been assessed with reference to IAN 135/10 by their landscape architect. IAN 135/10 deals with tranquillity as a landscape feature and does not require any proper assessment of other factors which affect tranquillity, the most important of which is sound level and character. This may mean that there are areas in the vicinity which are currently important for their quiet or tranquil character which, if the Scheme is implemented, would experience an increase in road traffic noise and</p>	<p>The Applicant confirmed at the Noise and Vibration issue specific hearing under agenda item 4 (iv) (the Applicant’s summary of which is at [REP4-033]) that a number of baseline sources had been reviewed in respect of tranquillity, as set out in paragraphs 7.6.75 seq. of APP-045, in combination with field work and the work undertaken in ES Chapter 9 Noise and Vibration [APP-047], as acknowledged in the below question 11.1.15. Therefore, sound level has been considered and there are no omissions from the tranquillity assessment.</p>

	which would no longer have that character. This is an important omission.	
11.1.15	The applicant's landscape architect stated that he used measured sound levels provided by the applicant's acoustic consultant in his assessment of tranquillity but was not able to state how this was done or what criteria or approach were used to evaluate these. It is therefore evident that no consideration of natural and man-made sound has been made, and sound has not been properly considered, contrary to relevant planning policy and guidance.	As stated above and summarised in the Applicant's written summary of the Noise and Vibration issue specific hearing under agenda item 4(iv) [REP4-033], sound has been considered in the tranquillity assessment using the information (including methodology) presented in ES Chapter 9 Noise and Vibration [APP-047] and other baseline sources. The approach taken is therefore not contrary to relevant planning policy and guidance.
11.1.16	At the hearing, the applicant refocussed their statements in relation to tranquillity away from claims about improvements at the henge to improvements in the surrounding area. All parties agreed that tranquillity in much of the surrounding area covered by the tunnel would be improved as a result of the proposed tunnel. Crucially, however, the tranquillity at the henge would be unaffected.	<p>The Assessment of tranquillity as reported in the ES Chapter 7 Landscape and Visual [APP-045] does not comment on the impact at Stonehenge specifically, it refers to the WHS, para 7.9.53: 'there would be a beneficial impact to the tranquillity within the WHS above the tunnel due to the visual and audible reduction in vehicles and the reversion of the existing A303 to a restricted byway'. As stated in the Applicant's written summary of the Noise and Vibration issue specific hearing under agenda item 4 (iv) [REP4-033]: "the Applicant has undertaken an assessment of tranquillity in respect of the World Heritage Site as a whole which is what is required, informed by the World Heritage Site Management Plan - the benefits identified are in relation to that overall approach, not specific to the Stonehenge monument".</p> <p>The Applicant agrees that visitors are an important noise source, and therefore the improvement in tranquillity due to the major reduction in traffic noise will be less at the Stones than other locations in the wider WHS where traffic noise from the A303 is dominant. Nevertheless the major reduction in road traffic noise, combined with the removal of the sight of road traffic due to the tunnel, cannot have anything other than a beneficial effect on tranquillity at the Stones.</p>

11.1.17	<p>Although the road traffic noise levels at the henge would be reduced, the actual reduction in sound level at the henge would be, at best, from 62 to 61 dB, according to the applicant's own data. The applicant's acoustic consultant agreed that these values were correct. If a dominant sound at 61 dB had a minor, unnoticed sound removed from it, there is unlikely to be any perceived difference in level or character. This was illustrated at the hearing by listening to the road traffic audible within the hearing venue when no other sound was present. I explained that if that road traffic noise was removed entirely, it would make a negligible difference to the sound level or character in the hearing hall. This is exactly the situation at the henge. With the road traffic removed, there would be no change to the tranquillity experienced there.</p>	<p>The Applicant does not agree with the suggestion that with road traffic removed, there would be no change to the tranquillity experienced there. The removal of the sight of vehicles and reduction in vehicle sound is considered to result in a beneficial effect to the tranquillity at the Stones and therefore a change to the tranquillity experienced at the Stones.</p>
11.1.18	<p>The applicant claimed, prior to the hearing that noise from the A303 is a significant problem at the henge and that the change in noise level which would result from the proposal would result in a large beneficial effect at the henge. Both of these points have been shown to be incorrect. Since the improvement of tranquillity at the henge is one of the benefits claimed for the proposed development, this should be discounted, when considering the scheme, in my opinion.</p>	<p>The Applicant respectfully reiterates that there would be a beneficial change to the tranquillity at the henge and that of the local landscape character area in which the henge is located, and as per the comments above, all parties agree that there would be an improvement in tranquillity in the surrounding area covering the tunnel. As stated in the Applicant's written summary of the Noise and Vibration issue specific hearing under agenda item 4 (iv) [REP4-033]: "the Applicant has undertaken an assessment of tranquillity in respect of the World Heritage Site as a whole which is what is required, informed by the World Heritage Site Management Plan - the benefits identified are in relation to that overall approach, not specific to the Stonehenge monument".</p>
11.2	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
LANDSCAPE AND VISUAL		

11.2.1	<p>14.1.2: It remains the case that the tables are not consistent and use differing levels of classification. This is not related to the necessity to consider landscape and visual effects separately.</p>	<p>The Applicant respectfully reiterates their response to this matter provided in item 14.1.2 in the Comments on Written Representations Received at Deadline 3 [REP3-013]. It is appropriate for the landscape and visual tables within the landscape and visual methodology [APP-222] to address matters specific to these assessments. The tables are consistent with their tiered identification of value, susceptibility and sensitivity of landscape and visual receptors and appropriate for the assessment of likely significant effects to landscape and visual receptors. Please see response to agenda item 4 (ii) in the summary of oral submissions from ISH3 regarding landscape and visual and design [REP4-031].</p>
11.2.2	<p>14.1.3: It remains the case that the international value of the World Heritage Site has not been taken into account in the assessment of landscape and visual effects and these have been understated precisely because this threshold has been consistently avoided in the landscape and visual impact assessment. I note that GLVIA3 paragraph 5.29 also states at bullet point 1 that “<i>There cannot be a standard approach as circumstances will vary from place to place</i>”.</p> <p>Clearly the Stonehenge World Heritage Site must be accorded appropriate respect and not be treated as simply any ordinary place. The Highways England (HE) approach seeks to treat this exceptional site as just another bit of land affected by a road, when it clearly is not. I also note that Table 5.1 of the GLVIA3 includes many criteria, which, if applied correctly, demonstrate beyond any doubt that the Stonehenge WHS is a very highly valued landscape requiring an appropriately very high sensitivity classification. GLVIA3 also says at bullet point one in 5.45 that “<i>Assessments should reflect: internationally valued landscape recognised as World Heritage sites</i>” and this is following a comment that the value of landscape receptors will reflect the importance of landscape designations and which lists a hierarchy of levels of designation from international to local. It is clearly not an appropriate response to suggest that the internationally</p>	<p>The Applicant respectfully reiterates their response to this matter provided in item 14.1.3 in the Comments on Written Representations Received at Deadline 3 [REP3-013]. The international value of the Stonehenge and Avebury World Heritage Site has been fully understood and that the assessment and the use of the ‘high’ value and ‘high’ sensitivity within the landscape assessment are appropriate. Please see response to agenda item 4 (i) in the oral submission report from ISH3 regarding landscape and visual and design [REP4-031].</p>

	designated landscape of the World Heritage Site is of no more value than areas outside it.	
11.2.3	14.1.4: Taking into account the synthesis of the Statement of Outstanding Universal Value for the WHS (WHSMP, p. 26ff.) which explicitly refers to interrelated monuments and their associated landscapes, it must be clear that any disinterested and objective assessment of the situation must recognise that the Stonehenge WHS is uniquely susceptible to change of the type proposed. It is disingenuous to pretend otherwise.	The landscape and visual assessment has been undertaken objectively and has considered the WHS landscape both through field work and the review of the WHS Management Plan [APP-045 paragraph 7.6.117 seq.]. The work undertaken within the Heritage Impact Assessment [APP-195], assesses the impacts of the scheme on the Outstanding Universal Value of the WHS.
11.2.4	14.1.5: This comment again pretends that a very high classification, recognising what is said in the synthesis of the SOUV, would not affect conclusions of an assessment of effects when it must be obvious that it would do just that. The failure to take into account the special characteristics of the WHS results in down-playing effects, as I have already stated.	The guide matrix presented in table 7.2.11 of [APP-222] enables a significant effect to be assigned to a high sensitivity receptor for magnitudes of impact ranging between minor, moderate and major which is appropriate for the assessment of significant effects. As such there has not been any down-playing of the likely effects of the proposed Scheme. Please see response to agenda item 4 (ii) in the oral submission report from ISH3 regarding landscape and visual and design [REP4-031].
11.2.5	14.1.7: An entire level of classification has been omitted, as is obvious from any objective examination of the LVIA. Pretending that this is not the case is not helpful to an objective assessment of landscape and visual effects.	An entire level of classification has not been omitted. Please see response to item 14.1.2 through to 14.17 in the Comments on Written Representations Received at Deadline 3 [REP3-013].
11.2.6	14.1.9: GLVIA3 is quite explicit in paragraph 8.10 that tables and matrices “ <i>if used and described correctly, can be effective in complementing the text, providing a useful summary of important information</i> ”. The LVIA does not include a narrative description of effects on individual landscape receptors but only a matrix in which the descriptions of effects are not properly related to landscape receptors. The Glossary to GLVIA3 says landscape receptors are “ <i>Defined aspects of the landscape resource that have the potential to be</i>	The Applicant respectfully reiterates their response to item 14.1.15 in the Comments on Written Representations Received at Deadline 3 [REP3-013]. A narrative description of effects is provided for the description of effects on each of the landscape receptors within [APP-227] Schedule of Landscape Effects. There has been a systematic identification of the published landscape receptors and local landscape character areas have been identified via field work. The key landscape characteristics of these published landscape character areas are summarised in [APP-045] and set out in [APP-224]

affected by a proposal.” GLVIA3 says at bullet point 1 in paragraph 3.21 that there must be identification of “landscape receptors, including the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas”.

There seems to have been no systematic attempt to identify landscape receptors, for example, key landscape characteristics, landscape elements and landscape features, within each landscape character area which could be affected by the proposed development. Landscape character areas are areas of a landscape with particular and individual character resulting from aspects of the landscape and components of the landscape within them. Without examining the effects on the parts and aspects of a landscape character area that make it unique and give it its individual character, it is not possible to objectively describe and analyse effects upon it. Since these have not been identified and described in detail, there is no related systematic analysis of the potential effects upon each of these landscape receptors, how they might be affected and by how much. This kind of analysis is vital for any fair, reasoned and objective assessment of landscape effects.

There is no systematic narrative description of landscape receptors and how they would be affected by the development in the ES. Instead it relies on descriptions of effects on landscape characterisations at various levels. These are not landscape receptors, but descriptions of landscape character, which may include reference to specific elements, or key characteristics, which could be defined as receptors. The approach taken is far too broad-brush and does not get down to the detail of real landscape receptors. This is clear in Table 7.11 of Chapter 7 of the ES APP-045 and in Appendix 7.7 of APP-227 which do not itemise landscape receptors and the effects upon them. Despite claims by Highways England that receptors have been identified this has clearly not been done. This means that there is no clear explanation of, or

Published Landscape Character Assessments. The key characteristics of the local landscape characteristics are set out in [APP-225] Local Landscape Character Areas, under the heading ‘key characteristics’.

Please see response to agenda item 3 (iv) in the oral submission report from ISH3 regarding landscape and visual and design [REP4-031].

Therefore, the effects on the parts and aspects of landscape character areas has been undertaken as part of the objective assessment and there is a systematic analysis of the potential effects on these landscape receptors, as set out in [APP-227] Schedule of Landscape Effects.

[APP-227] does itemise each of the landscape receptors and sets out within the narrative the likely impact during the construction and operational phases and then sets out the impact and effect for these phases.

	justification for, the conclusions about landscape effects in ES Appendix 7.7 (APP-227) and therefore, with no published “working-out” to support the conclusions, these have very limited credibility.	
11.2.7	<p>14.1.15: Highways England says that “<i>The importance of the interrelation between monuments in the Stonehenge and Avebury World Heritage Site (WHS) is considered within the landscape and visual impact assessment [APP-045] as set out in paragraph 7.8.6 (c).</i>” This paragraph says “<i>c) Avoiding the creation of new upstanding earthworks which would conflict with the inter-relationship of archaeological monuments/features within a rolling open landscape</i>”.</p> <p>Clearly this does not meet the test of identification of this interrelationship as an important landscape receptor which should be properly described and analysed as part of the assessment of landscape effects within a landscape and visual impact assessment.</p>	<p>The tests for the interrelationship between monuments within the WHS is set out fully in the Heritage Impact Assessment [APP-195], specifically in relation to attribute of Outstanding Universal Value no.6 “<i>The disposition, physical remains and settings of the key Neolithic and Bronze Age funerary, ceremonial and other monuments and sites of the period, which together form a landscape without parallel</i>”. The landscape and visual impact assessment and the Heritage Impact Assessment have informed one another in their assessments.</p>
11.2.8	<p>14.1.17 to 14.1.22: The number of viewpoints should of course be proportionate to the development and its setting, but we are considering very substantial engineering works associated with a World Heritage Site where a very high level of detail in the consideration of effects should be taken as necessary and not optional. The problem remains that the viewpoints selected are not truly representative and do not include those with the potentially greatest effects. They do not take into account those areas from which the public would have views of the proposed engineering works in the future – and LVIA is about taking into account potential effects of a development. I have walked along the A303 through the WHS. Although the verge is narrow and uneven, I know I’m not the only one to do this. During the course of carrying out very many LVIA’s during my career I have frequently walked alongside busy roads to assess potential visual effects on their users. I have no doubt that Highways England has suitably experienced staff who could have assisted with obtaining suitable views from viewpoints</p>	<p>The viewpoints do account for locations where there would be views of the proposed engineering works would be visible, both during construction and in operation. The location of these viewpoints was agreed with the National Trust [APP-045 para 7.3.19] and Wiltshire Council [APP-045 para 7.3.21].</p> <p>Please see response to item 14.1.17 through to 14.22 in Comments on Written Representations Received at Deadline 3 [REP3-013] and response to agenda item (v) in the oral submission report from ISH3 regarding landscape and visual and design [REP4-031].</p>

	<p>along the A303 within the WHS. The whole point of a landscape and visual impact assessment is not merely to look at the current situation but how that would change as the result of the development. It is simply not good enough to claim that “<i>the ability to walk within the footprint of the road (as proposed by the Scheme reverting the A303 to a Restricted byway) does not currently exist, and the assessment is based upon the existing situation.</i>” In fact, this statement displays a remarkable failure to grasp the fundamental reason for carrying out a landscape and visual impact assessment.</p>	
11.2.9	<p>14.1.33: My comment that Table 7.2 within the ES included both landscape and visual effects was in the context of my discussion of landscape effects at that point in my statement. My point at that section of my statement was precisely that landscape and visual effects should be considered separately.</p>	<p>The Applicant agrees that landscape and visual effects should be considered separately and as undertaken the landscape and visual impact assessment on that basis.</p>
11.2.10	<p>14.1.35 and 14.1.37: I have explained above that Highways England has not in fact considered or itemised effects on specific landscape receptors within landscape character areas, including those identified in the WHSMP. This does not comply with GLVIA3. HE’s response does not deal with this issue. For example, GLVIA3 at bullet point 2 in paragraph 8.8 says that reporting should include “<i>systematic identification and description of potentially significant effects that are likely to occur</i>” and there is no such section in the ES and certainly not in APP-227.</p>	<p>Please refer to the Applicants response to item 11.2.6 above and please see response to items 14.1.35 to 14.1.37 in the Comments on Written Representations Received at Deadline 3 [REP3-013].</p>
11.2.11	<p>14.1.39 to 14.1.41: HE again spectacularly fails to get the point about the assessment of landscape effects. I refer again to GLVIA3 which says at bullet point 1 in paragraph 3.21 that there must be identification of “<i>landscape receptors, including the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape in different areas</i>”.</p> <p>What I commented on in my representation was paragraph 8.3.7 of the WHSMP which says “<i>The main pressures on the landscape</i></p>	<p>The Applicant fully understands the assessment of landscape effects. The landscape assessment has identified both published landscape character areas and local landscape character area and their key characteristics, elements and specific aesthetic or perceptual aspects. Matters relating to OUV are addressed within the Heritage Impact Assessment [APP-195].</p>

	<i>continue to include development and changes in land use which can alter or even destroy these often subtle, but important visual and contextual relationships. Such relationships are in themselves attributes of the OUV of the WHS.”</i> The HE response does not deal with this issue in any meaningful way.	
11.2.12	14.1.43: Advice on viewpoints is that it is appropriate to take a worst-case scenario approach and that they should be selected to show the greatest effects that could result from a proposed development. My point is that this does not seem to have been done. It is up to HE to find the correct viewpoints to properly illustrate the potential effects of the development	The appropriate representative visual receptors have been identified for the visual assessment. Please refer to the Applicants response for 11.2.8 above and please see response to item 14.1.44 in the Comments on Written Representations Received at Deadline 3 [REP3-013].
11.2.13	14.1.44: My point was about the views from the existing A303 which would exist in modified form from the proposed by-way which would replace it, not simply about views from green bridge 4. There will be views of the cutting at the west side of the WHS from the proposed by-way replacing the A303 and these have not been adequately considered in the ES.	‘Modified’ views have not been included within the visual assessment which is based on representative views agreed with Wiltshire Council and the National Trust as set out in the Applicants response to 11.2.8 above. Locations which are representative of views from the existing A303 have been included in the visual assessment, for example from the open access land to the east of the Winterbourne Stoke Group, [APP-105] south of the Stones [APP-110] and west of the footpath alongside the existing A303 [APP-112].
11.2.14	14.1.46: Including comments in a different section of the ES using different methods of assessing impacts does not and cannot replace proper consideration of effects in the LVIA using the standard methodology. The visual effects on receptors along the A303 have not been properly assessed.	The Applicant respectfully reiterates their response to item 14.1.46 in the Comments on Written Representations Received at Deadline 3 [REP3-013] and that visual effects on receptors along the existing A303 are properly assessed within the Peoples and Communities chapter [APP-051].
11.2.15	14.1.48: The interpretation panels are not at the places from which the proposed development may be most visible. Nor are such locations the most appropriate because by their nature people will be focussing on the panels and not the wider landscape. It would be more appropriate for viewpoints to be where panoramic views across the WHS can be seen demonstrating the interrelationships between	The interpretation panels are key viewing locations within the WHS due to the fact that there is an interpretation panel present. The visual assessment is not based upon the receptor looking at the panel, it is based upon them being present at that location, because of the panel, but looking across the landscape to the proposed Scheme. The visual assessment includes locations from where there are panoramic views and not interpretation panels, e.g. from open access land to the east of the Winterbourne Stoke

	monuments. My point stands that the viewpoints selected for the LVIA do not take this into account.	Group, Byway WCLA1, Byways AMES11 and AMES12 and from the footpath alongside the existing A303 between King Barrow Ridge and Stonehenge Bottom.
11.2.16	14.1.50 and 14.1.52: HE haven't bothered to provide an assessment of views from viewpoints along the proposed by-way where people would be able to see the cutting at the west side of the WHS, but then in this response seem to think they have. In any case this response misses the point yet again. It is a stated policy of the WHSMP that more areas of the WHS will be opened up for public access. This goes well beyond a by- way to replace the A303 and the response to my points about future wider public access do not deal with this issue.	The selection of viewpoints is based upon the existing context with the locations agreed with the National Trust and Wiltshire Council, as set above in response to 11.2.8. Future wider public access beyond locations proposed by the Scheme have not been included in the assessment; however the visual receptors that have been identified are appropriate to assess the likely impacts of the proposed Scheme.
11.2.17	14.1.54 to 14.1.57: The HE response does not deny that in future people will be very aware of the very large scale of the engineering works for the cuttings at either end of the tunnel and of course the very large scale of the new junction west of the existing Longbarrow Crossroads. This would affect how people perceive the landscape as well as the view and is thus both a landscape and a visual effect. There is no adequate assessment of these effects within the ES. The HE response only deals with mitigation measures and not the nature, magnitude and significance of the original effects.	The alteration to the surface landform as a result of the cuttings at either end of the tunnel and the impacts and effects resulting from Longbarrow Junction are addressed within the landscape and visual assessment, including for Oatlands Hill [APP-227 page 14 to 15] and visual receptors at the western edge of the WHS [APP-228, visual receptor 13, page 12].
11.2.18	14.1.60: HE have again missed the point. There has been no adequate assessment of landscape effects of the proposed development adjacent to the western edge of the WHS. HE's response again deals with mitigation, rather than the lack of an assessment of the nature, magnitude and significance of effects on specific landscape receptors.	The Applicants response deals with the adverse impacts of the proposed Scheme, clearly referencing the relevant sections of the ES and the sources of impact. Please see response to item 14.1.60 in Comments on Written Representations Received at Deadline 3 [REP3-013].
11.2.19	14.1.63: My point that the new engineered structures would introduce large scale structures and linear features into the landscape resulting in landscape effects has not been answered by HE. Instead the	The Applicant has answered the question by setting out how the rounding off of the cuttings would aid in reducing the landscape impact compared to an engineered profile and that adverse impacts to the landform would result from

	response focusses again on visual effects, which is not the point I was making, but does demonstrate the confusion between landscape and visual effects in the LVIA.	the cutting approaches. There is no confusion between landscape and visual effects in the LVIA. Please see response to item 14.1.63 and 14.1.65 in the Comments on Written Representations Received at Deadline 3 [REP3-013].
11.2.20	14.1.68: The potential landscape effects have not been properly assessed as I've stated many times. The visual effects have been partially assessed but there are major flaws with that assessment. Without a proper and thorough description of effects there can be no reliable conclusions about their significance. However, my point, restated in paragraph 14.1.67 of the HE response, that beneficial and adverse effects cannot legitimately be offset one against the other in the way that has been done in the ES has not been answered at all.	The ES has considered the differing impacts as a result of the proposed Scheme, for example adverse impacts to landform or beneficial impacts to landcover from new chalk grassland or the establishment of new planting and considered these in the conclusion of the overall impact. The relationship between the sensitivity of the receptor and the impact is what has determined the effect.
11.2.21	14.1.69: Here again HE are ignoring landscape effects and focussing on visual effects. This response misses the point yet again. My comment was about landscape effects and not visual effects.	The question at 14.1.69 suggested that no mitigation had been proposed and the Applicants response therefore set out the landscape mitigation that has been proposed and does not focus on visual effects. Please see response to item 14.1.70 in the Comments on Written Representations Received at Deadline 3 [REP3-013].
11.2.22	14.1.73: Putting a very large engineered junction at the edge of the WHS will affect the landscape. The new junction would change forever how this area of landscape is perceived and how it exists as a resource resulting in a permanent landscape effect. As is pointed out in GLVIA3 at 2.2 " <i>Landscape is about the relationship between people and place. It provides the setting for our day-to-day lives... People's perceptions turn land into landscape</i> ". This complements Interim Advice Note 135/10 (IAN135) which says at 2.3 that " <i>It should also be noted that 'Landscapes are considerably more than just the visual perception of a combination of landform, vegetation cover and buildings – they embody the history, land use, human culture, wildlife and seasonal changes of an area. These elements combine to produce distinctive local character and continue to affect the way in which the landscape is experienced and valued. However, the</i>	<p>The rounding off of the earthworks will aid in reducing the impact to the landscape, because it will achieve a landform which can be integrated into a rolling landscape, in contrast to an engineered profile.</p> <p>Section 7.8 Design, mitigation and enhancement measures of the LVIA [APP-045] references the DMRB Environmental Functions [APP-045 paragraph 7.8.8]. These functions include landscape integration (EFB) which notes "<i>Sympathetic re-grading of adjacent land during construction helps to disguise the structural earthworks outline</i>" and defines EFB as "<i>Integrate the Highway with the character of the surrounding landscape by ...blending with local landform...</i>".</p>

	<p><i>landscape is also dynamic, continually evolving in response to natural or man-induced processes” (See GLVIA para 2.3).</i></p> <p>Both explain that landscapes are not views but a very great deal more.</p> <p>The response from HE again focusses on visual effects. Rounding off earthworks won't remove or lessen the landscape effect. The HE response again demonstrates a failure to understand the distinction between landscape effects and visual effects.</p>	<p>This landscape integration and rounding off the top of the slopes is a key part of responding to the key landscape characteristics of this landscape, which is its landform.</p> <p>There is therefore no confusion between landscape and visual effects and the distinction between the two is fully understood by the Applicant.</p>
11.2.23	<p>14.1.82 to 14.1.85: I note that these comments again fail to address the points I made. There is a clear and persistent failure by HE to understand what landscape effects are, but perhaps that should not by now be a surprise because they have failed to identify them or assess them properly. Chalk downland is a valuable habitat and restoring it is welcome. However, this could be done without the proposed large-scale extensive engineering works. No one passing through the proposed new junction west of the existing Longbarrow Crossroads will be in any doubt about the large-scale of the proposed highways works nor how much the landscape has been changed by them. The proposed planting is quite minimal compared to the scale of the junction.</p>	<p>The Applicant has addressed landscape matters in the response to this suggestion, with reference to land take, landform and land cover within the Applicants response. The extent of the proposed planting is appropriate to achieve landscape integration and visual screening in the context of the landscape.</p> <p>Those passing Longbarrow junction will be aware that the junction is set approximately 700 metres further west of the WHS boundary than the existing Longbarrow roundabout and that it is in a lower position (being in cutting) within the landscape and that it is not lit, unlike the existing Longbarrow roundabout.</p>
11.2.24	<p>14.1.87 to 14.1.89: My comment is about what is said in Chapter 1 of the ES at 1.2.2. Many people might read just the summary – the volume of documents relating to the scheme is daunting – and take what is said there at face-value. It is misleading and comments from HE do not alter that.</p> <p>In conclusion it remains my professional opinion that the LVIA has not been properly carried out. Landscape receptors have not been properly identified and there has been no systematic identification and description of potentially significant effects on landscape receptors. Visual receptors have been identified, but the selection of viewpoints is flawed and does not take into account some potentially</p>	<p>The LVIA has been properly carried out in accordance with both the Guidelines for Landscape and Visual Impact Assessment, Third Edition and the Interim Advice Note 135/10 as set out in APP-045 section 7.3: Methodology.</p> <p>The LVIA scope and methodology has been agreed with Wiltshire Council [APP-045 paragraph 7.3.18 seq.] along with visual receptors also being agreed with the National Trust [APP-045 para 7.3.19].</p> <p>Both published landscape character area and local landscape character areas identified via field work have been identified along with a range of representative visual receptors.</p>

	<p>very significant views. There has been no transparent and clearly explained assessment of the significance of effects. The conclusions in the ES at APP-227 cannot be regarded as credible because they are not supported and justified by a proper assessment of potential effects.</p>	<p>The schedule of landscape effects [APP-227] and visual effects [APP-228] provide a systematic description of the impacts during the construction and operational phases of the proposed Scheme to assess the likely effects on landscape and visual receptors in an objective and justified manner.</p>
<p>HERITAGE AND HISTORIC ENVIRONMENT</p>		
<p>11.2.25</p>	<p>12.1.3 to 12.1.6: Highways England’s Scheme does not comply with the Government’s obligations under the World Heritage Convention to protect the WHS (and thus to sustain its OUV), as is repeatedly made clear by successive Advisory Missions to Stonehenge and Decisions of the World Heritage Committee. The 2019 Analysis and Conclusions of the UNESCO World Heritage Centre, ICOMOS and ICCROM in their Report to the World Heritage Committee on the Stonehenge, Avebury and Associated Sites World Heritage Site endorses that view. These views are echoed in a Draft Decision prepared for the Committee’s consideration in early July this year which, although subject to potential amendment, would not invalidate the advice of World Heritage Centre and international specialists.</p>	<p>Obligations under the World Heritage Convention</p> <p>With regard to compliance with the Government’s obligations under the World Heritage Convention, we would refer the Stonehenge Alliance to the Applicant’s response to the Examining Authority’s Written Question G.1.1 [REP2-021, pp.1-2 to 1-5]. In brief, the Applicant refutes the statement that the Scheme does not comply with UK obligations under the WHC. 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. As demonstrated by Case for the Scheme and NPS Accordance [APP-294], the Scheme is in compliance with the NPSNN. The Heritage Impact Assessment submitted with the application [APP-195] demonstrates that, overall, the OUV of the WHS would be sustained. In line with Articles 4 and 5 of the WHC, the Scheme and any decision to grant consent for it would</p>

not put the UK in breach of the duty to protect and conserve the cultural and natural heritage of the WHS.

We would also refer to the Applicant's Written Summaries of oral submissions at Cultural Heritage Issue Specific Hearings (ISH2) [REP4-030], submitted at Deadline 4, specifically Section 3(i), Policy and Guidance: ICOMOS/ UNESCO; 3(v) Emerging reports, policy, and guidance; 3(vi) discussion of the principles of an overall balance of harm against benefit and whether all adverse impact on OUV should be avoided, whatever the benefit. We would also refer the Stonehenge Alliance to Appendix A of REP4-030: Applicant's response to points raised in relation to interpretation of the World Heritage Convention and the Tasmanian Dam Case.

With regards to recommendations of UNESCO / ICOMOS and the World Heritage Committee, Highways England has previously fully considered these in relation to the Scheme, which is the subject of this DCO application, which includes various features and controls that have been put in place in response to those recommendations (for example, the route alignment selected as the preferred route avoiding the winter solstice sunset alignment and the bisecting of the Diamond Group; setting the road in deep retained cuttings to minimise landtake; determining the length of the tunnel to avoid the Scheduled Monument known as the Avenue (NHLE 1010140) at its eastern end and a Bowl barrow south of the A303 and north west of Normanton Gorse (NHLE 1010832) at its western end – the tunnel length has been extended to 2 miles (or 3km) in length; the further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal to further extend the tunnel (to almost 3.3km) to aid landscape integration; the optimization of the positions of the tunnel portals at the head of dry valleys in the landscape; in order to reduce the length of cutting (and minimise the length of the culvert part of the tunnel in the western approaches) the addition of the 150m long land bridge to maintain physical and visual connectivity between the Winterbourne Stoke Crossroads Barrows and the Diamond Group; the removal of the surface A303 into a tunnel and approach cuttings to reduce noise and improve the tranquillity of the WHS; in order to minimise light spill measures have included no lighting of the new Longbarrow Junction or the approach cuttings, new directional lighting at Countess Junction

		<p>replacing the existing non-directional lighting, lighting of the portals would be designed to minimise light spill out in to the WHS landscape and lighting under the land bridge will only operate during daylight hours; and to minimise the visibility of new infrastructure within the WHS signage and other highways installations will sit completely within the approach cuttings and not extend above them). Highways England (and DCMS in its State of Conservation Report submitted to the World Heritage Centre in February 2019) has explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the World Heritage Site, and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified (see [REP1-015]). Highways England continues to work closely with heritage stakeholders, and will continue to report to and engage with UNESCO / ICOMOS and the World Heritage Committee through DCMS.</p> <p>With respect to the decision formally adopted by the World Heritage Committee in July 2019, as recorded with respect to Agenda Item 3(v) in the Written Summary of oral submissions from the hearing [REP4-030], Mr Nichol of DCMS reported at the hearing that the view of DCMS was that the then draft decision amplifies the perceived negative impacts of the Scheme and does not adequately reflect the extent to which the World Heritage Committee's 2018 decision has been taken into account by DCMS as the State Party and Highways England.</p>
11.2.26	12.1.8 to 12.1.10: Our comment is still valid. The Scheme concentrates on improvement of the central area of the WHS with severe damage to landscape and archaeology in other parts. This is not compatible with HMG's obligations under the WH Convention.	<p>Balancing damage to one area of a cultural landscape and enhancement to another</p> <p>As noted in the written summary of the Applicant's oral submissions put at Cultural Heritage hearings 2-2 on 5th and 6th June 2019 - June 2019 [REP4-030]:</p> <p><i>“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 “[b]alanced and justifiable decisions”, and to paragraph 2-1-5 which provides that “[u]ltimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place”. Mr Taylor QC referred to</i></p>

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 “Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place”. 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 accordant [APP-294].” (please see item 3 (vi) of [REP4-030]).

The preferred route was carefully chosen to minimise effects on archaeology, and a comprehensive programme of archaeological evaluation surveys has informed the Scheme being designed in a way that has limited any direct physical impacts as far as practicable. Design development has benefited from extensive mapping and modelling, to inform both the Landscape and Visual Impact Assessment and the Heritage Impact Assessment (ES Chapter 6, Cultural Heritage, Appendix 6.1, paragraph 5.2.10).

The Scheme would not compromise the enjoyment and understanding of the WHS for future generations. The Scheme will create opportunities for greater public access, and appreciation and enjoyment of the WHS through increased connectivity of key monuments and monument groups north and south of the existing A303. The Scheme will enable beneficial opportunities for transmission of OUV and for increasing the public's awareness, understanding and perception of the OUV of the WHS in a local, regional, national and international context.

In terms of balancing the harm and benefits to attributes of OUV as a result of the Scheme, in order to arrive at an overall effect on the WHS as a whole, the Heritage Impact Assessment has been prepared following ICOMOS guidelines (https://www.icomos.org/world_heritage/HIA_20110201.pdf). The scope and approach of this assessment, which is reported in ES Appendix

		<p>6.1 [APP-195], was endorsed by UNESCO/ICOMOS in their report from their third advisory mission on the scheme early in 2018 (https://whc.unesco.org/en/list/373/documents/). The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the whole WHS and its OUV. It considers the approach to balancing the impacts of the Scheme on attributes of OUV in order to reach an overall conclusion in terms of the impact on the OUV of the WHS is appropriate, and necessary in order to inform the tests required to be undertaken by the Secretary of State.</p> <p>Obligations under the World Heritage Convention</p> <p>With regard to the Government's obligations under the World Heritage Convention to protect the WHS, Highways England refers the Stonehenge Alliance to the response in item 11.2.25.</p>
11.2.27	<p>12.2.2 to 12.2.9: The Scheme does not meet the Vision (p.10) of the Management Plan or the primary aim of its strategy:</p> <p><i>"This Management Plan sets the overarching strategy for achieving the correct balance between conservation, access, the interests of the local community and the sustainable use of the Site, whether for recreation and tourism, or for agriculture. The primary aim of the strategy is to protect the Site to sustain its OUV as agreed by UNESCO, provide access and interpretation for local people and visitors, and allow its continued sustainable economic use.</i></p> <p><i>The Aims, Policies and Actions table in Part Four sets out how partners will work together to achieve this aim."</i> (Management Plan, p.10)</p> <p>The redundant A303 that would become a byway would remain in the visual and archaeological record as a major feature right across the landscape – much as the grassed-over A344 is today but with a hard surface for permitted motorised and other non-motorised vehicles.</p>	<p>The Applicant does not accept that the Scheme fails to meet the quoted text from the Management plan, and has set out throughout the Scheme documentation and responses to comments how the OUV is to be sustained and the WHS protected.</p> <p>Whilst the Applicant agrees that new restricted byway within the WHS "would remain in the visual and archaeological record", the Applicant notes that it would be less intrusive than it is now due to majority of its width being grassed over. It would also contribute to an overall reduction in pedestrian casualties. As set out in the Applicant's response, "The new restricted byway within the WHS would provide a durable surface for non-motorised users including those needing mobility aids, and those vehicles permitted to use the route such as agricultural and maintenance vehicles." (Please see the Comments on Written Representations [REP3-013] paragraph 12.2.7).</p> <p>The WHS Management Plan (Simmons & Thomas 2015, p. 8, http://www.stonehengeandaveburywhs.org/management-of-whs/stonehenge-and-avebury-whs-management-plan-2015/) sets out the Vision for the Stonehenge and Avebury World Heritage Site as follows:</p> <p>"The Stonehenge and Avebury World Heritage Site is universally important for its unique and dense concentration of outstanding prehistoric monuments and sites which together form a landscape</p>

without parallel. We will work together to care for and safeguard this special area and provide a tranquil, rural and ecologically diverse setting for it and its archaeology. This will allow present and future generations to explore and enjoy the monuments and their landscape setting more fully. We will also ensure that the special qualities of the World Heritage Site are presented, interpreted and enhanced where appropriate, so that visitors, the local community and the whole world can better understand and value the extraordinary achievements of the prehistoric people who left us this rich legacy. We will realise the cultural, scientific and educational potential of the World Heritage Site as well as its social and economic benefits for the community."

Many of elements of this Vision are not within the remit of Highways England, in particular elements such as WHS presentation, interpretation, engagement and transmission – which are the remit of heritage partners. The harmful impacts of current roads and traffic on the WHS are described in the Applicant's response to the Examining Authority's Written Question AL.1.20 (iii) [REP2-024]. With regard to the Vision's aim to "allow present and future generations to explore and enjoy the monuments and their landscape setting more fully", the Scheme provides the opportunity to enhance physical access, linking Stonehenge to the wider landscape.

The stated primary aim of the WHS Management Plan's strategy is "to protect the Site to sustain its OUV as agreed by UNESCO, provide access and interpretation for local people and visitors, and allow its continued sustainable economic use." The cultural heritage assessment, ES Chapter 6 [APP-044] and an accompanying Heritage Impact Assessment, ES Appendix 6.1 [APP-195], Section 12.3, ("Alignment with WHS Management Plan vision, aims and policies"), considers the ways in which the Scheme delivers against these aims as well as the policies as set out in the 2015 WHS Management Plan more generally. In terms of the primary aim of the strategy to protect the Site to sustain its OUV, the HIA [APP-195] has assessed the effect of the Scheme on the OUV of the WHS, and it concludes that there would be an overall slight beneficial effect on the OUV of the WHS and that its OUV would be sustained. The Scheme has been developed with consideration to relevant aims and policies set out in the 2015 WHS Management Plan, and is fully in compliance with those.

		<p>The Scheme design has been developed having regard for the potential impact of the Scheme on the World Heritage Site and its OUV. One of the fundamental objectives of the Scheme, as stated in the Case for the Scheme [APP-294] is to help conserve and enhance the WHS. Heritage considerations have been afforded the highest priority throughout the development of the Scheme, informing the choice of preferred route and influencing the design of the Scheme, geared towards delivering this objective. The preferred route for the Scheme was selected to sustain OUV, by avoiding the archaeological remains and important sites and monuments that contribute to the OUV of the WHS. Subsequent careful and sensitive design development, including mitigation measures to limit or avoid impacts, has been informed by ES Appendix 6.9 - Cultural Heritage Setting Assessment [APP-218] and ES Appendix 6.1, Heritage Impact Assessment (HIA) [APP-195]. Further details of how the Scheme has been developed to avoid and minimise adverse impacts on cultural heritage and to protect or enhance the setting of the WHS are provided in ES Chapter 6, Cultural Heritage [APP-044], Section 6.8, Embedded Mitigation, and Table 6.9.</p>
11.2.28	<p>12.2.12 to 12.2.15: The fact that the recommendations of Advisory Missions and the WH Committee to date have “been considered carefully” and have “informed the development of the Scheme” does not appear to have resulted in their advice being followed.</p>	<p>Highways England has previously fully considered the recommendations of UNESCO / ICOMOS and the World Heritage Committee, and the Scheme the subject of this DCO application includes various features and controls that have been put in place in response to those recommendations (for example, the route alignment selected as the preferred route avoiding the winter solstice sunset alignment and the bisecting of the Diamond Group; setting the road in deep retained cuttings to minimise landtake; determining the length of the tunnel to avoid the Scheduled Monument known as the Avenue (NHLE 1010140) at its eastern end and a Bowl barrow south of the A303 and north west of Normanton Gorse (NHLE 1010832) at its western end – the tunnel length has been extended to 2 miles (or 3km) in length; the further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal to further extend the tunnel (to almost 3.3km) to aid landscape integration; the optimization of the positions of the tunnel portals at the head of dry valleys in the landscape; in order to reduce the length of cutting (and minimise the length of the culvert part of the tunnel in the western approaches) the addition of the 150m long land bridge to maintain physical and visual connectivity</p>

		<p>between the Winterbourne Stoke Crossroads Barrows and the Diamond Group; the removal of the surface A303 into a tunnel and approach cuttings to reduce noise and improve the tranquillity of the WHS; in order to minimise light spill measures have included no lighting of the new Longbarrow Junction or the approach cuttings, new directional lighting at Countess Junction replacing the existing non-directional lighting, lighting of the portals would be designed to minimise light spill out in to the WHS landscape and lighting under the land bridge will only operate during daylight hours; and to minimise the visibility of new infrastructure within the WHS signage and other highways installations will sit completely within the approach cuttings and not extend above them). Highways England (and DCMS in its State of Conservation Report submitted to the World Heritage Centre in February 2019) has explained why the proposed Scheme offers an optimal solution both to the transport problems on the A303 and to delivering benefits for the World Heritage Site, and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified (see [REP1-015]). Highways England continues to work closely with heritage stakeholders, and will continue to report to and engage with UNESCO through DCMS.</p> <p>Highways England also refers to the Heritage Impact Assessment, which notes that “The heritage considerations which have influenced the design of the Scheme are described in HIA Section 8.2, Iterative design and embedded mitigation. Key design developments are summarised in HIA Table 9: Design changes to the Scheme within the WHS in response to cultural heritage concerns” [APP-195, para. 3.7.10].</p>
<p>11.2.29</p>	<p>12.2.18: Arguments put forward for not placing the W tunnel portal beyond the WHS boundary remain unconvincing, especially as the cost of doing this has been estimated by Highways England.</p>	<p>The Applicant maintains its position, set out in detail in Response to Written Question AL.1.29,[REP2-024] that the locations of the eastern and western portals in the proposed Scheme have been identified as the optimum locations when all environmental, technical and economic considerations are taken into account. There is no evidence that the additional investment required to extend the tunnel length would deliver meaningful additional benefits to the WHS that would justify the additional cost.</p> <p>While the Applicant has estimated the costs of these options, it remains its view that the slight benefits do not merit the significant increase in cost to the</p>

		public purse of £264 million in respect of the option of a cut and cover tunnel extension to the WHS boundary or £578 million in respect of the option of a bored tunnel extension to beyond the WHS Boundary.
11.2.30	12.3.2 to 12.3.4: Our view as set out in para.12.3.1 is unchanged. Clearly, there is no “full recognition” of HMG’s obligations under the WH Convention in the Scheme proposals.	<p>Highways England notes the Stonehenge Alliance's comment.</p> <p>Highways England refers the Stonehenge Alliance to our responses to items 11.2.25 and 11.2.26.</p> <p>Highways England continues to liaise with DCMS regarding World Heritage Centre advice and decisions.</p>
11.2.31	<p>12.3.6 to 12.3.47: Highways England tends to confuse OUV with attributes of OUV. The 2018 Advisory Mission endorsed the methodology used for HIA but was not in agreement with the conclusions reached on the assembled data. It is not acceptable to balance adverse and positive impacts of the Scheme on attributes of OUV in order to obtain an overall view on impact – as was also made clear by ICOMOS-UK at ISH 2. The ICOMOS HIA requirement is to protect attributes of OUV in order to protect the WHS and its OUV as Highways England points out in para.12.3.24.</p> <p>There is no long-standing aspiration or commitment to remove the A303 from the WHS since inscription, nor does such an aim appear in any of the WHS Management Plans to date.</p> <p>Highways England’s comment in para. 12.3.26 again displays muddled understanding of the difference between OUV and attributes of OUV. Para.12.3.34 confirms what we have stated (para.12.3.25), that attributes of OUV include both designated and non- designated heritage assets.</p> <p>Highways England is incorrect in stating (para.12.3.36) that the adverse effect of the A303 on the OUV of the WHS is highlighted in the nomination document and all three Management Plans though this may be considered by some to be no more than a semantic point. Highways England’s baseline scenario for assessment of the</p>	<p>HIA Scoping Report</p> <p>The Stonehenge Alliance states that “The 2018 Advisory Mission endorsed the methodology used for HIA but was not in agreement with the conclusions reached on the assembled data”. We understand that this comment relates to the Applicant’s HIA Scoping Report and note that this Report did not reach any “conclusions on the assembled data” at this design stage. As such, the Applicant considers the Stonehenge Alliance's statement in this regard to be misleading.</p> <p>OUV, attributes of OUV and heritage assets</p> <p>The HIA has been carried out accurately and with a full appreciation of the importance of the WHS and its OUV. With regard to OUV and Attributes of OUV, it is the OUV of the WHS that gives it its significance, hence, in order to assess the impact on the WHS site overall, an assessment of OUV is required.</p> <p>The HIA was prepared in line with the Guidance on Heritage Impact Assessments for Cultural World Heritage Properties adopted by the International Council on Monuments and Sites (ICOMOS 2011), which aims to deliver relevant assessments. This notes “Where cultural heritage sections of EIAs clearly do not focus on the attributes of OUV, they would not meet desired standards in managing change at WH properties.” (ICOMOS 2011, para. 2-1-7). In accordance with ICOMOS 2011 Guidance, the ES [APP-044] and the HIA [APP-195] are clearly and directly tied to the attributes of OUV (ICOMOS 2011, P. 1, para. 4).</p>

Scheme remains unclear. There is and never has been any aspiration/commitment to remove the A303 from the WHS (para.12.3.39); nor is there at the present time.

The Integrity of the WHS is: *“a measure of the wholeness and intactness of the natural and/or cultural heritage and its attributes. Examining the conditions of integrity, therefore requires assessing the extent to which the property:*

- a) *includes all elements necessary to express its Outstanding Universal Value;*
- b) *is of adequate size to ensure the complete representation of the features and processes which convey the property’s significance;*
- c) *suffers from adverse effects of development and/or neglect.*

(UNESCO Operational Guideline 88)

Integrity is required for a WHS to be designated. It is not “one of the foundations of OUV” as Highways England suggests. Although the A303 traffic has an adverse impact on the setting and enjoyment of certain parts of the WHS, this does not justify removal of only a section of the road from the Site. We discuss this more fully in our Written Representation at Section 1.3.4.1.

The Applicant disagrees that its response at para 12.3.26 of the Applicant’s Comments on Written Representations [REP3-013], *“Designated and non-designated heritage assets, along with other physical elements and relational elements and tangible or intangible cultural aspects, are not Attributes in themselves: they convey or express Attributes of OUV”*, is muddled, or conflicts with para. 12.3.34, “The HIA assesses the significance of effect of the existing A303 and the anticipated magnitude of change and significance of effects of the Scheme on Asset Groups and discrete and isolated heritage assets expressing Attributes of OUV and on isolated or discrete heritage assets that convey OUV. These include both designated and non-designated heritage assets [...]” A heritage asset is not an Attribute in itself: however, it may convey an Attribute.

“Attributes are aspects of a property which are associated with or express the Outstanding Universal Value. Attributes convey that value and allow an understanding of it. Attributes can be tangible or intangible.

The WHS Operational Guidelines indicate a range of types of attribute which might convey Outstanding Universal Value, including:

- *form and design;*
- *materials and substance;*
- *use and function;*
- *traditions, techniques and management systems;*
- *location and setting;*
- *language, and other forms of intangible heritage; and*
- *spirit and feeling (Operational Guidelines, Paragraph 82).*

It is essential that the attributes identified for a property should flow from the Statement of Outstanding Universal Value and the justification for the criteria. Attributes must be identified as they are vital to understanding authenticity and integrity, and are the focus of protection, conservation and management.” (UNESCO, ICCROM, ICOMOS and IUCN’s 2011 Preparing World Heritage Nominations. World Heritage Resource Manual. 2nd ed., pp. 31-32, <https://whc.unesco.org/document/116069>).

Resolving the issues associated with the existing A303

The Stonehenge Alliance notes that “There is no long-standing aspiration or commitment to remove the A303 from the WHS since inscription, nor does such an aim appear in any of the WHS Management Plans to date”. Resolving the issues associated with the A303 has been a long-standing aspiration and commitment for the WHS through successive WHS Management Plans, including the latest Management Plan for the WHS published in 2015.

“A Statement of Significance for the Stonehenge, Avebury and Associated Sites WHS, was agreed by UNESCO in 2008. It is derived from the nomination and evaluation documentation of 1985/6. The Statement of Significance (2008) was subsumed into the Statement of Outstanding Universal Value Integrity and Authenticity (the "SoOUV") (2013).” (Simmonds & Thomas 2015, p.261). The impacts of roads are highlighted in the SoOUV’s statement on integrity: “The presence of busy main roads going through the World Heritage property impacts adversely on its integrity.” One road clearly ‘goes through’ the property: the A303.

The SoOUV goes on to note that “The roads sever the relationship between Stonehenge and its surrounding monuments, notably the A344 which separates the Stone Circle from the Avenue.” The reasonable interpretation of this sentence is that other roads sever that relationship, however – the Applicant also notes for context that the A344 was specifically mentioned in the inscription documentation, as at the time of inscription the State Party (the UK) agreed to remove the A344 road to reunite Stonehenge and its Avenue and improve the setting of the Stone Circle; this was achieved in 2013-2014.

Highways England’s baseline scenario for assessment of the Scheme

Stonehenge Alliance states that “Highways England’s baseline scenario for assessment of the Scheme remains unclear.” The existing A303 results in a negative baseline, acknowledged in WHS documentation (for example WHS Management Plan 2015, 8; Aim 6 and Policy 6a). The Applicant has identified in detail the extensive problems that are currently caused or exacerbated by the existing A303 [APP-195, Section 9.1] and has further identified why the Scheme is vital in addressing those problems to the benefit of the region

including the WHS itself [see the Case for the Scheme [APP-294] and the HIA [APP195, Section 12.3].

The HIA [APP-195] specifically assesses the significance of impacts and effects of the existing A303 and the anticipated significance of effect of the Scheme on the Attributes of OUV, Integrity and Authenticity in Section 9.4, which addresses Scheme impacts on the seven Attributes of OUV for the entirety of the WHS.

There was no balancing or contrasting or measuring of the existing A303 and the Scheme against each other. Both are assessed and the impacts are rated so that the reader can compare the two results independently.

In the Environmental Statement (ES) Chapter 6 [APP-044], the existing A303 forms part of the baseline against which the proposed Scheme is assessed. The definition of the future baseline and assessment, taking into consideration the future baseline scenario, has been undertaken in accordance with PINS Advice Note 17 and is presented within the ES technical discipline chapters [APP-043 to APP-052] and ES Chapter 15 Assessment of Cumulative Effects [APP-053].

Balance adverse and positive impacts of the Scheme

ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011, para. 6.2, https://www.icomos.org/world_heritage/HIA_20110201.pdf) notes that “Every reasonable effort should be made to avoid, eliminate or minimise adverse impacts on attributes that convey OUV and other significant places. Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place. In the case of WH properties this balance is crucial”.

In terms of balancing the harm and benefits to attributes of OUV as a result of the Scheme, in order to arrive at an overall effect on the WHS as a whole, the HIA has been prepared following ICOMOS guidelines (https://www.icomos.org/world_heritage/HIA_20110201.pdf). The UNESCO/ICOMOS report on their third advisory mission on the scheme early in 2018 [REP1-008] “considers that the methodology outlined in the Heritage Impact Assessment Scoping Report (AECOM, Mace, WSP February 2018) is appropriate” and that “The 2011 ICOMOS Guidance on Heritage Impact

Assessments for Cultural World Heritage Properties should continue to guide Heritage Impact Assessment” [REP1-008, para. 5].

As noted in the written summary of the Applicants’ oral submission put at Cultural Heritage hearings 2-2 on 5th and 6th June 2019 - June 2019 [REP4-030], “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 “[b]alanced and justifiable decisions”, and to paragraph 2-1-5 which provides that “[u]ltimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place”. 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 “Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place”. 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].” (please see item 3 (vi) of [REP4-030]).

The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the whole WHS and its OUV. It considers the approach to balancing the impacts of the Scheme on attributes of OUV in order to reach an overall conclusion in terms of the impact on the OUV of the WHS is appropriate, and necessary in order to inform the tests required to be undertaken by the Secretary of State.

Integrity as a foundation of OUV

		<p>The Applicant refers Stonehenge Alliance to the concept of the “three pillars of Outstanding Universal Value”, which must be in place for a property to meet the requirements of the World Heritage List:</p> <ul style="list-style-type: none"> • Meet one or more of ten criteria for selection (UNESCO 2017 <i>Operational Guidelines for the Implementation of the World Heritage Convention, para. 77</i> https://whc.unesco.org/en/guidelines/) ; • Meet the conditions of integrity and for cultural and mixed properties, meet the conditions of authenticity; (ibid., para. 78) and • Have an adequate system of protection and management to safeguard its future. (ibid., para. 78). <p>This concept is further illustrated in <i>Managing Cultural World Heritage: World Heritage Resource Manual</i>, Diagram 3, p.35 (UNESCO / ICCROM / ICOMOS / IUCN, 2013; http://openarchive.icomos.org/1465/1/activity-827-1.pdf).</p>
<p>11.2.32</p>	<p>12.3.50 to 12.3.96: The balancing exercise required by the NSPNN is one which takes all considerations into account, not simply those of impacts on attributes of OUV (para.12.3.50).</p> <p>NPSNN paras. 5.132 –134 are relevant in relation to the balancing of substantial and less than substantial harm to designated heritage assets against public benefit. Please see our Written Representation on Alternatives (REP2-134), Section 3.8–22 on non- compliance of the Scheme with the WH Convention, planning policy, etc.</p> <p>Under para. 12.3.68, it is said that the WHS Management Plan at para.11.1.9 mentions the stakeholder reference group set up to inform the A303/A30/A358 corridor feasibility study and the technical group set up within that group – which it does not. The Scheme would obviously not meet the requirement of the Technical Working Group, against which to test options, that “the OUV of the WHS is conserved and enhanced”.</p> <p>In para. 12.3.74, Highways England again shows difficulty in separating the OUV of the WHS from its attributes of OUV.</p>	<p>Obligations under the World Heritage Convention</p> <p>With regard to compliance with the Government’s obligations under the World Heritage Convention, we would refer Stonehenge Alliance to the Applicant’s response to the Examining Authority’s Written Question G.1.1 REP2-021, pp.1-2 to 1-5]. Please also see response to item 11.2.26.</p> <p>Balancing damage to one area of a cultural landscape and enhancement to another</p> <p>With regard to balancing damage to one area of a cultural landscape and enhancement to another, please see response to item 11.2.26.</p> <p>Balancing in NPSNN – balancing of harm to heritage assets against public benefit</p> <p>Highways England refers the Stonehenge Alliance to our response to item 11.2.25. In particular, the Applicant’s Written Summaries of oral submissions at Cultural Heritage Issue Specific Hearings (ISH2), submitted at Deadline 4, Appendix A notes that “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”.</p>

ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011, para. 6.2, https://www.icomos.org/world_heritage/HIA_20110201.pdf) notes that “Every reasonable effort should be made to avoid, eliminate or minimise adverse impacts on attributes that convey OUV and other significant places. Ultimately, however, it may be necessary to balance the public benefit of the proposed change against the harm to the place. In the case of WH properties this balance is crucial”.

We further refer Stonehenge Alliance to our response to comment 11.2.26, noting that “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]”.

Stakeholder reference group

Highways England acknowledge that the cited paragraph number at paragraph 12.6.8 in our Written Representation Response [REP3-013] from the WHS Management Plan 2015 was incorrect. The paragraph number is 11.1.19 in the WHS Management Plan 2015.

Highways England disagrees with Stonehenge Alliance's comment that “The Scheme would obviously not meet the requirement of the Technical Working Group, against which to test options, that “the OUV of the WHS is conserved and enhanced”.

Heritage has been a key consideration during route selection and consultation, being one of the Scheme's objectives to help conserve and enhance the WHS.

The removal of the existing A303 surface road from the WHS landscape will result in extensive benefits for the World Heritage Site (WHS) including beneficial effects to many heritage assets within the WHS as reported in the ES, Chapter 6 [APP-044] and, in the context of the OUV of the WHS, in ES Appendix 6.1, Heritage Impact Assessment (HIA) [APP-195]. Table 3 in the HIA shows the effects that the Scheme would have on the WHS in relation to its Attributes of OUV, Integrity and Authenticity. Overall, the Scheme is

assessed to have a Slight Beneficial effect on the OUV of the WHS as a whole. The OUV of the WHS would be sustained.

Focus on attributes in HIA

The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the WHS and its OUV.

Highways England is concerned to protect and conserve the WHS and sustain its OUV, and has followed the established method by which to assess the impact on the WHS, by assessing the impact on the tangible heritage assets and intangible aspects that convey Attributes of OUV, the values that make it a WHS. This then leads to an assessment of impacts on the Attributes which express the OUV and ultimately assesses the overall effect on OUV and therefore on the WHS.

The HIA was prepared in line with the Guidance on Heritage Impact Assessments for Cultural World Heritage Properties adopted by the International Council on Monuments and Sites (ICOMOS 2011), which aims to deliver relevant assessments. This notes, "Where cultural heritage sections of EIAs clearly do not focus on the attributes of OUV, they would not meet desired standards in managing change at WH properties." (ICOMOS 2011, para. 2-1-7). In accordance with ICOMOS 2011 Guidance, the ES [APP-044] and the HIA [APP-195] are clearly and directly tied to the attributes of OUV (ICOMOS 2011, P. 1, para. 4). The guidance notes that "[HIA] should describe the condition of the whole and of individual attributes and components, physical characteristics, sensitive viewpoints and intangible associations which may relate to attributes. This should focus on areas affected in particular but must include a description of the whole." [ICOMOS 2011, p. 19, para. 5].

ICOMOS Guidance on Heritage Impact Assessments (ICOMOS 2001) notes that "World Heritage sites are thus single heritage assets with an international value that has been clearly articulated. Not everything within them contributes to OUV, but those attributes that do must be appropriately protected. This guidance sets out a methodology to allow HIAs to respond to the needs of World Heritage sites, through considering them as discrete entities and evaluating impact on the attributes of OUV in a systematic and coherent

		<p>way.” (ICOMOS 2011, purpose). “World Heritage properties need to be seen as single entities that manifest OUV. Their OUV is reflected in a range of attributes, and in order to sustain OUV it is those attributes that need to be protected. Thus the HIA process needs to consider the impact of any proposed project or change on those attributes, both individually and collectively, rather than on a standard range of receptors.” (ICOMOS 2011, p. 1).</p> <p>In accordance with ICOMOS 2011 Guidance, the ES [APP-044] and the HIA [APP-195] are clearly and directly tied to the attributes of OUV (ICOMOS 2011, P. 1, para. 4). The HIA has considered the Statement of Outstanding Universal Value, Integrity and Authenticity (SoOUV) adopted by the World Heritage Committee in June 2013 (UNESCO 2013, 291–94), and the Attributes set out in the WHS Management Plan that include the characteristics that convey the values identified in the Statement of OUV [APP-195, para. 5.8.14].</p>
11.2.33	<p>12.3.98 to 12.3.105: Highways England has fundamentally failed to recognise that Blick Mead is a site that is likely to extend along the (ancient) riverbank and that its full extent has not been identified. There can therefore be no certainty that the site will not be impacted upon by the flyover planned beside and possibly over it – potentially impacting upon it both physically and in respect of its setting. The impact of the tunnel engineering on the site is again unknown at present. Furthermore, it ought not to be assumed that tree cover would remain indefinitely.</p>	<p>See paragraph 13.1.5 in 8.31 Comments on Any Further Information requested by the ExA and Received to Deadline 3 [REP4-036] regarding the setting of Blick Mead. The tunnel engineering and the Countess Flyover (the latter following the line of the existing dual carriageway), will not impact upon the Blick Mead site (see ISH2 agenda item 4 (i), (ii) and (iii) discussion [REP4-030] regarding the conclusions of the Preliminary Ground Investigation Report [APP-273, page 53, paragraph 4.2.28 and Table 5.2]). Please also note that the extent of the heritage asset known as Blick Mead is described in Appendix 11.4, Annex 3 Blick Mead Tiered Assessment, Section 2.2 [APP-282], which was reviewed and accepted by Historic England and Wiltshire Council Archaeological Services.</p> <p>The tree-cover is likely to stay for the foreseeable future as it forms part of the Amesbury Abbey Grade II* Registered Park and Garden.</p>
11.2.34	<p>12.3.107 to 12.3.123: We do not withdraw any of the comments we have made about the impacts of the Scheme on Amesbury Abbey and park and associated structures, other Listed buildings, and the setting of Vespasian’s Camp. Highways England accepts that tree</p>	<p>Highways England notes this comment however considers that it has fully responded to this issue before, as per its existing response in paragraphs 12.3.107-12.3.123 of the comments on first written questions submission [REP3-013] .To reiterate, it is not considered that the Scheme would impact upon the setting of the Grade 1 Listed Amesbury Abbey, its Grade II Listed</p>

	<p>cover was not so dense in earlier periods: this situation could arise again.</p> <p>Reconfiguration of the landscape for the Scheme would be highly damaging and undoubtedly be of substantial harm in view of the archaeological sensitivity of the WHS.</p>	<p>Garden Structures and Grade II Registered park and garden. The Setting Assessment (Environmental Statement Appendix 6.9 [APP-218] found that "there would be an impact on the northern boundary and part of the eastern boundary of Amesbury Abbey RPG as a result of the Scheme. However, that impact would not extend far into the RPG due to screening provided by the dense vegetation that covers the majority of the northern part of the asset. The settings of the majority of assets would be unchanged as a result of the Scheme" [APP-219, para 3.4.10].</p> <p>As above at response to item 11.2.33 the tree-cover is likely to stay for the foreseeable future as it forms part of the Amesbury Abbey Grade II* Registered Park and Garden.</p> <p>Highways England do not agree that the Scheme will cause substantial harm to the WHS. The positions of the tunnel portals have been optimised at the head of dry valleys in the landscape and the road (and traffic on it), hidden within deep retained cuttings that minimise landtake, views, reduces noise and improves the tranquillity of the WHS. The further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal extend the tunnel from 3km to almost 3.3km and aid landscape integration. Chalk grassland over the Eastern Portal canopy, the existing A303 alignment and to the north and south of the cutting, together soften views of the cutting and aid its visual integration within the landscape. Furthermore, we refer to Table 3 in the Heritage Impact Assessment [APP-195], which shows the effects that the Scheme would have on the WHS in relation to its Attributes of OUV, Integrity and Authenticity. The table also shows how the Scheme would benefit the WHS in comparison with the effects of the existing A303. Overall, the Scheme is assessed to have a Slight Beneficial effect on the OUV of the WHS as a whole. The OUV of the WHS would be sustained.</p>
<p>11.2.35</p>	<p>12.2.124 to 12.3.128: Parts of the Bronze Age settlement and associated remains are extant. The fact that parts of the later prehistoric boundary monument are unscheduled does not diminish their importance in the archaeological record associated with the WHS.</p>	<p>See response at paragraph 12.3.125 in relation to Highways England's position – Comments on Written Representations [REP3-013] regarding the Bronze Age settlement. The Late Bronze Age settlement was archaeologically excavated in advance of the construction of the present roundabout in 1967. The excavation revealed four circular features thought to be Late Bronze Age huts in the area of the roundabout and a number of pits south of the A303 (Heritage Impact Assessment, Environmental Statement</p>

Our reference was to barrows W of the A360 and between c.400m and 500m N of the A303. Again, levelling/above-ground destruction does not mean that the earthworks or associated archaeology are necessarily of little importance for further investigation or research.

Appendix 6.1, p. 451 [APP-195]). Archaeological evaluation on the line of the realigned A360 northwest of the existing Longbarrow roundabout identified Bronze Age features suggesting activity on the periphery of a more densely-occupied area to the east [REP1-042, 043].

Regarding the linear boundary, see Highways England's response to the First Written Questions from the Examining Authority - CH.1.42 [REP2-025]. As noted in Environmental Statement Appendix 6.8 - Cultural Heritage - Summary of non-significant effects [APP-217, Table 1.2], the proposed Scheme would impact upon the high value asset due to the realigned A360 North and the cutting approach to the Western Portal. Approximately 35m of the ditch would be removed by the realigned A360, and a c. 25m length would be removed by the cutting approaching the Western Portal. Mitigation measures comprise archaeological investigation along the mainline cutting in advance of construction, and preservation in situ under compound areas. The impact magnitude following mitigation is assessed as Minor, resulting in a Slight Adverse permanent residual effect. The linear feature is a Late Bronze Age boundary. Consequently, it does not convey the Attributes of Outstanding Universal Value (OUV), as the Statement of OUV (UNESCO 2013, 291–94) clearly sets out that those sites that contribute to OUV relate to monuments that were built c. 3700 to 1600 BC, i.e. the Early Neolithic to the Early Bronze Age (inclusive) (Environmental Statement Appendix 6.1 - Heritage Impact Assessment [APP-195, para. 5.10.29]).

Regarding the non-designated barrow west of the A360 and between c.400m and 500m north of the A303 (UID 2148) (referred to by the Stonehenge Alliance as barrows W of the A360), it is an isolated barrow and it is not considered to form part of the ridge line Asset Group 12, Winterbourne Stoke Crossroads Barrows.

Highways England do not state at paragraph 12.3.128 that levelling/above-ground destruction means that the barrow or associated archaeology are of little importance for further investigation or research - we simply state that this activity upon the barrow means that its current setting does not greatly add to the understanding or appreciation of the asset.

11.2.36	12.3.130 to 12.3.145: We see no reason to retract our statements reproduced at paras. 12.3.129, 12.3.131 12.3.135, and 12.3.139.	Highways England notes the Stonehenge Alliance’s position; however, considers that it has fully responded to these issues before, as per its existing responses in paragraphs 12.3.130, 12.3.132-134, 12.3.136-12.3.138 and 12.3.140-12.3.145.
11.2.37	12.3.181 to 12.3.196: Specialist archaeologists have confirmed, contrary to Highways England’s assertions concerning the area of the proposed western cutting, that the archaeology here is of very high importance indeed. This evidence would be destroyed by the cutting and any additional land take needed for the green bridge and canopy.	<p>Highways England refers to our existing response at 12.3.181 - 12.3.196 of our Comments on Written Representations [REP3-013]. The area of the western cutting has been surveyed extensively, and the preferred route for the Scheme was selected to avoid known archaeological remains, important sites and monuments. Subsequent design development at the western tunnel approach, including mitigation measures to limit or avoid impacts, has been informed by a comprehensive programme of archaeological evaluation surveys.</p> <p>Within the footprint of the retained cutting, the evidence does not suggest extensive long-term settlement that can be categorically linked to the construction of Stonehenge. There is also no evidence for any dense burial groups, flat grave cemeteries, burial monuments/ other monuments of Neolithic or Early Bronze Age date within the Scheme construction footprint for the western portal or the approach cutting [see paragraph 12.3.189 of REP3-013]. The archaeological evidence constitutes flint scatters fully incorporated within the ploughzone and scattered isolated pits. We disagree that this archaeology is of the very highest importance, however note that suitable mitigation is provided as part of the Scheme documentation including provision for the archaeological remains to be recorded as part of an intelligent, reflexive and iterative archaeological mitigation strategy which is being developed in consultation with HMAG and the Scientific Committee and which is as set out in the draft DAMS submitted at DL4 [REP4-024]. The draft DAMS will continue to develop through the course of the examination.</p>
11.2.38	12.4.2 to 12.4.17: We submit that it is vital to know the detail as part of the DCO application in points raised by us in this section, most notably in relation to any need for ground stabilisers that might be required at the tunnel portals and the potential for subsidence (12.4.11ff). We do not consider that details of this kind	<p>Highways England notes the Stonehenge Alliance’s comments and refers to the existing response set out at 12.4.12 to 12.4.17 [REP3-013]. This confirms the following:</p> <ul style="list-style-type: none"> i. The Detailed Archaeological Mitigation Strategy (DAMS) [REP4-024, paras. 5.1.16 - 5.1.20 & 6.1.5 - 6.1.19] and Outline Environmental

should be left to the contractor to determine, especially if in response to unforeseen/unexpected damage to archaeological remains arising from vibration or subsidence. Not only does it leave significant uncertainty in relation to the safety of archaeological remains within the WHS, it also gives rise to concern about mounting costs for any contractor (and ultimately the UK Government) should unexpected problems arise.

“Crossrail” chalk is not the same as the phosphatic chalk at Stonehenge.

Use of a TBM may minimize the risk of direct physical impacts on archaeology but does not exclude it. What happens if unacceptable levels of settlement occur once the TBM has been launched?

We do not know how much ground movement and vibration monitoring equipment would be employed, what it would look like and what physical interventions would be required in its operation.

There is no clear indication of how actions to control/mitigate impacts arising from settlement or vibration would be dealt with should they occur. “Ground stabilization measures including grouting” might be necessary from the surface and this is hardly likely to be appropriate in an archaeological landscape. Subsidence at ground surface would likely require grouting from surface, not from within the tunnel, whatever the “preference” might be.

Management Plan (OEMP) [REP4-020] require the development of Heritage Management Plans which will indicate how the historic environment is to be protected in a consistent and integrated manner. This will be developed in consultation with the Heritage Monitoring and Advisory Group. Please note that compliance with both the DAMS and the OEMP is secured in the development consent order [REP4-024]: (a) compliance with the OEMP is secured through the requirement contained in paragraph 4 of Schedule 2; and (b) compliance with the DAMS is secured by paragraph 5 of Schedule 2 of the draft development consent order

- ii. The use of a closed-face TBM for the main tunnel construction to control excavation induced ground movement and vibration. The use of a closed-face TBM for the main bored tunnels has now been confirmed in the revised OEMP as submitted at Deadline 4 item D-CH-32 [REP4-020].
- iii. The development of contingencies using a suite of tool-box items ranging from further site investigation, assessment and monitoring during construction to ensure the protection of archaeology. Ground stabilisation, including at the portals, will be undertaken in preference to surface intervention where it is safe and practicable to do so.
- iv. The Heritage Impact Assessment considers the potential vibration impacts, with mitigation embedded in the bored tunnel design [APP-195, para. 5.3.34; 9.2.5 - 9.2.9].
- v. The OEMP sets out the principles for the control, mitigation and monitoring of potential construction impacts. As per our response to item 11.1.7, the current predictions are considered conservative and make no allowance for vibration dampening due to the use of a closed-face TBM and propagation through the fractured chalk.
- vi. The predicted effects of excavation-induced ground settlement have been considered using a staged assessment to determine the zone of influence of tunnelling. Monitoring and trigger levels will be implemented to control the works such that acceptable levels are not breached.

The engineering properties of the phosphatic chalk have been and will continue to be characterised as part of the assessment of the range and variation in ground conditions across the tunnel horizon; the difference between phosphatic chalk and 'Crossrail' chalk is understood, however phosphatic chalk is expected to form only a small proportion of the excavated volume and it may be possible to avoid phosphatic chalk during this stage of tunnel operations, which will become known at detailed design stage. Irrespective of this, the variation in geology and hydrogeology along the alignment will be established in detail by an experienced and highly competent tunnel Contractor to minimise the risk to the archaeology but will not change the selection of the closed-face TBM as being most appropriate in this location. Ground stabilisation is possible from within the tunnel alignment and has been demonstrated on numerous tunnelling projects.

The Applicant also notes its responses that were given at the Issue Specific Hearing on cultural heritage, as set out in the written summary for ISH 2 [REP4-030] at DAMS paragraph 4.2.6. For instance, in response to a request for further details regarding appearance, location and operation of the tunnel movement monitoring stations, it was 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. [The Applicant] 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."*

In response to a question asking what would happen if monitoring indicated that there would be movement, the Applicant responded: *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. [The Applicant] 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. [The Applicant] 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. [The Applicant] 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).

CONSULTATION OF THE SCHEME

11.2.39	18.1.3: We continue to disagree with Highways England re Consideration 24 of the EU EIA Directive, for reasons set out in our Written Representation (WR).	Highways England's notes the comment however refers the Examining Authority to its existing response at 18.1.3 and 18.1.5 [REP3-013], which explains how Consideration 24 of the EU EIA Directive is met. The Examining Authority advised that the Inspectorate had already taken its decision on the acceptance of the application [EV-001] and the adequacy of the Applicant's Pre-application Consultation.
11.2.40	<p>18.1.6: Highways England may have "taken into account" the recommendations of relevant international bodies but it has not acted on their recommendations. For example:</p> <p><i>"If a surface [bypass] route is not possible, a longer tunnel is needed, which removes or at least substantially reduces the proposed lengths of dual carriageway within the property, in order to avoid the impact on the integrity, authenticity and OUV of the property" . . . "a tunnel portal much further to the east, completely outside the property, could better protect the OUV of the property from the impact of associated dual carriageways . . . if a tunnel solution is pursued, the western portal should be re-located outside the western boundary to avoid dual carriageways within this part of the property."</i> (Analysis and conclusion by the WH Centre and Advisory Bodies to the 2018 WH Committee). Great weight should be given to the recommendations of international bodies with particular expertise in</p>	<p>The Applicant respectfully reiterates that the recommendations of relevant international bodies have been acted upon, where feasible. The heritage considerations which have influenced the design of the Scheme are described in HIA Section 8.2, Iterative design and embedded mitigation. Key design developments are summarised in HIA Table 9: Design changes to the Scheme within the WHS in response to cultural heritage concerns". [APP-195, para. 3.7.10].</p> <p>The Applicant's response to the Examining Authority's Written Question AL1.29 – 32 inclusive [REP2-024] explain the longer tunnel options that were considered in response to UNESCO/ ICOMOS comments and explain why they were determined to be less preferable than the Scheme option by reference to a full appraisal on a range of grounds.</p>

	World Heritage matters. There is no evidence that such weight has been “taken into account”.	
11.2.41	<p>18.1.25 to 18.1.28 and 18.1.43 to 18.1.44: Our views are unchanged on the lack of options for consultation and inadequate description of rejected routes for comparison with the preferred route, as set out in our WR on Alternatives (REP2-134).</p> <p>We submit that no full options appraisal has been undertaken for the Scheme, again as set out in our Written Representation. It is perhaps relevant to mention that there have been numerous changes, notably in planning policy and national and international guidance for the WHS since 1991; also in increased knowledge about the WHS, its archaeology and biodiversity, the latter notably in relation to the establishment of the Normanton Down reserve used by Stone Curlew. These considerations give obvious weight to the need to offer an option for consultation that involved no damage to the WHS.</p>	<p>Highways England's response to Written Question AL.1.29 [REP2-024] explains why the options appraisal carried out should be regarded as a full options appraisal and a proportionate option consideration of alternatives.</p> <p>In their Written Representations Stonehenge Alliance raised a number of challenges to the option identification and selection process and subsequent consultations. Highways England responded to these at deadline 3 in the Comments on Written Representations [REP3-013, section 18]. Further explanation was provided at the Issue Specific Hearing (ISH6) for Traffic and Transport on 13th June 2019 under agenda item 7.1 as recorded in the Written Summary of Oral Submissions [REP4-034].</p>
11.2.42	<p>18.1.30 to 18.1.31: Our Written Representation provides unequivocal evidence that misleading statements about the Scheme have been presented to the public. As mentioned above, insufficient information has been supplied in consultation documents for informed comparison between options rejected and the preferred route.</p>	<p>Highways England maintain the position as stated in their response to items 18.1.30 and 18.1.31 in the Comments on Written Representations [REP3-013] in that the application for development consent submitted by Highways England was accepted by the Planning Inspectorate, on behalf of the Secretary of State for Transport, who, after the 28-day formal acceptance period, concluded that it met the standards required to progress to examination. As part of the consideration to formally accept the application for examination, the Secretary of State needed to have been satisfied that the application documents contained adequate information on the Scheme. The development of the Scheme has been fully and properly undertaken, without misleading statements and informed by consultations with all views expressed being taken into consideration as set out in the Consultation Report [APP-026].</p>

11.2.43	<p>18.1.33 to 18.1.34: Once again, Highways England says that the views of consultees were “taken into account”. The majority of consultees firmly objected to the Scheme, many of them because of the damage it would cause to the WHS: their views were not acted upon and the Scheme was not changed to ensure no damage to the WHS. The extreme sensitivity of the Scheme affecting an internationally renowned WHS leaves our opinion unchanged that consultation was not wide enough, nor detailed enough.</p> <p>We submit that the “wide spread of non-local response” was in large part owing to the efforts of the Stonehenge Alliance and Friends of the Earth in alerting a wider community.</p> <p>Highways England’s “Disappearing Road” video is not an accurate representation of the effects of the Scheme.</p>	<p>Highways England notes Stonehenge Alliance's comments and refers to the existing response as set out in paragraphs 18.1.33 through to 18.1.38 in the Comments on Written Representations [REP3-013].</p> <p>The material published for statutory consultation was based on the information available at that time and was sufficient to satisfy the purpose of gaining feedback on the Scheme proposals and for that feedback to be taken into consideration as part of the continuing development of the Scheme up to the time of submitting the DCO application.</p> <p>Reflecting wider interest, an exhibition was held in central London. The consultation was also advertised extensively, using national and local media, and the material was available on the Scheme website for the wider audience, as set out in the Statement of Community Consultation, Appendix C of the Consultation Report [APP-029].</p> <p>All views made have been taken into account as part of the development of the Scheme as explained in the Consultation Report [APP-026].</p> <p>The majority of consultation responses may have expressed concerns regarding the Scheme, but these concerns do not necessarily reflect an outright rejection of the scheme proposals, or the option selected. The purpose of the consultation was not to hold a vote on whether or not the Scheme should go ahead – it was to provide an opportunity for feedback to inform the development of the Scheme prior to application.</p>
TRANSPORT PLANNING AND ECONOMICS		
11.2.44	<p>16.1.4 to 16.1.5: Highways England’s assumption that Stonehenge Alliance’s criticism of the lack of an assessment of the whole corridor programme refers only to the three projects contained in Road Investment Strategy 1 is not correct. We consider that there is an urgent need for a full assessment of the economic and environmental impacts of the full programme to create a continuous dual carriageway Expressway between the M3 and M5. In paragraph 16.4.2 of their response, Highways England highlight that “<i>the Scheme is part of the Government’s programme of improvements</i>”</p>	<p>As explained in Highways England’s response to the first round of written questions [REP2-035] SE.1.13 paragraph 2, the NPSNN paragraphs 4.6 and 4.7 mandate adherence to WebTAG methodology which in turn sets out criteria that should be applied in considering which schemes should be included in forecasting assumptions. The application of this methodology is demonstrated in the uncertainty log set out in Appendix A of the Transport Forecasting Package [APP-301]. The A303 Sparkford to Ilchester, A358 Taunton to Southfields reach the thresholds of certainty specified and were included in the forecasting assumptions.</p>

	<p><i>along the A303/A358 corridor designed to upgrade the route to a high-quality dual carriageway” and this is what should be assessed. While we do not agree that the programme will generate great benefits, it is clear that any significant benefits that do arise will only be unlocked once the programme is completed. Otherwise the main effect is likely to be to move summer peak congestion from the upgraded route section to other locations on the corridor. Therefore, we consider that the A303 Stonehenge project should be judged both on its own merits and as part of the overall corridor programme. Accordingly, we consider that it is vital that Highways England provides a business case and environmental assessment for the overall programme, so that the Inquiry can assess whether it is worthwhile. From the information provided in the recent National Audit Office report (National Audit Office, “Improving the A303 Between Amesbury and Berwick Down”, May 2019), we consider that it is unlikely that this will demonstrate a positive case for the programme.</i></p>	<p>The traffic forecasting appropriately reflects constraints along the A303 /A358 corridor including the extent to which traffic induced by the scheme would have impacts along the corridor as explained in the Combined Modelling and Appraisal Report (ComMA) documentation [APP-299]. We would also observe that the National Audit Office (NAO) in their audit [https://www.nao.org.uk/wp-content/uploads/2019/05/Improving-the-A303-between-Amesbury-and-Berwick-Down.pdf] recognise in paragraphs 2.12-13 that it is appropriate to promote schemes on their own merit.</p>
11.2.45	<p>16.2.14 to 16.2.20: In Paragraph 16.2.19, Highways England refer to the Technical Note contained in Appendix 8.5 to the Transport Assessment being an update of an earlier Note prepared during the corridor feasibility study. We have not seen this earlier Note, but it is clear that the Feasibility Study was wholly oriented to developing road-based solutions, as noted in Paragraph 4.2.1 of our Written Representation, which Highways England have not challenged.</p>	<p>Highways England's response is set out in section 16.2.14 of the Comments on Written Representations [REP3-013] and explains the staged assessment process and how appropriate consideration has been given to modal alternatives.</p>
11.2.46	<p>16.2.14 to 16.2.20: Highways England dispute (paragraph 6.2.20) Stonehenge Alliance’s assertion that they tested the public transport alternative against the requirement that it reduced the stress level on A303 to the level forecast for the Do Something (0.53). However this is specifically stated as a requirement in paragraph 3.6.2 of the Technical Note and this is referred to again in the conclusions (paragraph 6.2.2).</p>	<p>Highways England's response to Written Question Tr.1.37 [REP2-036] explains why rail would not be a viable option.</p> <p>The paragraph referred to by SHA does not express the Congestion Reference Flow as targets; although it is acknowledged that the heading of the section may be the reason why the discussion appears to have been misconstrued by Stonehenge Alliance.</p>

11.2.47	<p>16.2.23 to 16.2.25: In paragraph 16.2.25, Highways England state that the alleged greater impact of Option F10 on local communities was not a deciding factor in this option being dropped. However this is contradicted by para.4.5.7 of the Scheme Assessment Report which (in discussing the traffic impacts of the options) states “<i>the modelling also indicated that the longer F010 route option would lead to more long-distance traffic using the local road network (rat running), more than doubling the volume of traffic currently diverting through the villages of Durrington, Larkhill and Shrewton.</i>” This may not have been the sole factor which led to F10 being dropped, but it was clearly a factor. In any case, the statement above is inconsistent with Highways England’s own modelling, as noted in our response to Highways England’s answer to the Examining Authority’s Question AL.1.11.</p>	<p>The basis of the decision for dropping route F10 is summarised in Highways England’s responses to Written Questions AL.1.11, 12 and 13 [REP2-024], which explain the relative merits of corridors D and F and conclude ‘<i>Consequently, while acknowledging the benefits to the WHS of option F010, the TAR concluded [REP1-31 para 22.1.5] that, on balance, Route Options D061 and D062 would deliver a better fit against the relevant local and national planning, transport and economic policy objectives, than Route Option F010, and thus they would achieve the scheme objectives more effectively.</i>’</p> <p>Highways England has previously (at Deadline 4) commented on Stonehenge Alliance’s response to Highways England’s answer to the Examining Authority’s Question AL.1.11. This comment can be found in Sections 11.1.3 in Comments on any further information requested by the ExA and received to Deadline 3 [REP4-036] explaining that appropriate assessment was undertaken. The response to AL.1.11 explains that “<i>The longer distance and alignment of F010 make this option less attractive for local movements than D061 / D062 and it is more likely that trips making local movements, including HGV’s, will use the local roads north of the A303.</i>”</p>
11.2.48	<p>16.2.28 to 16.2.29: In Paragraph 16.2.29, Highways England acknowledge that options that avoid the World Heritage Site completely would bring greater benefits than those that pass through it. However there is no evidence that this was applied in estimating the Benefit to Cost Ratios of Options D61, D62 and F10.</p> <p>In addition we note that paragraph 16.2.29 highlights that adverse impacts of route F010 are supposed to include that it “<i>would not interact effectively with the local road network, would result in higher levels of rat-running traffic, adversely affecting the quality of life in local communities...</i>” As noted above, this contradicts the results of their own modelling and is inconsistent with their assertion that it was not a determining factor in the dropping of this option, as stated in paragraph 16.2.25.</p>	<p>The basis of the decision for dropping route F10 is summarised in Written Question AL.1.12 [REP2-024]. Paragraphs 20-22 of AL.1.11 explain why the F10 route would interact less effectively with the local route network: “<i>The longer distance and alignment of F010 make this option less attractive for local movements than D061 / D062 and it is more likely that trips making local movements, including HGV’s, will use the local roads north of the A303.</i>”</p>

11.2.49

16.3.1 to 16.3.5: Highways England concede that the project will increase CO² emissions and our position remains that it is inappropriate to implement schemes that have this effect, as set out in our Written Representation. However this was prepared before Parliament declared a Climate Emergency, and before the Prime Minister committed the UK to becoming a zero net emitter of CO² by 2050. These recent developments further support and reinforce our position.

The Government's Road Investment Strategy (2015) page 55 sets out priorities for improvements to the strategic road network, consistent with the NPSNN. This document confirmed the improvement of the A303 between Amesbury and Berwick Down as a priority project.

In section 3.6 page 25 it is recognised that transport has an important part to play if the government is to meet its legally binding carbon targets. It is acknowledged that a key part of this will be a shift to greener technologies and fuels with the largest reduction in emissions likely to come from domestic transport due to efficiency improvement in conventional vehicles. Specific reference is made to the carbon emissions reduction in cars and vans due to EU targets for CO₂ performance.

Section 3.8, page 25 states that *'the annual CO₂ impacts from delivering a programme of investment on the Strategic Road Network of the scale envisaged in Investing in Britain's Future amount to well below 0.1% of average annual carbon emissions allowed in the fourth carbon budget. This would be outweighed by additional support for ULEVs also identified as overall policy.'*

As is set out in Chapter 14 of the ES, the Scheme assessment of carbon emissions ("GHG") concludes that the Scheme will not have a material impact on the ability of the UK Government to meet its carbon reduction targets (paragraph 14.9.11[APP-52]).

Highways England notes that a climate emergency was declared by the UK Parliament in the House of Commons on 01 May 2019, and that the UK Government has this month committed to introducing legislation that would require the UK to achieve net zero carbon emissions by 2050. A similar declaration was also made by Wiltshire Council in February 2019. As these specific statements followed the preparation and submission of the Scheme proposal in October 2018, Highways England welcomes the opportunity to comment on these specific climate change statements now.

Whilst "climate emergency" is not itself defined in the declarations, a common theme of the declarations is to seek to reduce UK carbon emissions. Whilst the declarations do not of themselves create binding obligations, the UK is committed to achieving existing national and international commitments to reducing carbon emissions. In order to ensure compliance with these targets,

		<p>Highways England has thoroughly and robustly assessed the Scheme's effect on climate change.</p> <p>For instance, this assessment established that even during the period when carbon emissions from the project will be at their highest level, the project will only contribute to 0.023% of the UK's carbon budget for the relevant carbon budget period (the 4th carbon budget period). During Scheme operation, the Scheme's carbon emissions will equate to an extremely marginal 0.008% of the UK's carbon budget for the 5th carbon budget period (please see response to item CC.1.6 in the Examining Authority's Written Questions [REP2-028]). Highways England also notes paragraph 5.17 of the National Policy Statement for National Networks (NPSNN) which states that it is "very unlikely that a road project will in isolation affect the ability of Government to meet its carbon reduction plans". In the context of the Scheme, we agree with that statement and that this Scheme is assessed and demonstrated to be such a policy compliant case.</p> <p>Highways England consider climate change to be a very important issue, as such it has conducted a thorough assessment of the impact of the Scheme on climate change. The recent declarations made by the UK Parliament do not give cause to alter the conclusions of the ES assessment and the Scheme will make an extremely limited contribution to the UK's carbon targets.</p>
11.2.50	<p>16.4.10 to 16.4.16: Highways England refer to Table TRA0202 of "Transport Statistics Great Britain" (which they incorrectly call "Passenger Statistics Great Britain") and highlight an increase in traffic on rural "A" roads between 2000 and 2017. As we note in paragraph 3.3.4 there seems to have been a peak in vehicle use around 2004, with little growth since then. This is consistent with evidence from the A303 corridor. Comparing 2017 to 2004 gives 12% growth rather than the 22% that Highways England quote for the period since 2000, with this mainly occurring in the last few years, during a period when the Government has suspended increases in fuel duty, while raising regulated rail fares by more than CPI inflation.</p>	<p>Highways England notes that Stonehenge Alliance's response now appears to agree that the use of national traffic data, including urban travel was inappropriate and accept that traffic is growing on the interurban strategic road network.</p> <p>Highways England would agree that there are a range of factors influencing traffic growth, and would note that the Stonehenge Alliance sets out a partial view, in particular omitting mention of the economic drivers from the 2008/9 recession.</p>

11.2.51	<p>16.4.24 to 16.4.28: In paragraph 16.4.28, Highways England suggests that that improved driver information would, “by definition”, result in rat-running along inappropriate routes if the A303 is blocked. This is not the case. If implemented effectively drivers could be diverted away from A303 further from the blocked section on to more appropriate main roads. The current lack of driver information systems means that drivers are poorly informed about delays until they are close to the affected location and then choose to use whatever alternatives appear to be available, however inappropriate.</p>	<p>Highways England has demonstrated in its response to the Examining Authority's Written Questions [TR.1.8, REP2-036] that there is congestion on the A303 across a range of days of the year. It is currently the case that users of the route are aware that it can be severely congested on a range of days across the year. The ONS indicate that in 2017 90% of UK households had internet access, with 73% of adults having access to internet ‘on the go’. This therefore means that a large proportion of the population currently have the ability to access online route planning tools that would show when there is congestion on the A303 and can indicate alternate routes including appropriate routes further away from the A303 if viable routes exist. As such, additional driver information is unlikely to have the effect suggested by Stonehenge Alliance. The speculative discussion provided by SHA that the problems might somehow be managed by such means can therefore not be given credence.</p>
11.2.52	<p>16.4.34 to 16.4.35: Highways England agree that 3,000 of the extra 7,800 trips predicted by their model are induced and a further 1,000 divert from the M4 and A31. However a further 1,000 net trips divert from other A roads, leading to a total of 64% (i.e. almost two-thirds) of the extra traffic either being induced, or diverted from other main roads, as stated in our Written Representation.</p>	<p>The Stonehenge Alliance response to this point is noted.</p>
11.2.53	<p>16.4.78 to 16.4.79: In their response, Highways England refer to modelled journey times between Junction 13 of the M25 and Junction 29 of the M5. It is important to recognise that they have not modelled the full A303 programme, only the three projects included in Road Investment Strategy 1. Implementation of the remaining five projects could be expected to divert more traffic onto the route. Additionally, as noted above, the modelled journey times on the M3 are not affected by changes in traffic flow, so the model is not reliable for assessing journey times for this part of the route.</p>	<p>As explained in Highways England’s response to the first round of written questions [REP2-035] SE.1.13 paragraph 2, the NPSNN paragraphs 4.6 and 4.7 mandate adherence to WebTAG methodology which in turn sets out criteria that should be applied in considering which schemes should be included in forecasting assumptions. The application of this methodology is demonstrated in the uncertainty log set out in Appendix A of the Transport Forecasting Package [APP-301]. The A303 Sparkford to Ilchester, A358 Taunton to Southfields reach the thresholds of certainty specified and were included in the forecasting assumptions. The five remaining schemes are not sufficiently developed, are not part of the current RIS programme and do not have sufficient certainty to be included in the assessment. These schemes are therefore excluded from the assessment.</p>

The scheme is forecast to increase traffic flows on the M3 by approximately 2% ; meaning that any congestion arising on the M3 as a result of traffic induced by the scheme would be negligible.

As noted in item 3.1 of the written summaries of the oral submissions to the Traffic and Transport issue specific hearing [REP4-034]:

Currently the journey time using this section of the M3 (from Junction 4 near Frimley to Junction 2 near Thorpe Green) is around 12 minutes for most of the day. Congestion typically adds up to 5 minutes to travel times at around 8am eastbound and 5pm westbound on weekdays.

For the 12% of A303 traffic routing to or from the south-east of the M3, the route using the A303 is typically about 20 minutes faster than the more extended journey using the M4 / M5 to the point where the routes combine on the M5 near Exeter. The uncertainty from the simplified method of representing journey time for vehicles using this section of the M3 section is too small for there to be significant rerouting to the M4 / M5.

This leaves approximately 20% of A303 traffic which routes north-east of the M3. For these trips the difference in journey time between the M4 and the A303 routes is smaller and the routing may be sensitive to uncertainty in the accuracy with which journey time on the M3 near the M25 is represented.

In terms of journey time the M3 section of the route between the M25 Junction 13 and M5 Junction 29 represents about 7% of the total journey time.

In conclusion, the methods applied do reflect congestion forecast on the M3 east of the fully modelled area. Analysis of the modelled data confirms that extent of interaction between the scheme and this section of the M3 is very small and confirm appropriate proportionate decisions were taken on definition of model extent in this regard. Uncertainty associated with the simplified modelling of this section of the M3 would have no material implications for the assessment of the scheme.

11.2.54	As noted in paragraph 2.1 [item 11.2.44] above, the Government intends to upgrade the whole A303/A358 corridor to Expressway standard. In Stonehenge Alliance's view, it is essential to consider the impact of the whole programme on emissions before approval is given for the project. As we note in paragraph 4.1 [item 11.2.49], it is inappropriate to give consent to schemes which increase emissions, and even more so if they form part of a programme with larger cumulative impacts.	See response to item 11.2.49 above.
FLOOD RISK, GROUNDWATER PROTECTION AND LAND CONTAMINATION Points raised by Stonehenge Alliance in this section of their submission have already been covered by responses to comments raised in the oral submission summary submission from the ISHs – see first 5 points at the top of this table. Additional points raised are detailed below.		
11.2.55	17.3.3: Although leaching tests of the Phosphatic Chalk have been carried out for Highways England, they are rather basic and simplistic in that potential changes in groundwater and surface water chemistry (specifically with varying Ph and Dissolved Oxygen levels) have not been extensively investigated.	<p>The leachate tests described in Chapter 10 of the ES [APP-048] and in Appendix 10.1 [APP-273] were undertaken in accordance with the British Standard BS EN 12457-2 methodology. This is a vigorous end-over-end shake test in a glass vial, on specimens sieved and / or ground to a small fraction (<4mm). The sample is then introduced to the leachant at a leachant to solids ratio of 10:1 de-ionised oxygenated water at pH 7 / kg material. The sample in its leachant is then agitated for 24.5 hours using an end-over-end tumbler or a roller table (5 -10 revolutions per minute). The method therefore maximises potential for the release of a solute from the specimen, which contrasts with the nature of the material present either in the ground or placed as fill. Thus the leach test will give a solute which is comparatively rich compared with the solute emerging from infiltration through the material when placed.</p> <p>Since the ES submission, a package of ground investigation referred to as Phase 6 has been undertaken which included additional Phosphatic Chalk leachate testing. Local rainwater chemistry was taken into account by using a pH 6.2 dilution for some of the specimens, which accounts for the slightly acid rain water plus some interaction with the soil substrate. Thus Highways England has been conservative, but also site specific in the adopted pH used in the test. Five pairs of duplicate samples were analysed using a standard pH 7 and a pH 6.2 dilution in accordance with the BS EN 12457-1 methodology as part of the Phase 6 investigation. This leachate preparation</p>

		<p>method uses a leachant to solids ratio of 2:1, which is more conservative as there is less dilution. The recorded orthophosphate concentrations were at or below the method of detection limit (0.5mg/l) in all samples, indicating that the solubility of phosphorus in Phosphatic Chalk does not appear to be measurably effected by varying pH levels.</p> <p>The oxygenated water used for the test is considered reasonably representative of the local surface waters and ground waters which are oxygenated. The results of dissolved oxygen concentrations measured in groundwater and surface water can be found in Appendix 11.4 (Groundwater Risk Assessment) [AS-017] to ES Chapter 11, these show water to be well oxygenated.</p> <p>In Appendix 11.4, paragraphs 3.10.8 to 3.10.14 set out Highways England's further assessment of the Phosphatic Chalk mineralogy and solubility. Dissolved phosphates in groundwater and surface water samples have been measured and the results indicate that solubility of mineral phosphate is low. Nevertheless, the method used in leachability tests completed on the soil samples imposes more rigorous conditions with higher solubility potential than in the in-situ conditions and are therefore considered to be conservative.</p> <p>The Factual Report containing the results of the Phase 6 leachate testing will be submitted at Deadline 6 of the Examination.</p>
11.2.56	<p>17.3.6: More detailed and specific designs (with alternatives) [to emergency measures involving grouting and ground stabilisation] would be expected at the Examination stage of such a major scheme. It is, as stated above, fundamentally unacceptable to put the onus and responsibility for this aspect of investigation and interpretation of Highways England data onto Tenderers and Contractors.</p> <p>If this is done, escalating costs through numerous claims, down-time (with attendant risk of formation collapse and subsidence and considerable delays in progress) can only be predicted and expected.</p>	<p>Please see the Applicant's response to the following agenda items in the Written Summary of Oral Submissions: item 5.1 from ISH4 Flood risk, Groundwater, Geology and Waste [REP4-032]; item 6 (iii) from ISH5 regarding Noise, Vibration, Health and Wellbeing [REP4-033], and the response to Written Question Fg.1.5 [REP2-031].</p> <p>In developing the preliminary design provided in support of the DCO application, the Applicant has followed best practice as embodied in the Institution of Civil Engineers (ICE)/British Tunnelling Association (BTS) Joint Code of Practice for the Risk Management of Tunnel Works (ACOP) to:</p> <ol style="list-style-type: none"> a) Undertake hazard identification and the management of risk to ensure their reduction to a level 'as low as reasonably practicable' as an integral consideration in the design, procurement and construction of the tunnel works.

- b) Promote and secure best practice for the minimisation and management of risk as part of the Insurance of the works.
- c) Undertake suitable and sufficient site investigation phased appropriately to the pertaining physical and geological environments.

The preliminary design of the Scheme has been prepared in accordance with the ACOP and taking full cognisance of the Construction (Design & Management) Regulations and BS6164 Code of Practice for Safety in Tunnelling.

The Applicant considers that it is neither unusual or unacceptable to require the expert Contractor to plan and take responsibility for the continuation of investigations and detailed design including grouting, ground stabilisation and toolbox measures as part of their further risk management and procurement of the works. These measures are standard practice in tunnelling and include:

- i. The maintenance of slurry face pressures using a closed-face TBM for the main bores to support the ground, resist groundwater pressures, limit settlement and protect the workforce during tunnelling.
- ii. 'Tailskin' or backfill grouting of the annular gap to the lining segments using specialist grout designed for the specific site conditions.
- iii. Provision of means as necessary for detecting of the ground in front of the TBM including forward probing and geophysics.
- iv. Provision of means for ground stabilisation from the tunnel horizon using specialist techniques including for the cross-passage construction, for example using fissure grouting, local face depressurisation and enhanced ground support using pipe umbrellas or piles.
- v. Provision and use of specialist grout to an approved material specification using set accelerators and controlled injection pressures for the specific site conditions.
- vi. Provision of sensors on the TBM to measure performance of tunnelling including measurement of the annular void and volume of

arisings to permit validation from surface monitoring and back-calculation against predicted settlement.

The preliminary design completed in support of the DCO has confirmed the main source of mitigation during tunnelling to be embodied within the selection of the closed-face TBM which can deal with the variation in hydrogeology and geology including the phosphatic chalk and any voids/features therein. The use of a closed face TBM is required through measure D-CH32 in the OEMP [REP4-021], compliance with which is secured through requirement 4 in Schedule 2 to the draft DCO [REP4-018]. It will be the responsibility of the contractor to ensure the continued assessment of risks and that these are assessed and addressed in their safe systems of work during construction. Their assessment of the risk will be based on the existing and supplementary ground investigation being undertaken for detailed design. As part of their safe working plan, the contractor will develop a suite of tool box items, with alternatives, to allow further investigation and assessment during construction to identify the need for ground treatment ahead of the tunnel face. Where the need for ground treatment is identified this will be undertaken from inside the tunnel bore where it is safe and practicable to do so in preference to surface intervention. This has been successfully demonstrated on tunnelling projects in complex Chalk geology through drinking water aquifers, both nationally and internationally, including the Lee Tunnel and Crossrail C310 Thames Tunnel which required the construction of cross-passages below the River Thames.

NOISE AND VIBRATION

11.2.57

15.2.27: The British Museum adopted 0.00625 mm/s as the most stringent criterion during the construction of The World Conservation and Exhibition Centre built between 2008 and 2014. A similar criterion (known as VC-D) has been used in assessing the impact of a tunnel boring machine on the National Maritime Museum in London for the construction of the London Power Tunnels.

Professor Konstantinos Vogiatzis of the Department of Civil Engineering at the at the University of Thessaly, has published work on the potential vibration effects of the construction and operation of

Highways England welcome Stonehenge Alliance’s agreement that tunnelling vibration impacts are not a cause for concern at Stonehenge.

As detailed in Comments on Written Representations 15.2.26 [REP3-013], trigger levels adopted by the British Museum when construction activities are being undertaken in the vicinity of the museum are specified in relation to exhibition/storage (Collection areas). The 0.1mm/s PPV first action level is designed to stop objects ‘walking’ on shelving. As detailed in the Applicant’s written summaries of oral submissions at ISH5 on noise and vibration [REP4-033], section 6.iii, Mr Taylor QC commented on the inappropriateness of this trigger level being implemented in the context of this Scheme in respect of the

<p>Athens Metro on archaeological remains. In his paper "Protection of the Cultural Heritage from Under-ground Metro Vibration and Ground-Borne Noise in Athens Centre: The Case of the Kerameikos Archaeological Museum and Gazi Cultural Centre" https://doi.org/10.20855/ijav.2012.17.2301 he states "In the case of the archaeological area and the museum of Kerameikos ... a maximum vibration level of 25 $\mu\text{m/s}$ rms was also applied" The figure of 25 $\mu\text{m/s}$ rms (0.025 mm/s) can be compared with the British Museum's action levels in ppv. The relationship between the two is such that the ppv (peak particle velocity) may be from 1.5 to about 6 times the rms (root-mean-square) value. The figure of 25 $\mu\text{m/s}$ rms is therefore comparable to the British Museum's first action level of 0.1 mm/s, and of the order of 10 to 30 times more stringent than the range of 1 and 3 mm/s.</p> <p>While I have not created a model for the A303 tunnel the indications from my previous work are that, in the local lithology, the museum criterion of VC-D is likely to occur in the soil conditions at Stonehenge up to about 50m from the tunnel centreline. While Stonehenge itself is beyond this range, remains such as the long barrow lie within it.</p> <p>It is therefore to be concluded that a full and correct assessment of the risk of damage to archaeological remains should be, and has not been, carried out.</p>	<p>sensitivity of buried archaeological assets to vibration which are supported in a consolidated soil matrix, so they are not surrounded by voids. As set out in the written summaries of oral submissions [REP4-033] the Bowl Barrow (NHLE 1010832) was excavated in the 1960s and burials removed and back filled. In the 19th century the Long Barrow (NHLE 1008953) was partially excavated, burials removed and then backfilled. It also suffered damage during WWI and subsequent condition surveys have revealed extensive animal burrowing. Therefore vibration of the magnitude predicted from the tunnel boring machine, will minimally impact on this archaeological resource and integrity of the assets.</p> <p>The VC-D criterion, which is an rms level not a PPV level, referenced in relation to the impact of a tunnel boring machine on the National Maritime Museum in London for the construction of the London Power Tunnels, is a criterion which is used to prevent disturbance to the operation of highly vibration-sensitive equipment including electron microscopes and electro-beam systems. This criterion is not applicable to the nature of buried heritage assets along the route of the A303 tunnel.</p> <p>The paper published by Professor Konstantinos Vogiatzis considers criteria to prevent vibration damage to archaeological assets including the museum of Kerameikos which houses collections which are 'extremely sensitivity to vibration'. This criterion is not considered to be applicable to the nature of buried archaeological features along the route of the A303 tunnel. Furthermore the criteria relates to vibration during the operation of the underground metro line, and not during construction.</p> <p>The Outline Environmental Management Plan (OEMP) [REP4-020] makes provision for the protection of heritage from potential vibration impacts, see MW-NOI5 and MW-NOI6. The detail of the proposed vibration monitoring will be contained in the noise and vibration management plan to be prepared under item MW-NOI3 of the OEMP. Paragraph 5 of Schedule 2 to the draft Development Consent order requires the Applicant to comply with the detailed archaeological mitigation strategy ("the DAMS"). Both the DAMS [REP4-024] and OEMP require a heritage management plan to be prepared (item MW-CH11 in the OEMP). These will be developed in consultation with the Heritage Monitoring and Advisory Group (HMAG) and Wiltshire Council.</p>
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		<p>Item MW-CH7 in the OEMP requires monitoring of heritage assets during construction.</p> <p>On the basis of the above discussion, Highways England do not agree that a ‘full and correct assessment of the risk of damage to archaeological remains.....has not been carried out’.</p>
CULTURAL HERITAGE VALUE		
<p>11.2.58</p>	<p>13.1.1 to 13.1.3: Heritage value accounts for 75% of PVB</p> <p>The broad comment is that heritage value should form part of any highways scheme assessment, should be monetised if it can be and, in the context of Stonehenge, it is “not surprising” that 73% of the benefit stems from heritage value. I find it very surprising that an agency set up to deliver strategic road improvements is willing to spend over £1 billion of its limited funds on a scheme that primarily purports to deliver heritage benefits and is hopelessly uneconomic as a road scheme.</p> <p>This is a question of proportion. A highways project that is fundamentally sound as a transport scheme but offers other benefits could justifiably claim the other benefits a bonus; but a project that is fundamentally unsound economically and requires other, highly questionable monetised benefits to get it over the positive BCR line is another matter.</p> <p>HE repeat the earlier mistake of arguing that the scheme removes the A303 from the World Heritage Site (WHS): “The Scheme has been designed to addresses (sic) the transport issues and recognises the cultural and heritage importance of the area by removing the Road from the WHS in an affordable manner” (13.1.3). If the scheme genuinely has the objective of recognising the cultural and heritage importance of the area, and wants to address this by removing the road from the WHS, then it is an outright failure.</p>	<p>This issue was addressed in the response to the Stonehenge Alliance previous submission in Comments to Deadline 3 submissions part 13 [REP4-036].</p> <p>Enhancing the cultural heritage of the Stonehenge World Heritage Site, through the delivery of the A303 Amesbury to Berwick Down Road Scheme, formed an integral part of the Client Scheme Requirements and, therefore, is a core objective for this scheme. It is because of this core objective it is not surprising that cultural heritage is part of the assessment of value for money of the Scheme. It is not the only objective of the Scheme, however, which also seeks to enable economic growth, provide transport benefits and improve biodiversity (as explained in the Case for the Scheme) [APP-294]).</p> <p>Highways England has designed a scheme which meets these client requirements and the Scheme objectives. The CV method of monetising heritage benefits is an accepted standard method of assessing intangible benefits in assessment of value for money in publicly funded projects. The assessment of value for money – and its conclusion - is therefore sound.</p>

11.2.59

13.1.4 to 13.1.8: 94% of the heritage value derives from the general population who are unlikely to experience the site

The broad comment is that non-use values deriving from altruism, future generational values, and existence value, are relevant and should be incorporated into any assessment. Leaving aside misgivings over the methodology of asking people how much they would be willing to pay when they will never have to put their money where their mouth is, this is again a question of proportion. Serious questions over the validity of doing something must be raised if only 6% of the benefit is attributed to people who actually reap the benefit directly.

I would also question existence value in this context. Stonehenge will continue to exist whether or not the tunnel scheme goes ahead, whereas a significant swathe of the assets of the WHS – including many as yet unknown – will cease to exist along much of the new road within the WHS. The Simetrica report concentrates on the visual benefit to Stonehenge visitors, yet attributes a significant proportion of the benefit to existence value where there will be a significant but underplayed negative impact.

One of the methodological advantages of CV over other non-market valuation approaches is that it can measure values and benefits that would not be revealed under market conditions, such as non-use values. In this case direct use values stem from those visiting the site, those travelling on the A303 and viewing the site from the road, and those who experience Stonehenge remotely via other media. Non-use values are made up of: altruistic values – welfare increases from knowing that others living will benefit; bequest values – welfare increases from knowing that future generations will benefit; and existence values – welfare changes from knowing that the road layout within the Stonehenge WHS has been changed (even if an individual does not experience the changed road layout now or in the future). It is entirely appropriate that the views of all tax payers were accommodated in the CVS study and reflected in the valuation, given that all tax payers will to some extent contribute to the costs of the Scheme.

In this context, the term “existence value” does not refer to the existence of Stonehenge, but to the existence of the improvement in the visual amenity, noise and landscape severance.

The CVS questionnaire stated clearly that the tunnel portals and the new dual carriageway leading up to the tunnel would be within the WHS and would affect the archaeological landscape:

“Tunnel entrances would be constructed within the Stonehenge World Heritage site. These would not be visible from the stones but would be new visible features in the archaeological landscape, although the road would be carefully designed to reduce its impact as far as possible.”

This allowed respondents to incorporate the uncertainty and potential negative impacts into their response. Consequently, negative impacts inherent in the design of the scheme have not been under-represented in the CVS results. Negative impacts associated with the specific alignment of the scheme are dealt with separately.

At the time the valuation study was undertaken, it was important to ensure it would remain equally valid for various alternative alignments of the road and tunnel, to ensure results would remain valid as designs changed. The study therefore provided only limited information on the precise alignment and design aspects of the tunnel. In the final assessment of the Value for Money

		<p>of the proposed scheme, however, the valuation of cultural heritage and the other monetised costs and benefits were complemented by a qualitative assessment of the impacts on heritage, as outlined in the Heritage Impact Assessment, and qualitative assessments of all other relevant impacts. All quantitative monetised and qualitative impacts are incorporated into the assessment that the Scheme represents Low VfM, meaning the benefits outweigh the costs. This is consistent with guidance set out in WebTAG unit A1-1.</p>
11.2.60	<p>13.1.12: Areas of bias in the study</p> <p>HE comments largely reiterate the approach, without addressing the specific criticisms in my WR. Simerica accept in their report that the methodology is open to difficulties over bias (see my WR 4.1, 6.1 final bullet, and 8.1), but here the HE comment is that Contingent Valuation (CV) surveys can be administered “in a robust manner” (13.1.13). My argument remains that ‘minimising’ bias effects is not good enough, especially when the outcome is such a frail BCR.</p>	<p>Issue of bias in the CVS questionnaire were comprehensively addressed in previous written responses [REP3-013]. The Simerica report describes the potential sources of bias and how they have been minimised. Highways England considers that the measures taken by Simerica, including those taken in response to the peer reviews, ensure that individual sources of upward and downward bias have been minimised and overall the study is unbiased (as Outlined in [APP-302]).</p> <p>In the final assessment of the Value for Money of the proposed scheme, the valuation of cultural heritage and the other monetised costs and benefits were complemented by a qualitative assessment of the impacts on heritage, as outlined in the Heritage Impact Assessment and qualitative assessments of all other relevant impacts. All quantitative monetised and qualitative impacts were incorporated into the assessment of Value for Money. This is consistent with guidance set out in WebTAG unit A1-1.</p>
11.2.61	<p>13.1.35 to 13.1.42: Representativeness of ‘general population’ sample</p> <p>Simerica transferred road users (within previous year) from the original survey group C (general population >50 miles from Stonehenge) to the ‘road user’ group in the subsequent analysis; and transferred non-users from the original survey group B (population <50 miles from Stonehenge) into the ‘general population’ group in the subsequent analysis. HE’s comments appear to suggest that this transfer process nullifies any effect of possible unrepresentativeness in that it “cleaned the data to remove any such implausibility”</p>	<p>Issue of data cleansing in CVS analysis were comprehensively addressed in previous written responses [REP3-013]. The response explains the methodology and consistency checks that were undertaken to ensure the survey responses were consistent.</p> <p>On the representativeness of online surveys before transferring individuals between groups, these were designed by Simerica and delivered by the online panel provider Toluna. Toluna provided a representative online panel of the UK population, allowing quotas for age, gender, and region to be set at the local and national level. Sample selection is made randomly using the specified profile criteria.</p>

	<p>(13.1.38). I would dispute this, as the fact remains that the original survey C sample does not appear to have been plausibly representative if 24% of the sample had been past Stonehenge in the previous year: and if it was not representative in this respect it may well have been unrepresentative in other respects.</p> <p>However, the transfer process between survey groups B and C had an even more significant effect on the representativeness of the ‘general population’ in the main analysis. The final ‘general population’ group was made up of 458 non-road users living within 50 miles of Stonehenge and 1500 non-road users living elsewhere in the UK (Simetrica 6.1.4 and Figure 2). In other words 23.4% of the sample ‘general population’ study group lived within 50 miles of Stonehenge, which is clearly not representative of the overall UK population. As a null hypothesis, and accepting for the time being the assumptions underlying WTP/ WTA, it is likely that people living close to Stonehenge would have a higher WTP to ‘improve’ Stonehenge than people living several hundred miles away; in which case the mean WTP for the general population is likely to be overstated since 23% of the sample live so close.</p> <p>HE’s paragraph 13.1.39 is a non-sequitur. It states that of the 467 respondents transferred from survey group C to the road user group because they had used the road in the past year, 38% were from SE or SW England, therefore “increasing the likelihood that these individuals would have used the A303 at least once in the past year”. This is rather meaningless given that we know that every individual amongst the 467 had used the A303 in the past year! It says nothing about the propensity of people living in SE or SW England to travel along the A303, and still less about people living elsewhere in the UK.</p>	<p>Section C of the questionnaire contained demographic questions which allowed the drivers of WTP/WTA to be identified and to ensure that the sample was not biased in any way that would affect the CVS results. The factors affecting WTP/WTA were derived from a comprehensive literature review. If there is any unidentified skew in the samples it is highly unlikely to affect the results.</p> <p>To deal with any residual “unrepresentativeness” of the sample once respondents had been assigned to different survey groups, the visitor group was weighted by age, and the general population group weighted by region, gender, age group and income group to ensure broad representativeness of real-world populations. Responses from different groups within the road users survey were not weighted differently because there is no population-level data available on the characteristics of users of the A303.</p> <p>The data cleaning steps, and subsequent weighting exercises, were undertaken to generate a robust and reliable data set and ensure sample representativeness to allow aggregation of WTP/WTA to the relevant national populations. Assigning respondents to the appropriate survey population was not the only technique used to ensure robust sample data was collected. Respondents who provided inconsistent follow-up responses were excluded (following best practice, see Bateman et al. 2002). It is unlikely that the samples were biased in any way.</p> <p>There is no empirical evidence to suggest reassigning survey respondents between groups creates bias as the sample characteristics broadly reflect those of the population.</p>
<p>11.2.62</p>	<p>13.1.43 to 13.1.49: Scenario testing</p> <p>HE’s comments are broadly that scenario testing done as part of the CV is in line with good practice in CV studies; that statistical</p>	<p>Issues of scenario testing in the CVS questionnaire were comprehensively addressed in the Comments from Deadline 3 [REP4-036].</p>

confidence testing gives a high degree of certainty that the aggregate net WTP is fairly close to the mid-estimate; and that my figures on the sensitivity of overall NPV to small changes in WTP are incorrect.

HE state (13.1.47) that some scenario tests commonly done on highways schemes are not considered good practice in CV studies, but it is not stated why. My main contention, however, is that given the high degree of uncertainty in the methodology itself there should be more testing to establish the outcome should the hypothetical WTP prove to be out by a wider margin than Simetrica consider likely. I remain unconvinced that the degree of (literal, as opposed to statistical) confidence in the methodology is justified.

On statistical confidence, the conclusion that “these results show that with 95% confidence the aggregate net WTP is between £1.2 and £1.5 billion” is questionable. Statistical confidence is the level of certainty that another sample using the same parameters as the first sample would give a result within the 95% (or other) confidence limits, and the width of the confidence interval is purely an expression of the degree of variability within the sample data. This is not the same as saying that there is 95% confidence that the sample results are accurate for the population as a whole, especially if (as discussed above) the sample may not be representative of the population as a whole.

There are statistical anomalies in my WR paragraph 6.4, which need more time to review than is available before the deadline for this response. However, my general point remains valid, that with such a large proportion of PVB attributed to the heritage values, and in particular to the WTP of the general population, it only takes relatively small changes in these values to have significant impact of the PVB/ NPV/ BCR.

For the appraisal of Highways schemes it is common to present results for a number of scenarios such as different levels of future traffic growth. For the valuation of cultural heritage benefits from changes in tranquillity, visual amenity and landscape severance associated with removing the road from the WHS such scenarios are not relevant, because the current population of visitors, road users and tax payers are being asked to state their willingness to pay. In line with best-practice, the study avoids the need to project these values into the future by explicitly stating that the payment will be made up-front during the 3 year construction period, and not as an annual payment over the life of the asset. Different scenarios of future population or traffic growth, changes in visitor numbers, or growth in household incomes are therefore not relevant.

On statistical confidence, the critique from Stonehenge Alliance is essentially that the survey is biased or the sample un-representative, so measures of statistical confidence are invalid. These points have been comprehensively addressed in REP3-013. Given Highways England’s view that the survey is unbiased and the sample representative, we believe it remains appropriate to conclude there is 95% confidence that the true Willingness to pay of the population is within the range £1.2 to £1.5 billion.

In relation to sensitivity testing outcomes, there would be no empirical basis for “bounding” a scenario that explored the consequences of hypothetical errors in the survey design so such a scenario would lead to an arbitrary result that reflects the preconceptions of the surveyor more than the views of the sample of respondents. Instead, Highways England calculated “switching values” – the change in the willingness to pay for improvements to the WHS that would lead to a change in the VfM category. These “what if” scenarios allow decision makers to consider whether uncertainty in the CV study could lead to a different conclusion about the VfM of the Scheme, whilst considering all relevant monetised and non-monetised impacts. This work concluded that a £164 million (17%) fall in results of the cultural heritage study would see the BCR drop below 1, but that the balance of non-monetised impacts in the assessment is positive so the scheme’s VfM category would be unchanged. The results therefore show that the category of VfM of the Scheme therefore has a low degree of sensitivity to the values in the CV study.

11.2.63	<p>13.1.50 to 13.1.54: Disparity between 2001 and 2016 CV studies</p> <p>HE continue to make the case that the two studies are comparable and that there is not a fivefold disparity (my WR stated fourfold in paragraph 5.2, comparing the two studies at 2010 prices). It is claimed that a 31% increase in GDP, 30% inflation, and 10% population growth would bring the 2001 study up to £1 billion value (13.1.52), but I make it barely half that figure (£552.79 million), and I would question whether there is a linear relationship between WTP and GDP. There are two claims that changes in cultural values have changed since the 2001 study, but both make the rather bland assumption that values have increased in that time, without any evidence one way or the other.</p>	<p>The purpose of this comparison was to show that the values obtained in the 2016 Simetrica study are in line with those of the 1998 Maddison and Mourato study. This can be done by equivalising aggregate values obtained (as was done in the worked example provided in WR Response) or by comparing the individual-level WTP values obtained by the two studies.</p> <p>Individual-level WTP is found to be higher in the Maddison and Mourato study (£10.87 at 2017 prices based on inflation at 2.7%/ annum from 1998 WTP of £6.50) than the mean individual WTP 2016 study (£6.88). However, the Maddison and Mourato study used a 2-year payment period. When equivalised over a 3-year NPV, the annualised mean WTP in Maddison and Mourato is much closer at £6.43 to the 2016 study (£6.88, once averaged across those who said they were willing to pay something, those who were willing to pay nothing and those who would need to be compensated for the change).</p> <p>The application of GDP deflators have a compound effect over time so a 2.7% annual inflation rate over 15 years leads to an increase in values of 50%.</p> <p>Highways England do not assert that there is a linear relationship between WTP and GDP. Only that to compare figures from different time periods the appropriate guidance from HMT Green Book must be followed. The Green Book explains that the values from different time periods should be equivalized by using GDP deflators.</p> <p>It is not clear that there are any claims that values have increased over time only that to compare values from different time periods the appropriate adjustments (as outlined in HMT Green Book) must be made to ensure that like for like comparisons are been made.</p> <p>In order to meaningfully compare the 2001 and 2016 values it is important to adjust the figures in line with HMT Green Book guidance. When this is done the values from the two studies are roughly equivalent.</p>

11.2.64	<p>13.1.55 to 13.1.57: No consideration of options outside of the WHS HE's comments do not add to the discussion, but they do make an erroneous statement (13.1.57) that the tunnel portals would now lie outside the WHS.</p>	<p>A previous response by Highways England incorrectly stated that the tunnel portals would be outside the WHS. We apologise for any confusion this may have caused.</p> <p>The CVS was clear that although the precise design and layout of the route was not known the tunnel portal would be inside the WHS.</p> <p>Due to the early stage of development of the Scheme, respondents were shown the approximate position of the new tunnel portals and road leading up to the tunnel. The map provided and the description of the tunnel scenario in the questionnaire stated clearly that the tunnel portals and the new dual carriageway leading up to the tunnel would be within the WHS and would affect some elements within the site some of them not known:</p> <p>"Tunnel entrances would be constructed within the Stonehenge World Heritage site. These would not be visible from the stones but would be new visible features in the archaeological landscape, although the road would be carefully designed to reduce its impact as far as possible."</p> <p>The error in Highways England's previous response does not affect the validity of the CVS results.</p>
11.2.65	<p>13.1.58 to 13.1.67: Monetisation of a single aspect of cultural value, when there are other intrinsic values to the cultural heritage</p> <p>HE focus on a narrow interpretation of the 'intrinsic' value of the features that make up the Outstanding Universal Value (OUV) of the WHS, and argue that things do not have an intrinsic value that can be monetised so it is acceptable to monetise the WTP/ WTA element of the scheme but not the other aspects. I disagree fundamentally with HE's characterisation of 'intrinsic' values in this context, as "the value of an asset in and of itself regardless of the implications and benefits it has for human beings, animals and the environment now or in the future". The very definition of OUV in a WHS is that "These sites are deemed worthy of preservation due to their universal value to humanity, both in the present and for future generations" (https://www.nationaltrust.org.uk/features/what-is-a-world-heritage-site). The OUV of the WHS is all about its importance and</p>	<p>It is accepted that the CVS does not capture or seek to capture every aspect of the scheme's impacts on heritage and archaeology. The CVS has captured changes to the landscape severance, noise and tranquillity of the site. Other impacts use the quantitative or qualitative methods described in the DfT's transport appraisal guidance (WebTAG).</p> <p>The appraisal process aims to capture only the change in values as a result of the intervention and not the overall values. In this case the contingent valuation was designed to elicit responses that were focussed on the impact of removing the road from the landscape leading to visual and amenity improvements.</p> <p>In the economics literature intrinsic value has a specific meaning and this is what was referred to in the previous response.</p> <p>Irrespective of what aspects of cultural heritage value have been captured in the CV study, all relevant impacts identified in the heritage impact assessment, whether monetised or not, have been considered in coming to</p>

significance to all, and HE's attempt to create a distinction between this and the 'real' value of Stonehenge to 'real' people is really rather lame.

the conclusion that the scheme is expected to deliver benefits which exceed costs.

12 Mr and Mrs Whiting (REP4-077 and REP4-078)

12.1	Oral Submissions	
	Matter Raised	Highways England's Response
<p>The applicants written oral submissions for ISH5 and ISH6 [REP4-033 and REP4-034] have responded to Mr F and Mrs L Whiting's comments received at Deadline 4. An additional point raised is detailed below.</p>		
12.1.1	<p>DCO as submitted created a Cul du Sac immediately outside Scotland for no apparent reason despite on numerous occasions the stopping point being suggested should be at the junction with the Berwick junction. The cul du sac would create another highway that would lead nowhere and encourage undesirable activities where none currently exist as Highways are and have throughout this process not listened to counter proposals put forward to ensure this area does not become a no go area, as it is highly unlikely Wiltshire Council would put forward the resources required to ensure the activities referred to do not begin following the de trunking of the existing road.</p>	<p>If the existing A303 was to be stopped-up immediately to the west of the B3803 Berwick Road, the junction would need to be converted to a sharp bend in the through road. Providing adequate forward visibility between the existing A303 and the B3083 within the existing highway verge would not be possible due to the sharp bend created – the resulting layout would be unsafe as vehicles travelling on a revised through route towards each other on B3083 Berwick Road and the existing A303 would not have adequate visibility of each other. Wiltshire Council is responsible for controlling parking on the local road and byway network, and Highways England is working with the Council to agree the necessary measures to deal with this issue if the DCO is approved. Wiltshire Council has the powers to control potential problem issues which have been raised, including anti-social behaviour and fly-tipping if the road is turned into a cul-de-sac as proposed in the DCO.</p>

13 West Amesbury Farms (Mrs P M Sandell) (REP4-059 and REP4-060)

13.1	Oral Submissions	
	Matter Raised	Highways England's Response
13.1.1	<p>Fears were expressed if the entrance was blocked by tour operators or mini busses bringing tourists to a point where they could then use other means to gain a free view of the stones. The point was made again that the stopping up point should be at the junction of the Woodford valley road.</p> <p>The argument against this put forward by Wiltshire Council was on the basis that amenity would be lost but this is simply incorrect as the houses on Stonehenge Road which cars could park in front of are already set back from the road and are in elevated positions so there would be no loss of amenity what so ever as the views from those properties would not be lost. The way in which the council and others should be looking at this is to say we can use parking restrictions to ensure visitors to the stones are encouraged to use parking facilities that require a fee to be paid before transporting the visitors to the stones which may encourage more visitors to Amesbury.</p>	<p>Wiltshire Council set out its position in its response to ISH6, para 6.1 and 2 [REP4-034].</p> <p>There are 14 properties immediately south-east of the junction of the Woodford valley road which are not elevated.</p> <p>Highways England does not intend to amend the stopping up point currently proposed in the draft DCO. Wiltshire Council is responsible for controlling parking on the local road and byway network, and Highways England is working with the Council to agree the necessary measures to deal with this issue if the DCO is approved. Wiltshire Council has the powers to control potential problem issues which have been raised, including anti-social behaviour and fly-tipping if the road is turned into a cul-de-sac as proposed in the DCO.</p>
13.1.2	<p>We will also be providing evidence to both yourselves and Highways England that the owner of 7 properties in West Amesbury which are let that could be potentially affected by moving the stopping point has no objection to the moving of the stopping up point negating Highways England supposition that they had had insufficient time to discover the rights of access that would or could be affected if the stopping point was moved.</p>	<p>See the response to item 39.1.12 – 39.1.15 in the Comments on Written Representations [REP3-013] and paragraph 13.1.1 above. Highways England awaits the evidence which is to be provided.</p>

13.1.3	Highways were asked to provide evidence by way of analysis about the increase of undesirable activities that arise from a road that becomes a cul de sac as a result of creating a road that goes nowhere.	There are many instances across the highway network where cul de sacs are created without causing the undesirable activity, particularly where there is other activity on the cul de sac road. Stonehenge Road will only become a cul de sac for the public in mechanically propelled vehicles. Vehicle access will continue to Stonehenge Cottages and to adjacent land holdings and public access will remain available to all other classes of user. Given the proximity of Stonehenge Road to Stonehenge and Amesbury, it is likely to experience increased levels of non-motorised use when the A303 becomes a restricted byway. Wiltshire Council is responsible for controlling parking on the local road and byway network, and Highways England is working with the Council to agree the necessary measures to deal with this issue if the DCO is approved. Wiltshire Council has the powers to control potential problem issues which have been raised, including anti-social behaviour and fly-tipping if the road is turned into a cul-de-sac as proposed in the DCO.
13.1.4	The point was also raised again about the lack of access to the Countess road in the application to enable Park Farm West Amesbury to be put in a similar position in terms of access as exists now and the same point was mentioned on behalf of West Amesbury Farm who will not be able to move their combine and other agricultural equipment to continue to farm Stockport Farm Amesbury or continue with their contracting or share farming arrangements as highlighted in the Consultation responses submitted.	See response to items 39.1.1 – 39.1.3 in the Comments on Written Representations [REP3-013] which explains the proposed access arrangements for Park Farm and West Amesbury Farm and records that these arrangements will continue to be discussed with affected landowners.
13.1.5	There appears to be a complete difference in interpretation as to the number of pumping tests carried out at West Amesbury Farm in 2018. At all times whilst in discussions with Highways England and their contractors were told that tests needed to be carried out both hopefully at peak and low flow times of year so updated data is available to influence how the tunnel is constructed. The previous data from Stonehenge Bottom was taken in 2003/ 2004 and we were told if additional tests could not be undertaken there was sufficient data taken then to use in the construction.	AS-016 describes the pumping tests undertaken in 2018, which supplement those done in November 2002 and September 2004. They are not described as being on a particular farm. In 2018, a pumping test comprising step test, constant rate test, and recovery was conducted in borehole W623 from 7/6 to 22/6, in borehole W601 between 3/7 and 23/7, in borehole W617 between 26/7 and 6/8. Each test measured groundwater level responses at five to seven additional observation wells in an area 100s of metres around the pumped well (for

	<p>Highways England were only able to complete one test covering three boreholes in 2018. Two boreholes being located in Stonehenge Bottom and one in King Barrow field, to blatantly state that 3 tests have been carried out is incorrect as the pumping from each of the boreholes continued when the operation was completed at the first borehole.</p>	<p>locations see Drawing 2 in Deadline 3 Submission - 8.22 – Stonehenge Area Pumping Test 2018 Interpretative Report [REP3-017]).</p> <p>The locations were on Coneybury Hill, Stonehenge Down, and Stonehenge Bottom respectively representing the hydrogeological domains across the chalk block where the tunnel would pass.</p> <p>During the ongoing ground investigations to be undertaken by Highways England and the Main Contractor, additional testing at different times of the year will take place at different locations to provide supporting data for the final design. There is sufficient pumping test data for the purposes of the environmental statement and consideration and determination of the application.</p>
<p>13.1.6</p>	<p>There would therefore appear to be insufficient data to proceed with the construction and if Highways need to undertake more pumping tests they need to advise when this is programmed for so negotiations can start about the entrance requirements.</p>	<p>See above response. We consider that APP-282, REP3-017, REP3-018, REP3-020 and REP3-021 demonstrate that a considerable amount of data and interpretation has been undertaken. There is sufficient pumping test data for the purposes of the environmental statement and consideration and determination of the application. Land access arrangements will be made for future ground investigations and pumping tests which would be carried out for detailed design purposes by agreement or through the powers proposed within the dDCO.</p>

14 Rollo Maughling (REP4-068)

14.1	Oral Submissions	
	Matter Raised	Highways England's Response
14.1.1	<p>In the face of such difficulties, it would not be surprising, given the strength of feeling involved, and the genuine love for Stonehenge that the monument/temple inspires, for the religious minded general public to decide to take matters into their own hands, and seek to park wherever they can.</p> <p>Once the E.H. Visitors` Centre is full up, traffic will begin to pile up on the approach road to the Visitors` Centre from Longbarrow crossroads (A360), the A344 from Shrewton, and the road up to Rollestone. And that`s just to the West.</p> <p>To the North, Larkhill and its surrounds and by-roads will also start to fill up with cars, vans, mobile homes and other means of transport, when Wiltshire sought to try a temporary traffic restriction order twice previously.</p> <p>To the East, the road from Countess roundabout to Durrington (A345), will start to fill up with parked vehicles, all the way from Countess farm to Woodhenge.</p> <p>And I have even heard it said, that were restrictions to become that onerous, to the South, the tunnel itself might very well become a car park, were it seen to be both a blight on the landscape and an excuse for draconian legislation and unjustified prohibitive traffic regulation orders, out of all proportion to the context of the but four days a year when public druidic religious festivities actually take place.</p>	<p>Parking is not currently permitted on the A303 through the WHS except in designated laybys, so there will be no change to this position if the road is put in a tunnel. Wiltshire Council is responsible for controlling parking on the local road and byway network, and Highways England is working with the Council to agree the necessary measures to deal with this issue if the DCO is approved.</p>

15 Devon County Council (REP4-061)

15.1	Oral Submissions	
	Matter Raised	Highways England's Response
15.1.1	<p>Benefit to cost calculations are important but they are only one of a series of criteria that enable decisions to be made. The population of the South West Peninsula see an obvious need to improve the A303. The Stonehenge section has been the main stumbling block and there is a recognition that the solution needs to be sympathetic to the World Heritage Site.</p> <p>Big decisions need a vision and leadership. I represent many constituents and businesses in the South West Peninsula who wish to see this scheme completed and reap the benefits of all the work that has been undertaken so far.</p>	<p>We would like to thank Cllr Andrea Davis for outlining the case for the Scheme from the perspective of the South West Peninsula, highlighting the wider regional benefits of the Scheme, in particular in relation to the benefits for the economy and tourism.</p> <p>Further information has been provided in Responses to Local Impact Report – Devon County Council [REP3-015] and The Case for the Scheme [APP-294] which acknowledges the wider benefits for the South West Region.</p>

16 David Field (REP4-063)

16.1 Oral Submissions		
	Matter Raised	Highways England's Response
16.1.1	In addition, the area [Parsonage Down] is adjacent to the earthworks of a Roman village and its paddocks and fields will almost certainly extend into the area. Once spoil is placed on the land surface it will be impossible to use these methods. Instead, the huge chalk quarry at Westbury could take all the spoil without having any effect of the landscape.	<p>Section MW-CH5 of the Outline Environmental Management Plan [APP: REP4-020] sets out that, where potentially sensitive archaeological remains are required to be buried or sealed beneath fill material, to ensure they are not disturbed during construction the main works contractor shall prepare a Method Statement after consultation with the members of HMAG (for sites within the WHS) or WCAS (for sites outside the WHS) and Historic England (for works outside of the WHS which would otherwise require scheduled monument consent) prior to the start of the work. The Method Statement will address the land east of Parsonage Down (item D).</p> <p>The approach to managing tunnel arisings is set out in Appendix 12.1 of the ES [APP-285]. See response to agenda item 8.1 in the oral submission report from ISH4 Flood Risk regarding Waste and Materials Management [REP4-032].</p>
16.1.2	It would greatly benefit the WHS if visitors could walk between the Lake Down and Winterbourne Stoke barrow groups and experience the prehistoric fields between them, circumnavigate the cemeteries and return. In order to do this a much longer green bridge or extended roof covering is required, one the length of the barrow cemetery. Unfortunately, as proposed, the Winterbourne Stoke cemetery remains all but isolated from the important components of the archaeological landscape.	See response to agenda item 5.i in the oral submission report from ISH3 regarding Landscape and Visual [REP4-031]. This response notes that the issue of reconnection to the landscape, and the implications of the Scheme in both reconnecting the relevant heritage assets generally with one another and the potential disbenefits of doing so are carefully evaluated in detail in the Heritage Impact Assessment [APP-195]. The specific sections dealing with Green Bridge no. 4 in relation to reconnecting the landscape between the Winterbourne Stoke barrow group and the Diamond Group can be found at pages 204 – 206, 215 – 216, 266 – 268, and in relation to other monuments at pages 453, 457 – 458, 459, 466, 482. The effects on the Wilsford long barrow grouping are considered on page 570.

		<p>In determining the width and location of Green Bridge No. 4, Highways England has carefully assessed the benefits of reconnecting heritage assets against the disbenefits of doing so, including the fact that a bridge of more than 150m would be classified as a tunnel under Highways England's Design Manual for Roads and Bridges (DMRB), Volume 2, Section 2, Part 9 (Design of Road Tunnels – BD78/99), resulting in significant and disproportionate implications for the scheme in terms of design standards and costs. Highways England believes the proposed solution achieves the appropriate balance of these matters.</p>
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17 Paul Gossage (REP4-065)

17.1	Oral Submissions	
	Matter Raised	Highways England's Response
17.1.1	<p>In summary, this survey is based on an entirely one-sided question...so the survey's a fraud.....it's absolutely and completely invalid. And the results of this discredited survey are now being used to manipulate things in the following way. According to the Government's National Audit Office, using the method they normally use to calculate value for money on road projects, the tunnel project only delivers 31p for every £1 spent. However, some people have chosen to factor into the calculations the results of the survey (which I hope you agree is invalid) and then they claim the tunnel project delivers £1.15p for every £1 spent. In other words, these people are trying to say that the survey has turned the 69% loss into a 15% gain! In reality, I think this survey is very, very 'fishy'. So I ask the panel to please question the honesty of it, and whether or not it has been corruptly contrived to fabricate a financial justification for this massively expensive tunnel project.</p>	<p>Appendix D of the CoMMA (APP-302] explains that the process of adjusting an initial BCR to take account of wider impacts is a widely used approach which takes account of DfT and WebTag requirements.</p> <p>As set out in the response to agenda item 8 in the Oral Submission Report from ISH6 regarding Traffic and Transport [REP4-034] and Annex H to the aforementioned Appendix D, the survey has been developed using robust methodology.</p>

18 M&R Hosier (REP4-090 to REP4-092)

18.1	Oral Submissions	
	Matter Raised	Highways England's Response
18.1.1	<p>The storing of topsoil and planting wild flowers or quick growing crops on top does not necessarily provide any screening for birds that will be coming into the area. Removing the top soil is creating nesting habitat. How in advance of construction, will the topsoil be removed, as timing is critical? Clearing as the stone-curlews are coming back is providing habitat. But the planted topsoil screening is somewhere else on the landscape.</p>	<p>See response to item 40.3.47 in the Comments on Written Representations [REP3-013]. Furthermore, as detailed within MW-BIO8 of the OEMP [REP4-020], it may be useful to maintain a crop in certain locations or install bird deterrents to deter stone curlew from nesting; this will be site specific.</p>
18.1.2	<p>Having worked for the RSPB for 14 years and having direct experience of nesting stone-curlew, monitoring and management and provision of habitat. Removing the topsoil and creating bare ground, is what's proposed for Parsonage Down curlew plot mitigation. Bare ground will have a high level of attraction for stone-curlews coming into the area. Also, it seems quite unworkable that it can be a 10-week period from nest creation to birds fledging; chicks fledging and leaving. I would suggest the whole process is quite unworkable depending on which time of year the construction is planned. The autumn roosts which are integral to their full entire breeding cycle have been overlooked; with young and adults gathering. The bare areas would likely attract them. Is the applicant aware of a potential 10-week period that they would have to exclude themselves from any breeding nests?"</p>	<p>Items PW-BIO5 and MW-BIO8 of the OEMP summarise deterrent measures that may be used within the Scheme boundaries [REP4-020]. The type of deterrent measure to be employed will be dependent on the working locations/areas. As stated in the OEMP, deterrent measures that could be employed include planting bare ground with quick crop or wildflower/game cover seed. It is correct that the replacement stone curlew plot at Parsonage Down is proposed to be created as bare ground.</p> <p>As stated within 9.7.17 of the Comments received to Deadline 3 [REP4-036], a nest is considered active (and thus protected) until the chicks are no longer dependent on the nest (please refer to PW-BIO4 of the OEMP [REP4-020]). The Applicant is fully aware of the time constraints associated with nesting stone curlew, these have been considered during the production of the OEMP [REP4-020].</p> <p>With regards to stone curlew autumn roosts please refer to item 9.5.1 of the Comments received to Deadline 3 [REP4-036], which summarises the measures to avoid sensitive ecological receptors. These measures are</p>

		considered suitable and proportionate to avoid disturbing the autumn roost of stone curlews.
18.1.3	Not everybody has experience with stone-curlew as was demonstrated at the archaeological surveys that took place near the Western portal last summer, when a number of times RSPB were called in to help locate the birds. I think this underlines the importance that the contractors chosen have the necessary experience, because this breeding species is not easy even for the experienced people to detect. It is imperative that there is this level of experience within the ecology of works department.	See response to items 9.7.17-18 in the Comments received to Deadline 3 [REP4-036]. Appropriate specialists with experience of stone curlew have been used where necessary during the archaeological and ground investigation works in 2018. As stated in PW-BIO5 and MW-BIO8 of the OEMP [REP4-020], compliance with which is secured by the dDCO, an appropriate specialist will undertake the stone curlew monitoring.
18.1.4	I would suggest that the still highly unknown impact of the increase in recreational pressure around Normanton Down reserve and the south area of the World heritage Site will have unknown impacts upon both stone-curlew and great bustard, and there are quite a lot of I would suggest 'unqualified' statements in the applicants documents suggesting that there will be no effect to great bustard".	<p>As summarised within the oral submission for ISH7 regarding biodiversity and ecology [REP4-035] and in item 30.1.9 of Comments received to Deadline 3 [REP4-036], the Applicant stands behind the contents of the SIAA with regards to stone curlew. However, the Applicant has reviewed the contents of RSPB's and Natural England's submissions into the examination in respect of stone curlew and has welcomed the on-going discussions with both parties.</p> <p>As a result of these discussions, the Applicant is willing to commit to procure and provide two additional new stone curlew breeding plots. These would be in addition to the previously proposed new stone curlew breeding plots at Parsonage Down and Winterbourne Down (as reported in the Statement to Inform Appropriate Assessment [APP-267]). This means the Applicant will be providing a total of four new stone curlew breeding plots, forming an overall package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed scheme.</p> <p>More details on the two additional new stone curlew breeding plots will be provided in submissions at Deadline 6.</p> <p>As stated within 9.7.21 of Comments received to Deadline 3 [REP4-036], further engagement with the Great Bustard Group will be undertaken during the construction period.</p> <p>Also as stated within 9.7.21 of Comments received to Deadline 3 [REP4-036], it is unlikely that great bustards would start to nest close to the PRoWs at</p>

		<p>Normanton Down. As the local population has only started to colonise beyond Salisbury Plain in recent years, there are extensive areas of farmland into which the population could expand, within a few kilometres of the Scheme and in the wider Wessex area. The potential increase in recreational disturbance on the PRowS at Normanton Down is therefore unlikely to have a detrimental impact on the population of great bustards.</p>
<p>18.1.5</p>	<p>Mowing was mentioned as the most destructive mechanism for managing grassland. Adding to this, Salisbury Plain with its high diversity of rare invertebrate species, it's highly likely that the habitat created could attract in a lot of those rare species. There is the risk for the new grassland to act as a sink for those species that are being attracted in if mowing is going to be taken as a serious management tool. Grazing is the obvious establishment management tool to be utilised within certain areas of the new habitat.</p>	<p>See response to items 9.5.6 and 9.7.14 in the Comments received to Deadline 3 [REP4-036]. The cutting and grazing management measures that will be considered for incorporation into the Scheme will be confirmed through a combination of the detailed landscaping scheme to be submitted under Requirement 8 and the LEMP, prepared under the framework contained in the OEMP (MW-LAN1) [REP4-020]. It should be noted that the incorporation of a mixture of cutting and grazing management strategies is supported by Butterfly Conservation [REP2-193].</p> <p>As detailed within agenda item 6 in the oral submission report from ISH6 regarding Biodiversity and Ecology [REP4-035], the Applicant summarised that any grazing locations will be confirmed during the detailed design phase of the Scheme.</p>
<p>18.1.6</p>	<p>Pointed out that the area between the A303 and the deep cutting that is currently under our ownership I don't see why that has to be taken out of our ownership, I don't see why it can't be managed under agreement in our current ecology management scheme.</p> <p>I struggle with the target purpose. We hear about the management and the monitoring and I have asked repeatedly if we can be told what target species are being put forward for the different areas.</p> <p>What are the target species with the area between the A303 and the deep cutting and green bridge 4? I fail to see how you can put together a management plan when you don't know what you are targeting.</p>	<p>See response to item 9.7.12 in the Comments received to Deadline 3 [REP4-036]. The area is to be managed to facilitate the movement of calcareous grassland invertebrates and floral species. As stated in the OLEMP (paragraph 5.1.1) [APP-267], for the Scheme as a whole, the objective for the proposed areas of calcareous grassland is to provide diverse mosaics of the early stages of successional calcareous grassland communities, ranging from sparsely vegetated bare ground and rock through to closed, species-rich swards, such as the more open calcareous grasslands traditionally present in areas of Salisbury Plain and Parsonage Down. Over time it is expected that chalk grassland will develop which has affinity to CG2 sheep's fescue (<i>Festuca ovina</i>) – meadow oat grass (<i>Avenula pratensis</i>) (CG2) community identified in the National Vegetation Classification, although this need not be the only target community.</p>

		<p>The Scheme will contribute to the improved habitat connectivity identified as a priority in Natural England's Porton to the Plains project.</p> <p>In accordance with the objectives of Natural England's Porton to the Plains project, habitat creation of chalk grassland within the Scheme is expected to be of benefit for butterflies of chalk grassland, such as Adonis Blue, Chalkhill Blue, Small Blue and Marsh Fritillary butterflies. Food plants for the larvae of these species would be included in seed mixes. The Blue butterflies have become abundant at the Weymouth relief road due to this approach.</p>
18.1.7	<p>Concerned over comments in the OLEMP about dumping grass mowings. Where will these be dumped, or could the scheme be designed to remove the areas of mowing and instead graze the areas. This is quite important now, because we had an Accommodation Works meeting but we were unable to progress matters because land management has not been decided.</p> <p>Grazing requires provision for adequate fencing, gates and water.</p>	<p>The placement or removal of arisings will be determined through a combination of the detailed landscaping scheme to be submitted under Requirement 8 and the Landscape and Ecology Management Plan (LEMP), prepared under the framework contained in the OEMP (MW-LAN1), this would avoid areas that are to be maintained as nutrient poor chalk grassland. See response to agenda item 6 in the oral submission report from ISH7 regarding Biodiversity and Ecology [REP4-035], the Applicant summarised that any grazing locations will be confirmed within the detailed design phase of the Scheme through the detailed landscaping scheme and LEMP. Where suitable to do so infrastructure such as watering location and stock fencing will be included to facilitate any grazing regime settled upon during detailed design.</p>
18.1.8	<p>I would just like to highlight the omission, I believe the importance of the unknown increased recreational activity that will be incumbent upon the south of the World Heritage Site and indeed where the Normanton Down nature reserve lies. We are not convinced at the moment, we are not aware of any baseline data having been collected on the current recreational pressure to compare with what might increase, currently discussions between, any discussions regarding any mitigation for potential disturbance to stone-curlew which has been discussed or raised by various people around this table today, those discussions have only been between the RSPB and Highways England at the moment and as far as we are aware the only mitigation suggested being new fencing for Normanton Down reserve. We would like to ask that the fencing is considered completely irrelevant, we have already made statement in our</p>	<p>Please refer to 9.5.2 in the Comments received to Deadline 3 [REP4-036], which details that visitor monitoring surveys have been undertaken, and are ongoing.</p> <p>See also response to item 9.7.1 in the Comments received to Deadline 3 [REP4-036]. Further consultation will be undertaken with Natural England and the RSPB.</p>

	written representation to that effect so I wont go over the same thing now, however my client has not yet been involved in any discussion regarding mitigation for Schedule 1 breeding birds being disturbed at the reserve on her land and I request that it be noted as a request that she is involved in any further discussions and her views taken into account as the landowner.	
18.1.9	I asked for a meeting with the Ecology Team but I had not been given one. I had a last minute on the agenda of the Accommodation Works meeting which was my first meeting to discuss the ecology and the chalk grassland but apart from that I have had nothing.	The Applicant is continuing to discuss a range of issues with relevant landowners. The Applicant intends to have further discussions with M&R Hosier during the examination period as part of these discussions.
18.2	Comments on Written Representations	
	Matter Raised	Highways England's Response
18.2.1	40.1.1 No information has been provided on the limits of deviation and whether that includes deviation of the length of the tunnel and the width of the carriageway. What is the width of area of the chalk grassland creation to the south of the tunnel? It appears that it will be another awkward are of land to manage that will be an added cost to the ongoing maintenance of the scheme, for questionable benefits.	<p>The Limits of Deviation are included in Article 7 of the draft DCO [REP4-018] which includes the Tunnel (Work Nos 1E, 1F,1G). The Applicant has produced a signposting document [AS-009] to explain how the plans and DCO articles establish the parameters of the works for which the Applicant seeks development consent.</p> <p>The distance between the top of the southern retained cut, to the east of the western portal, and the Order limits to the south is approximately 50 metres and is located within plot numbers 06-02 and 05-35, shown on the Land Plans [APP-005].</p> <p>In addition to the cutting carrying the new A303, the Scheme in this area requires land for use as calcareous chalk grassland to the north and south of the cutting and over the top of Green Bridge No. 4. This would allow the maintenance of a consistent land use in line with that used at the top of the cutting. This forms essential mitigation in order to mitigate the impact of the cutting on the OUV of the WHS. The precise arrangement of the landscaping will be settled as part of the Scheme's detailed design, through a combination of the detailed landscaping scheme to be submitted under Requirement 8 of</p>

		<p>the DCO and the Landscape and Ecology Management Plan (LEMP), prepared under the framework contained in the OEMP (MW-LAN1).</p> <p>The Applicant does not consider that future management of this area will be 'awkward'. The area forms part of wider connected chalk grassland areas located to the west and east. Management of road side verges and land adjacent to the road and areas of cut is common practice across the national road network.</p>
18.2.2	<p>40.1.8 We disagree that The Applicant needs to purchase the area of land for chalk grassland creation around the tunnel. The area can remain within our ownership and be managed according to HE prescription under our environmental stewardship scheme. This, in our opinion, is a more cost effective approach. To date the Applicant has not engaged at all in terms of land acquisition required for the Scheme. It is untrue for the Applicant to refer to "agreements" as they have not produced any such agreement. Therefore, the use of CPO is both disproportionate and premature.</p>	<p>The Applicant has engaged, and sought to negotiate with, all persons affected by its proposed compulsory acquisition. The status of negotiations is set out in the Land Acquisition and Temporary Possession Negotiations Schedule [REP4-027]. The Applicant will continue to engage with all affected landowners on land acquisition. Negotiations led by the Valuation Office Agency have been initiated and will continue through the examination process, and progress will be recorded in future updates to the Land Acquisition and Temporary Possession Negotiations Schedule.</p> <p>The provision of a suitable land use to the north and south of the cutting and over the top of Green Bridge No. 4, allows the maintenance of a consistent land use in line with that used at the top of the cutting. This forms essential mitigation in order to mitigate the impact of the cutting on the OUV of the WHS. The Applicant will explore with M & R Hosier an alternative to outright acquisition if that would prove sufficient to achieve the Scheme's aims, but until such time as an agreement is concluded the Applicant must maintain its position that full acquisition of the land is required to ensure that it can deliver and maintain essential mitigation for the Scheme.</p>
18.2.3	<p>40.1.15 We have not noted any points within the Outline Environmental Management Plan (OEMP) [APP- 187] that refer to minimising the construction impact on the pig enterprise. Please can you direct us to these references.</p> <p>HE has not shared with us a feasibility study of providing either temporary or permanent water to our farm should it be required. As such, we believe they are not taking seriously the potential impact that this would have to our business.</p>	<p>See response to items 9.3.3 and 9.4.7 in the Comments received to Deadline 3 [REP4-036]. Any potential construction impact on the pig enterprise will be managed through the measures outlined within the OEMP [REP-020]. The OEMP is not intended to define all measures across the Scheme which are required to reduce construction impacts, but to create the framework. The contractor will develop measures specific to locations during the production of the CEMP. Examples of items within the OEMP which will be developed by the contractor to minimise impact on the pig enterprise include (but are not limited to):</p>

		<p>Table 2.1 – provision of an agricultural liaison officer.</p> <p>MW-G7 – Management Plans</p> <p>MW-G12 – MW-G14 – Working hours</p> <p>MW-G29 – Site lighting</p> <p>MW-AIR1 – Best Practicable Means (BPM) for air quality</p> <p>MW-NOI1 – BPM for noise</p> <p>MW-COM1 – notification of works</p> <p>MW-COM2 – biosecurity (agriculture)</p> <p>MW-COM7 – private water supplies (also detailed below)</p> <p>MW-WAT11 – management of impact on abstraction boreholes (also detailed below)</p> <p>The Applicant recognises the importance of maintaining water supplies to those landowners which rely on sources which could potentially be affected by the Scheme. The OEMP [REP4-020] contains specific items (MW-WAT11 and MW-COM7) which contain measures to minimise and reduce potential adverse impacts on abstraction boreholes and to ensure temporary or permanent water supply is maintained. These measures are considered standard practice for schemes of this nature and are typical of requirements placed on contractors constructing such schemes. It is therefore not considered necessary to undertake a feasibility study of providing water (should this be required).</p> <p>Extracts from items of the OEMP which directly address the maintenance / continuation of water supplies are as follows:</p> <p>Item MW-WAT11 (management of impact on abstraction boreholes): <i>‘The main works contractor shall, to limit and manage residual risk from groundwater pollution at abstraction points... put in place appropriate emergency measures to overcome the adverse impact where this has resulted from the construction works. These emergency measures may include the transfer of a potable water supply to another water source and informing the water users.’</i></p>
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		<p>Item MW-COM7 (private water supplies):</p> <p><i>‘Where an existing private water supply to a farm is adversely and directly affected by the construction of the Scheme, the main works contractor shall, if requested by the farmer or landowner to do so, provide or procure or meet the reasonable cost of the provision of an alternative supply of water (at the contractor’s option).’</i></p> <p>Further to these items, the Applicant can confirm that an amendment will be made to the Agricultural Liaison Officer (ALO) role within Table 2.1 of the OEMP to be submitted at Deadline 6. This includes an additional responsibility for the ALO to ‘liaise with owner/occupiers to establish measures to be implemented to maintain livestock water supplies which may be affected due to construction works;’.</p> <p>These measures are in addition to the general measures for the protection of people and communities set out in measures MW-COM1 to MW-COM8 of OEMP [REP4-020].</p>
18.2.4	<p>40.1.16 We remain unconvinced that the implications of flooding of the River Till have been fully assessed in respect to the potential contamination of water quality within the aquifer in this area. The Applicant admit they have no flow data for the River Till.</p>	<p>See response to agenda item 6.1 in the oral submission report from ISH4 [REP4-032]. The potential impacts to water quality have been fully assessed in the Water Framework Directive (WFD) Compliance Assessment [APP-280]. Spot flow monitoring data for the River Till and River Avon from the Environment Agency was used to inform the development of the groundwater model which was subsequently used to inform the WFD Compliance Assessment.</p> <p>The question does not make clear what mechanisms for contamination are of concern if the River Till floods. The Scheme is not changing the existing interaction of the River with groundwater.</p>
18.2.5	<p>40.1.16 TR010025 Environmental Statement Appendices Appendix 11.5 Leve 3 Flood Risk Assessment</p> <p>5.3.5 There’s a significant gap in quantitative calibration and verification data within the River Till catchment, as the watercourses entirely un-gauged within the study area. As such, a quantitative assessment of the accuracy of the model outputs for this water course has not been possible, and liaison with stakeholders has</p>	<p>The lack of available information could not support a substantive validation on the River Till. However, the model has been peer reviewed by Wiltshire Council and its consultants and has been found to be robust.</p> <p>There is also insufficient data available from the 1841 and 2000 floods to quantify their specific impacts against model outputs however the approach has been considered as robust by Wiltshire and their third party reviewers.</p>

	<p>been used to confirm that modelled outputs replicate as closely as possible to flood events experienced.</p> <p>On the 11th June 2019 hearing the Applicant, ruled out the 1841 flood and ignored that of autumn 2000.</p> <p>The flood in 1841 was due to the melting snow which resulted in waters 7-8 feet deep in the valley of the River Till. The Applicant have not used this data in their model dismissing the 1841 flooding as being irrelevant.</p>	<p>With respect to the questions around snowmelt and snow drift generally, this has been assessed where required within the FRA (see e.g. section 6.7) [APP-283]. No further work or study is required.</p> <p>See also the Applicant's response to item 9.4.6 in the Comments received to Deadline 3 [REP4-036] and the response to agenda item 5.1 in the oral submission report from ISH4 regarding flooding [REP4-032].</p>
18.2.6	<p>40.1.16 Annex 2 Part A – River Till Hydrological Analysis</p> <p>2.7.6 “The historic flood of 1841 was attributed to a combination of cold weather, snowmelt and heavy rainfall. Whilst flooding of this type is noted, this historic event was within the ‘Little Ice Age’ period circa 1300 – 1850 AD where climatic conditions do not reflect the current conditions of milder, wetter winters. The flood record is not considered to be stationary and the use of earlier records should not be used to assess present day flooding. Furthermore, a review of the Met Office ‘Days of Snow Lying’ annual average for the period 1961 to 1990 against the period 1981 to 2010 indicates that there is a decrease in snow lying days. The River Till catchment receives 5 to 10 days of snow lying on average and this is likely to decrease with climate change based on Kay (2016) (Ref 6).</p> <p>The likelihood of the coincidence of significant snow depths combined with heavy rainfall and frozen ground is considered to be very low and not considered further within this analysis.</p> <p>1841 flood appears to have been due presence of snow and it’s very rapid melting. The aspect which the Applicant ignores is the rapid melting of the snow produced rapid flow of water into the River Till.</p> <p>What the Applicant has ignored is snow drift. The valley of the River Till comprises a large number of long valleys running east west with steep sides dissecting the southern end of Salisbury Plain. The River Till has a high stream density per unit area and therefore can trap large amounts of snow in drifts which had been blown southwards</p>	<p>With respect to the questions around snowmelt and snow drift, this has been assessed where required within the FRA (see e.g. section 6.7) [APP-283]. No further work or study is required.</p> <p>With respect to the Willow Tree and wrack marks, if this information could be provided to HE we would be very grateful to take a view of this.</p> <p>The impacts of encroachment of the floodplain by piers and embankments has been assessed within the FRA [APP-282].</p> <p>The flood model accounts for displacement of flood water by piers and embankments associated with the scheme. Model results are presented within Section 8 of the FRA [APP-283], and Section 5.2 of Annex 1 Part A of the FRA Results demonstrate that the impact is localised around the scheme only. The volumes of water displaced are very small when considered in the context of the total volume of water flowing through the River Till within an extreme flood event. As a result the model shows there is no increase in flood risk in the location of receptors such as properties and infrastructure. Therefore modelling presents no evidence to suggest that the engineering works would have an impact upon filling of property drains and subsequent pollution.</p> <p>The hydrological characteristics and geological characteristics of the River Till catchment, including the presence of dry valleys, have been captured within the hydrological analysis undertaken for the River Till (Annex 2 Part A). Therefore the assessment undertaken takes into account topography of the Till catchment and valley, along with the underlying chalk geology to estimate flood flows in extreme events.</p>

<p>over the Salisbury Plain. Consequently, it is not the depth of snow which has fallen across the valley of the River Till but that which had been blown across Salisbury Plain and accumulated as drifts.</p> <p>Warm weather would have come from the south west. Rapid melting of the snow would have produced water at the base of the snow drifts. The combination of steep sides of river valleys and water at the base of the base lubricating grass would have resulted in very low coefficients of friction would have meant the snow could have slipped down slope. If takes one valley at NGR (SU) 508100 14260 the slope is 20m in 100m which is 1 in 5 or 11.3 degrees which is sufficiently steep to cause snow to slip down over wet grass. Also there needs to be an assessment of the percentage of the River Till where valley sides exceed slopes of 8 degrees and where the grass is sufficiently long so it lies flat on the ground surface which increase run off.</p> <p>The Applicant admits they have no flow data for the River Till as per paragraph 5.3.5, but:</p> <p>The flash flood occurred at about 5pm on Saturday in January when the farm workers would have been at home, not in the fields and therefore being able to observe the rapidly melting snow and possible slumps. The dry valleys with their sufficiently steep slopes feed into the Till Valley above Winterbourne Stoke cover a wide area.</p> <p>Another aspect which has been ignored is that the steepness of the valley sides could have caused cambering of the strata within the Chalk. Consequently rain and snow water would have flowed along the top surfaces of marl layers into the valleys. Cambering of geological strata is common where stronger more brittle layers overlay softer cohesive layers which deform creating dips into the valley. Also the formation of putty Chalk or called Dm Grade would have reduced infiltration of water and increased run off.</p> <p>Consequently snow drifts rapidly melting to form which water which ran off the steep valley sides and then slumping into the valley bottoms, would have caused the flash flood.</p>	<p>The embankment displacement is clearly documented within the FRA. With respect to displacement caused by piers during a design event, the volume displaced proved to be comparatively negligible when compared to the wider flow volume and rate experienced within the Till Valley. Any effects which occur are therefore expected to be locally experienced in and around the base of the piers only. As a result, this does not increase the flood risk to vulnerable receptors due to the location of the piers being situated sufficiently far away from populated regions and associated infrastructure.</p>
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	<p>The Applicant have also ignored the autumn 2000 Flooding. Quote from ANNEX B – Historical Flood Record “2000 Flooding within the wider River Till catchment – no further information available on extent, properties affected or source of flooding although likely to be a combination of high groundwater levels coupled with rainfall causing out of bank flows on River Till.”</p> <p>The Applicant has not spoken to people living in Winterbourne Stoke and used the marks left on a willow tree to measure the elevation of the flood water. Photographs show the flood water on a willow tree to be 1.5m above the bank of the River Till. The heavy rain of autumn 2000 falling on steep valley sides, where the geological strata dipped due to cambering, possible putty Chalk at the ground surface produced flash floods.</p> <p>What needs to be assessed is the overall area of steep sided dry valleys in the River Till Catchment. Many dry valleys are only 600-700m apart and comprise steep slopes. The Coal Industry in its technical guidance, that on a slope of 0.2 with short grass even on sandy gravel the run off coefficient can be as much as 0.3. Long flattened wet grass would aid run off.</p> <p>What may have been missed in the assessment of the flooding of the River Till’s the stream density, which is length of stream channel per unit area. The River Till has a large number of dry valleys which will produce water flow after heavy rain. Consequently, the presence of cambering (para 7), steep slopes to the side of the valley, in excess of 8 degrees and long grass which had been flattened (para 11) and high stream density (para 12) would have produced greater run off than standard models.</p> <p>As a consequence of this, the engineering works as a result of this Scheme, will reduce the ability of the valley of the River Till to transmit and increase the amount of discharge of water into it. Quote “10.3.1 <i>River Till viaduct</i>: the introduction of piers into the River Till floodplain has potential to interrupt flood flows and create a local backwater effect.”</p>	
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	<p>The Applicant admit the piers in the River Till will interrupt flows but there are other aspects that HE have not considered:-</p> <ol style="list-style-type: none"> The construction of the foundations in the ground and piles of the bridges bridge will reduce the storage capacity of the hyporheic zone of the River Till and its ability to transmit water southwards. This will cause the groundwater to rise and increase risk of flooding. The road embankment on the eastern side of the River Till reduces the width and flood storage in the flood plain. The weight of the road embankment will cause compaction, closure of the fissures in the Chalk and so reduce storage and permeability of the ground. Runoff from the A303 will be discharged via ponds into the valley of the River Till and will increase the risk of groundwater flooding and pollution. <p>The questions which needs to be asked are:-</p> <ol style="list-style-type: none"> Whether the Figure 5.2 River Till Flood Depth 15AEP Plus Climate Change 40% produces flood levels which are lower or higher than recorded in Autumn 2000 as shown by the mark on the willow tree and 1841. What will be the impacts of the engineering works mentioned in relation to the piers in the River Till on increasing the height of flood waters. Flooding always carries the risk for pollution should house drains be filled to capacity, causing dirty water to enter the groundwater. 	
18.2.7	40.1.17 As previously stated, fencing has already shown itself not to be a deterrent to trespass into our farm. The close proximity of byways to our holding bringing an increase in numbers of general public into the area will impact negatively on our farming business.	See responses on page 17-9 of the Relevant Representations Report [AS-026]. The management and enforcement of the public right of way network will be a matter for Wiltshire Council, as the traffic and highway authority, to regulate. Fences along public rights of way would be provided to prevent access onto private land, grazed grassland or the highway.

18.2.8	<p>40.1.20 MW-TRA7</p> <p>The Applicant has not assessed the impact of lorries on the Chalk when it is wet. The haul roads can only be designed when the weight of the lorries, area of the tyre in contact with the ground, acceleration and de-acceleration and frequency of their travel on them are known. To prevent damage to archaeological remains which could occur down to a depth of 1.5m below ground level, it may be necessary to construct haul roads with a thickness of 1.5m above existing ground level. In winter, ruts of up to 300mm are created along the tracks by 4 wheel vehicles, weighing 2 Tonnes.</p> <p>Lorries could weigh 117 T. The most damage to the ground is produced when lorries accelerate and brake as it causes rucking. Also it will not avoid compaction of the Chalk when wet and reduction of percolation, hence meaning restoration to free draining pasture will not be possible.</p>	<p>Haul roads are proposed through the works to minimise the need for construction traffic to use public roads. There will be two categories of temporary haul road utilised during construction:</p> <ul style="list-style-type: none"> • Chalk haul roads • All weather haul roads <p>Chalk haul roads would be contained wholly within the footprint of the permanent earthworks to avoid any additional impact to the underlying ground or to the archaeological assets.</p> <p>The anticipated line of all-weather haul roads is shown in Environmental Statement Figure 2.7 [APP-061] Note that within the WHS these routes are also contained within the footprint of permanent earthworks.</p> <p>See also the following references:</p> <ul style="list-style-type: none"> • [REP4-030] Summary of oral submissions put at Cultural Heritage Hearings, Agenda item 7.3 for explanation of different types of haul road. • [APP-040] Environmental Statement Chapter 2, paragraphs 2.4.17 to 2.4.20 for description of the haul routes • [APP-061] Environmental Statement figure 2.7 for location of all-weather haul roads. • [REP4-021] Outline Environmental Management Plan, item D-CH31 for commitment to constrain haul routes in WHS to the permanent footprint of the scheme. • [REP2-025] Response to Written Questions CH.1.3 for impact of vibration on heritage assets from haulage and CH.1.15 for construction access detail in WHS west of the tunnel.
18.2.9	<p>40.1.21 MVCOM4 and MW GE03 ES Chapter 10 Section 10.8</p> <p>The Applicant has not undertaken tests to ensure that Chalk after vehicles have been driven over it and spoil deposited upon it, can return to free draining pasture. Chalk, when wet and trafficked, becomes a slurry and low shear strength spoil from the TBM will</p>	<p>For those areas where tunnel arisings will be deposited (east of Parsonage Down), the Applicant recognises that the properties of the material produced by the TBM may preclude restoration to best and most versatile agricultural land, and hence the Applicant proposes restoration to calcareous grassland instead.</p>

	<p>seep into the fissures and seal them. Appendix 10.1, Preliminary Ground Investigation Report pages 105 to 110 discusses the extent and properties of structureless Chalk and Figures 6-35 and 6-36 PSD curves shows the fines content of Chalk graded at Dm and Dc see Figures 9 and 10. Most of the samples of Dm and Dc Chalk have fines contents greater than 10 %, so they will be susceptible to becoming slurries when their moisture content approaches their Liquid Limit.</p>	<p>Paragraph 5.2.20 of the DAMS [REP4-024] states that, “wherever possible, construction plant will travel along the alignment of the Scheme using the footprint of the proposed embankments and cuttings”, minimising as much as possible the impact on any land outside the earthworks footprint that is to be returned to agricultural use on completion of the Works. As stated in Clause 5.2.27, and in accordance with MW-CH5 of the OEMP [REP4-020], the contractor will prepare a Method Statement setting out, inter alia, how it intends to prevent deformation of topsoil/ subsoil horizons and how the measures would be reversed following the end of construction. This will also apply to working areas, as stated in paragraph 5.2.18 of the DAMS.</p> <p>As to the risk of the TBM spoil “seeping into fissures in the chalk and sealing them”, we would note that the particle size of the chalk fines is no smaller than that of the topsoil and subsoil that currently covers the chalk and which is currently regularly trafficked by agricultural plant to no apparent detriment.</p>
18.2.10	<p>40.1.25 No one has carried out any comprehensive baseline studies on our soil unless it has been done without our permission and knowledge. Please supply the dates that these surveys were carried out so we can check with our survey records.</p> <p>Have the detailed baseline surveys carried out only been desk top ones?</p> <p>When will we be provided with the baseline study data of our various soil parcels.</p> <p>The inherent fertility within the soil, as a result of years of the pig enterprise adding to the nutrient content of the soil need to be taken into account. We have not been told how this information has been incorporated into the survey.</p> <p>We will compare this data with our own SOYL land mapping of our farm within the area of the Scheme for reference.</p> <p>Soil characteristics are only as good as the reinstating programme. We remain unconvinced that HE are taking due care to minimise the impact of compaction on our land.</p>	<p>Detailed agricultural land classification (ALC) surveys have been undertaken across all the land that would be affected by the construction. The field survey work on Messrs Hosier’s land was undertaken by Reading Agricultural Consultants in 2003 as part of the development of the earlier scheme. Those findings remain entirely valid as ALC is concerned with the long-term inherent physical characteristics of the soil and not with short-term management or nutrient status. Additional surveys were undertaken on other land parcels in 2018 to cover areas of land not surveyed in 2003. The survey findings will form the basis of the Soil Resources Plan, as required by item MW-GEO7.</p> <p>Item MW-COM4 of the OEMP submitted at Deadline 6 has been amended to provide for the provision of Preconstruction Soil Statements. These will be used alongside the Record of Condition surveys (outlined within item MW-COM8) to provide a baseline schedule of soil condition against which the restoration of the soil will be assessed.</p> <p>The surveys were undertaken in accordance with the established methodology set out in MAFF publication <i>Agricultural Land Classification of England And Wales, Revised Guidelines and Criteria for Grading the Quality of Agricultural Land</i>, October 1988.</p>

		<p>Soil fertility is not an ALC survey characteristic and so does not affect the results of the assessment undertaken.</p> <p>Highways England has made commitments in respect of the restoration of land set out at items MW-COM4 and MW-COM5 of the OEMP.</p>
18.2.11	<p>40.1.26 The Applicant is passing all responsibility for numerous areas of the Scheme onto the mains work contractors. The Soils Management Strategy is one of many items under their remit. Item MW- GEO3 of the OEMP has scant information in relation to how the soil nature and types will be assessed and no details of what the methods for stripping soil or restoring the agricultural land will be. We are just expected to leave all these critical aspects to the mains work contractor that knows nothing about our farm land and probably using very little base line data.</p> <p>More detail is required please.</p>	<p>See response to agenda item 8.2 in the oral submission report from ISH4 [REP4-032].</p> <p>Detailed ALC surveys have been conducted and the nature of the soil across the Hosier land is shallow medium silty clay loam topsoils over chalk.</p> <p>These soils are of medium resilience to handling and, provided soil movement is undertaken when the soil is dry and friable and in appropriate weather conditions, the soil will not smear or compact. An outline Soils Management Strategy has been prepared and is included with Annex A.3 of the OEMP submitted at Deadline 6. This describes the methodology for identifying, moving and restoring soils and requires detailed method statements to be prepared. In addition to this, item MW-COM4 of the OEMP submitted at Deadline 6 has been amended to provide for the provision of Pre-construction Soil Statements. These will be used alongside the Record of Condition surveys (outlined within item MW-COM8) to provide a baseline schedule of soil condition at individual land holdings.</p>
18.2.12	<p>40.1.20 There is too little data in MW-GEO3 for us to assess the suitability of the measures proposed for stripping, storing and restoring the soil to the landscape. But we have concerns that the full understanding of the chalk subsoil has not been taken into account.</p>	<p>MW-GEO3 identifies the requirement of the Contractor to produce a Soil Management Plan. The SMP will be a substantial document and as MW-GEO3 states, will not simply detail the classification and movement of the earthworks materials, but will in accordance with the referenced Construction Code of Practice for the Sustainable Use of Soils on Construction Sites address issues of sustainability soil quality, erosion, compaction and drainage,</p> <p>The objectives of the Construction Code of Practice are:</p> <ol style="list-style-type: none"> 1. Identification of soil resources at an early stage in the development process; 2. Improved planning of soil use;

		<ol style="list-style-type: none"> 3. Improved soil management during project implementation, including sustainable use of surplus soil; 4. Maintenance of soil quality and function both on and off site; 5. Avoidance of soil compaction and erosion (with a consequent reduction in flooding and water pollution); 6. An improved knowledge and understanding of soil at all levels in the construction industry, including soil amelioration techniques. <p>The Soil Management Plan, when produced in accordance with MW-GEO3, will address the concerns raised regarding the contractors understanding and respect for the soils and landscape along the route of the scheme. This fully takes into account and allows for any chalk.</p> <p>In addition to the above points, an outline Soils Management Strategy has been prepared and is included with Annex A.3 of the OEMP submitted at Deadline 6. This describes the methodology for identifying, moving and restoring soils and requires detailed method statements to be prepared.</p>
18.2.13	<p>40.1.29 This paragraph provides no information and just requires us to trust that the Mains Work Contractor will deliver a good service. Will we, as the farmers of the land be consulted on reinstating measures? Will we even be provided with a copy of the Soil Management Strategy for our farm?</p> <p>40.1.32 This statement provides us with no depth of information, and requires us to trust that HE has identified the relevant issues, as well as ensured this is passed onto the contractors who are obliged to adhere to various contractual obligations.</p> <p>We would expect to be provided with a copy of the Soil Management Strategy that will be implemented for our holding.</p>	<p>The reinstatement of agricultural land will be undertaken in full consultation with the land owner as set out in OEMP MW-COM5 [REP4-020].</p> <p>The Soils Management Strategy will be developed by the appointed contractor following the guidance set out in the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) - secured through OEMP MW-GEO3 [REP4-020]. It will be informed by a Soils Handling Strategy and a Soil Resources Plan, as required by item MW-GEO7.</p> <p>Item MW-COM4 of the OEMP submitted at Deadline 6 has been amended to provide for the provision of Preconstruction Soil Statements. These will be used alongside the Record of Condition surveys (outlined within item MW-COM8) to provide a baseline schedule of soil condition against which the restoration of the soil will be assessed.</p> <p>The Soils Management Strategy will form part of the CEMP and, as such, will be publicly available on the register of requirements.</p>

18.2.14	<p>40.1.34 In terms of the specific points:</p> <ul style="list-style-type: none"> Outline Environmental Management Plan (OEMP) [APP-187] (a revised version of which is submitted at Deadline 3) MW-COM4 requires that the main works contractor shall undertake inspections of restored agricultural land with the landowner/tenant and Highways England's soils experts (and valuer, if required) to assess the progress of the restoration. Should there be any concerns these will be assessed by all parties and appropriate remedial actions or compensation agreed within the parameters of the compensation code and/or any previous agreements made at the time of acceptance of the initial restoration works and handover to the landowner/tenant; Detailed field surveys and analysis of soil physical characteristics (topsoil and subsoil) have already been undertaken and these have informed the preparation of Figure 13.1 Agricultural Land Classification Plan [APP-179]. OEMP MWG7 requires the preparation of the Soils Management Strategy (SMS) and MW-GEO3 requires the SMS to include a record of the nature and types of soil that will be affected; the field surveys and analysis data will inform the production of these documents; As set out above, OEMP MW-COM4 requires that the main works contractor shall undertake inspections of restored agricultural land with the landowner/tenant and Highways England's soils experts (and valuer, if required) to assess the progress of the restoration; this will necessarily require sampling soils; Soil structure takes time to repair and appropriate remediation actions will be deployed as required under the review processes described above. Whilst it is not possible to specify the particular actions and measures that will be required (such as the application of organic matter and muck through to mole ploughing and field drainage) at this stage, as set out 	<p>The methodology, level of detail, and the timing of the preparation of the Soils Management Strategy (SMS) is considered entirely appropriate for a project of this scale.</p> <p>An outline Soils Management Strategy has been prepared and is included with Annex A.3 of the OEMP submitted at Deadline 6. This describes the methodology for identifying, moving and restoring soils and requires detailed method statements to be prepared. In addition to this, Item MW-COM4 of the OEMP submitted at Deadline 6 has been amended to provide for the provision of Preconstruction Soil Statements. These will be used alongside the Record of Condition surveys (outlined within item MW-COM8) to provide a baseline schedule of soil condition against which the restoration of the soil will be assessed.</p>
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	<p>in MW-COM4 and MW-COM5 the restoration process is intended to proceed in full consultation with the landowner/tenant.</p> <p>The points referenced give far too little detail around the issues. We have concerns that matters are continually placed as the responsibility of the mains work contractor with the Applicant taking no responsibility and seeming to provide sketchy data for the mains work contractor to work with.</p>	
18.2.15	<p>40.1.37 With the deep cutting within the landscape, there is the potential to sever social group of badgers</p> <p>With such major construction works taking place along the length of the Scheme project, there is the strong possibility for this to impact on the badger population within the area. The suggested movements of badgers through the landscape as a result of creating green bridges will also make new territories available with the potential to spread TB to new areas. The real consequence of the tunnel scheme will be assessed by the results of annual TB testing and the level of increased damage to the scheduled monuments that seem to attract the badger populations. Nothing seems to be put in place to prevent further damage to archaeology by the increasing number of badgers.</p>	<p>As summarised within item 40.1.36 of in Comments on Written Representations [REP3-013] and item 9.7.3 in the Comments received to Deadline 3 [REP4-036], badgers already cross the existing A303, the construction activities are not considered to result in new badger territories being created. There are social groups of badgers on the Hosier land and their main setts would be unaffected by the Scheme. The Applicant considers that the inclusion of green bridges and mammal tunnels, and the closure of setts as anticipated for the Scheme would have no effect on the TB risk.</p> <p>Completely separate to the Scheme, Highways England is aware that a burrowing mammal strategy is being developed by the WHS Coordination Unit under a WHS Partnership Panel to investigate the scope to avoid or minimise the impact of burrowing mammals on scheduled monuments in the Stonehenge and Avebury parts of the WHS generally. This is one of the component strategies of the WHS Management Plan 2015 [REF], (Issue 11, pp.96-97) and is a priority for action in 2015-2021. The project is starting in 2019. Highways England is contributing to this partnership by funding the work on the burrowing mammals strategy from Highways England national Designated Funds.. A draft strategy is expected to be ready in spring 2020.</p> <p><i>[REF] Simmonds, S. and Thomas, B, (2015) Stonehenge, Avebury and Associated Sites World Heritage Site Management Plan 2015. Stonehenge and Avebury WHS Steering Committees.</i></p>

18.2.16	<p>40.1.41 We remain concerned as to the suitability of proposed access arrangements for our farming business. In the absence of detailed drawings we are not able to assess whether the width of the new A303 byway (noted as 4m wide) and the placement of the Kent Carriage Gates will provide adequate turning circle for us to get a tractor with livestock trailer/stock lorry into this area of the farm if it is needed for animal welfare concerns. Currently we can bring livestock into the far part of the farm using the existing A303 with no restrictions.</p>	<p>Part 4 of the OEMP [REP4-020] commits the Applicant to ensuring ProWs are surface where appropriate to their use including by agricultural and land management vehicles (P-ProW1), and that gates will need to be sufficiently wide to accommodate agricultural vehicles and machinery.</p> <p>Liaison would be carried out by the Agricultural Liaison Officer required by the OEMP to ensure that there is sufficient access utilising those gates.</p>
18.2.17	<p>40.2.10 The attributes of OUV, Integrity and Authenticity are in relation to the whole WHS, so to damage one part of the site cannot be mitigated to enhance the setting of another part of the site. This statement demonstrates a lack of understanding of OUV and the inscription of the WHS as a whole. This point was well debated during the Issue Specific Hearing on Cultural Heritage.</p> <p>As such, I disagree that there will be a slight beneficial effect on the OUV of the WHS as a whole, or that the OUV of the WHS would be sustained. For this statement to be true there needs to be no portals or deep cutting approach roads within the WHS.</p>	<p>The Applicant agrees that this point has been fully debated on previous occasions, and refers to its previous submissions on the topic, for instance at written question G.1.1 [REP2-021], as well as the response to agenda item 3vi, 4i, 4ii and 4iii in the oral submission report from ISH2 [REP4-030] and appendix A of that oral submission report. These submissions detail the correct application of the World Heritage Convention as part of the UK's legislative and policy framework, and discuss ICOMOS Guidance, which identifies that the process of assessing the impact of the Scheme on the WHS requires consideration of harm against benefits.</p> <p>In brief, in accordance with ICOMOS HIA guidance, both positive and negative impacts are considered against attributes of OUV integrity and authenticity and a judgment arrived at on the overall significance of effect, and it should also be noted that the Scheme has been designed to avoid assets that contribute significantly to the OUV of the WHS.</p> <p>The Applicant also directs the reader to Part 3 of the Highways England Response to the Comments made at Deadline 4 by the Consortium of British Archaeologists, which provides a further explanation as to how the attributes of OUV, Integrity and Authenticity have been considered in relation to the whole WHS in support of the Applicant's position that this approach is correct and supported by the relevant guidance.</p>
18.2.18	<p>40.2.12 The area from the western portal and the deep cutting within the WHS is an area within the WHS that has remained undisturbed by modern infrastructure. The importance of this area has been confirmed by the archaeological surveys carried out. This showed</p>	<p>Highways England disagrees that the western portal area and its approaches is undisturbed by modern infrastructure as the existing A303 is approximately 20m to the north of the Western Portal's position, and the roundabout at</p>

<p>the area has been in continual use over the Mesolithic, Neolithic and Bronze ages, so is a unique demonstration of how each era has respected the previous inhabitants yet built on the site introducing their developing culture as shown by the funereal monuments and evidence of every-day life. The western and eastern portals should not be in the WHS for the scheme to benefit the OUV.</p> <p>We disagree that the scheme is minimally intrusive in western and eastern portals and approaches. Just because the deep cutting approaches cannot be seen from a few positions does not mean that they are not carved deep into the archaeology. Their presence can never be removed from the WHS as the current road can, therefore the damage is irreparable. The Scheme strips the whole of a section of the WHS adjacent to the Winterbourne Stoke barrows of all archaeology, as such, it is destroying the WHS and not protecting it.</p> <p>We disagree that the Scheme improves the setting of the Winterbourne Stoke Barrow Group. There will still be the sight and sound of the road from green bridge 4, and the barrow group will still be severed from the opposite side of the WHS by a road as is the case currently.</p> <p>References to limited archaeological remains within the footprint of the tunnel are obviously disregarding the longbarrow and barrow G1 that are in the location where the tunnel boring machine will be rising to the surface. The unknown damage that vibration of tunnelling will cause on these heritage assets has yet to be assessed. Once damage has been done to the structure and placement of items within the barrows it cannot be put back. We struggle with the idea of monitoring as what will be done should it be shown that there is damage caused by the tunnel boring machine in this area? More information is needed.</p>	<p>Longbarrow is approximately 36m north of the western approach road cutting where it crosses the A360.</p> <p>Regarding positioning of the western portal outside the WHS - this has been considered in Highways England's previous submission to the Examining Authority in our response to Written Question AL.1.29 [REP2-024]. Regarding moving the Eastern Portal outside the WHS, this has been rejected due to its impacts on Blick Mead and the River Avon Special Area of Conservation (SAC), see response to point 3.2.7-3.2.9 in the Comments on Written Representations [REP3-013].</p> <p>Environmental Statement Chapter 6, Cultural Heritage [APP-044 – APP-054] and Heritage Impact Assessment [APP-195] recognise the impact of the cutting and have put in place appropriate mitigation to minimise its intrusion in key views including Green Bridge No. 4, the canopy over the western portal and suitable essential chalk grassland mitigation to aid landscape integration and minimise intrusion in key views [see APP-195, paragraph 9.4.43].</p> <p>The archaeological remains along the line of the western approach cutting and the western portal will be the subject of detailed archaeological excavation and recording prior to construction as set out in the draft DAMS submitted at DL4 [REP4-024].</p> <p>The assessment conducted by Highways England in preparation for submission of the Scheme documentation concludes that there will be an improvement to the setting of the AG12 Winterbourne Stoke Crossroads Barrows. Both the A303 and the A360, including the existing Longbarrow roundabout, will be removed from their present location immediately adjacent to AG12. The A303 will move 150m to the south and be built in cutting to remove the sight and sound of traffic from immediately adjacent to AG12. The benefits of this are demonstrated by the photomontages and CGIs presented in the ES Chapter 6, Appendix 6.9 [APP-218] (Figure 4, Figure 5 and Figure 7). Green Bridge No. 4 maintains the physical and landscape connectivity north-south and improves access through the addition of a Non-Motorised User (NMU) route across the green bridge.</p> <p>Regarding the reference to limited archaeological remains - this is with reference to the footprint of the western approach road, cutting and western portal footprint.</p>
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		<p>Regarding potential vibration and settlement damage on the bowl barrow south of the A303 and north west of Normanton Gorse (Wilsford G1 barrow) NHLE 1010832 and the long barrow 250m north of Normanton Gorse (NHLE 1008953), Highways England have responded to these concerns at ISH5 agenda item 6 (iii). Regarding vibration and ground surface movement monitoring and appropriate in-tunnel mitigation measures, these concerns are also responded to by Highways England at ISH5 agenda item 6 (iii) [REP4-033].</p>
18.2.19	<p>40.2.13 Just because the archaeological finds will be recorded and displayed does not justify the destruction of this area of the WHS. Research and understanding are good, but not when they come as a result of destroying part of the WHS.</p> <p>Preliminary works phase archaeological excavations would require 100% evaluation of the topsoil. The importance of the topsoil for understanding the WHS has been demonstrated on numerous occasions. All current independent survey work carried out in the WHS has a 100% evaluation of topsoil, so this would be standard practice for this scheme. This is the only opportunity to find out all we can about the people who constructed the monuments on the WHS, on whom our cultural heritage is based. The Scientific Committee have also put forward the need for 100% evaluation of topsoil.</p>	<p>Highways England disagree that we justify the loss of the archaeological remains through preservation by record; see Appendix B: Applicant's response to submissions in relation to paragraph 5.139 of the National Policy Statement National Networks (NPSNN) in the oral submission report from ISH2 regarding Cultural Heritage and Blick Mead [REP4-030]. The impacts, as assessed in the ES, are not reduced by the ability to archaeologically record the archaeological remains in advance.</p> <p>With regards to 100% sampling of the topsoil, Highways England disagree that every archaeological intervention within the WHS undertaken recently has required 100% sieving of the topsoil. This has been confirmed in discussions with Wiltshire Council and the National Trust. In terms of the opinion of the Scientific Committee in this regard, we also note that the Scientific Committee is made up of 13 independent experts in the archaeology of Stonehenge who do not all agree with regards to the need for 100% sieving of the topsoil. Each individual member of the Scientific Committee has their own independent opinions on this.</p> <p>As stated by Highways England at ISH2 [REP4-030] agenda items 7 (i) and (ii), we are working with Historic England, Wiltshire Council and HMAG, alongside developing the Detailed Archaeological Mitigation Strategy through consultation with the Scientific Committee, in order to develop an intelligent, reflexive mitigation strategy that responds to the significance of the archaeology in an iterative manner.</p>

18.2.20	<p>40.2.21 - No indication is given as to what measures will be taken should the ground movement monitoring stations show that there is a notable disturbance in the ground at the location of the scheduled monuments G1 and the long barrow in the line of the tunnel. It is not possible for the tunnel boring machine to go deeper to avoid these monuments, so how will potential damage be mitigated?</p>	<p>Please see Highways England's response set out in the summary of oral submissions made at ISH2 regarding cultural heritage agenda item 7 (iii), DAMS paragraph 5.2.6-5.2.8 [REP4-030], which provides further information regarding the tunnel movement monitoring stations. In particular, with regards to the ISH2 response, this states 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. The risk assessment sets out the staged process taken to assessing ground movement. Highways England has then carried out an assessment of the effect of the movement on heritage assets above the tunnel to determine whether there would be any adverse effects. The assessment has shown that any changes to heritage assets would be negligible. 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. 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). The Outline Environmental Management Plan (OEMP) submitted at Deadline 4 [REP4-020] sets out a requirement at Item MW-CH8 for the Contractor to develop a Ground Movement Monitoring Strategy including the identification of heritage assets that are at risk from ground vibration from the tunnel, or from ground surface movement caused by settlement. As part of this strategy, the contractor shall develop contingencies and identify measures to ensure the protection of assets.</p>
18.2.21	<p>40.3.12 We disagree with this statement [item 40.3.12]: <u>Misrepresentation of private land</u></p> <p>At no point does the consultation booklet make it clear that access will only be via the network of byways existing and new as a consequence of the Scheme. Access to the southern part of the WHS is just promoted as a result of the scheme. As such, the Applicant has themselves put the Stone curlew breeding population</p>	<p>Fences will be provided between private land and new public rights of way, similar to those existing along A303 and Byways 11 and 12. This will be developed in consultation with landowners (OEMP item MW-COM3) [REP4-020] and in accordance with Highway Construction Details in the Manual of Contract Documents for Highway Works (MCHW) and Design Manual for Road and Bridges (as per item P-PROW2). These fences will prevent the public accessing private land.</p>

<p>within this area under threat. The NT land at the northern part of the WHS is known to be open access land by the general public, as such, it is available for roaming and exploring. It would follow that general public could interpret that the whole of the WHS would be available once the Scheme is in operation.</p> <p>With lack of clear reference to byways being the only form of access, the inference being that the A303 is the barrier at the southern part of the WHS, so removing the barrier the area becomes readily available.</p> <p>The choice of words roaming and exploring used in the booklet is incorrect. Roaming means to walk without boundaries, so when used in conjunction with the word exploring, gives the impression that the whole of the southern part of the WHS is available for the general public.</p> <p>The vast majority of the monuments in the southern part of the WHS are in privately owned land. So encouraging them to explore the monuments is inaccurate. There is no mention of this within the consultation literature.</p> <p>The Applicants literature has not stated that the monuments within the southern part of the WHS are only available for viewing via a network of byways as they are under private ownership and do not form part of the EH or NT holdings.</p> <p><u>Clarification of public rights of way at supplementary consultation</u></p> <p>The Applicant provided clarity on public rights of way, with their status of use, ie BOAT/pedestrian/bridleways. But the booklet did not state that the byways would be the only means by which the southern part of the WHS would be available. If this was the intention then this should have been clearly stated. There was no statement that the land in the southern part of the WHS was privately owned.</p> <p>NT land in the northern part of the WHS is open access but it still has public rights of way through it. The general public would easily</p>	<p>The consultation materials were making the point that removing the road from the WHS will open up the use of byways and other PRowS either side of the existing A303.</p>
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	<p>assume that the whole of the southern part of the WHS would be made available once the road is removed into a tunnel.</p> <p>No mention is made that the only access to the southern part of the WHS is only via the byway.</p>	
18.2.22	<p>40.3.13 Enhancing public access and connectivity has the potential to clash with another scheme objective to enhance biodiversity and wildlife within sensitive areas.</p> <p>We do not think that this clash of objectives has taken into consideration the current tranquil habitat of the southern part of the WHS which nurtures species rich biodiversity.</p>	<p>Please refer to responses in Comments on Written Representations, paras 12.3.58 and 40.3.13 to 40.3.17 [REP3-013].</p> <p>A key objective of the Scheme is to enhance public access and connectivity to and through the WHS. To achieve this, the scheme is creating a number of new restricted byways, including along the route of the old A303, while maintaining the existing network. Beyond the creation of new byways, the scheme is not seeking to alter existing byway designations, nor is it seeking to provide access on to or through private land. Recreational disturbance from use of byways 11 and 12 has been taken into account in the environmental assessment.</p> <p>The creation of the new public right of way over Green Bridge No. 4 and the creation of chalk grassland on the bridge and on both sides of the cutting would provide both public access and enhancement for biodiversity.</p>
18.2.23	<p>40.3.14 The Applicant is failing to meet the Habitats Regulations, as they are not addressing the potential adverse impacts to Schedule 1, Annex 1 breeding birds at Normanton Down Reserve. No mitigation has been proposed. There is a lack of evidence provided by the applicant to “dispel all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned as well as the unknown impact of recreational pressures once the Scheme is in operation”.</p> <p>Biodiversity [APP-046] does not conclude “that no likely significant effects, including from recreational disturbance, would result on breeding birds”.</p> <p>To Quote 8.9.35 Established stone curlew plots at Normanton Down are south of the Scheme and more than 500m from the area of works at the western portal and the</p>	<p>As summarised within the oral submission for ISH7 regarding biodiversity and ecology [REP4-035] and in item 30.1.9 of Comments received to Deadline 3 [REP4-036], the Applicant stands behind the contents of the SIAA, although please see the response to item 18.1.4 above in respect of the Applicant's proposals for the provision of further stone curlew plots as part of a package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed scheme.</p> <p>Please refer to paragraph 8.9.38 of the Biodiversity Chapter of the Environmental Statement [APP-046] that concludes the effects during the construction phase would be neutral and not significant to the conservation objectives and biodiversity integrity of the SPA. The in-combination effects associated with recreational disturbance during the operational phase is described within paragraphs 8.9.186-187 of the Environmental Statement [APP-046].</p>

<p>landform already provides some screening relative to nest plots. Even if there is no closer nesting, there is the potential for birds to be disturbed on occasions if they are foraging in the area. With only low frequency of occurrence such disturbance would be minor and would not be likely to reduce breeding success</p> <p>and recruitment to the population. Mitigation measures have been provided in the OEMP to avoid the temporary indirect impacts of disturbance on breeding pairs of stone curlew, including the use of visual barriers. The bored tunnel would be constructed more than 10m below ground and noise and vibration from construction would be minimal at the surface and it would not be likely to cause any disturbance to stone curlew or other breeding birds at Normanton Down or in other locations near the route of the bored tunnel.</p> <p>Therefore, the references in 8.9.35 have been taken out of context and are in respect of disturbance at construction activity, noting a requirement of visual barriers for mitigation. 8.9.35 is not in relation to recreational disturbance and continues into para 8.9.36.</p> <p>In addition, we challenge the stated low frequency occurrence of foraging disturbance to the Stone curlews nesting at Normanton. Stone curlews will travel up to 9 miles to forage for their young whilst they are rearing the chicks, so references to distances in excess of 500m for foraging disturbance are inaccurate.</p> <p>Indeed ES Chapter 8, Biodiversity [APP-046] 8.6.15 (see below) Under Future Baseline Construction year baseline (2021) draws attention to the unknown applications and associations in relation to the increased residential dwelling and visitor pressures on the area, rather than the “no likely significant effects” stated in the Applicants response.</p> <p>8.6.15 The majority of the land to be impacted by the Scheme has been classified as agricultural land and associated linear boundaries. As such, the biodiversity</p> <p>baseline is unlikely to change significantly by 2021, unless any large-scale changes in agriculture policies and practices occur. The known applications and allocations associated with the provision of</p>	<p>With regards to foraging stone curlew disturbance, please refer to item 9.5.1 in the Comments received to Deadline 3 [REP4-036] which summarises the working methods detailed within the OEMP [REP4-020] that are considered suitable and proportionate to avoid disturbances on foraging stone curlews. The construction activities would not prevent stone curlew from foraging in the vicinity. In addition to which, as evident from air photography and from habitat surveys for the Scheme [Environmental Statement Figure 8.5 Phase 1 Habitat Survey [APP-151] there is abundant arable and grassland within which stone curlews could forage within the wider Salisbury Plains area (within 9 miles of the Scheme) if stone curlew travel up to 9 miles to forage.</p> <p>With regards to the mitigation measures incorporated into the construction phase, including screening measures that may be employed to avoid disturbance on nesting stone curlew, items PW-BIO5 and MW-BIO8 of the OEMP [REP4-020] highlight the measures that could be used and may include, but are not limited to maintaining areas of dense crops, installation of visual deterrents, and planting areas of quick grown crop to reduce line of sight.</p>
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	<p>residential dwelling (cumulatively approximately 2,000 dwellings) may result in an increase in visitor pressures on the areas surrounding the WHS; this may result in increased disturbance events on breeding stone curlews within Normanton Down RSPB Reserve. The</p> <p>majority of other applications are unlikely to significantly change the biodiversity baseline at 2021.</p> <p>Other references to disturbance under both construction and operation of the Scheme are found at:</p> <p>ES Chapter 8, Biodiversity [APP-046] 8.7.5 under Construction</p> <p>Disturbance: An indirect impact resulting from a change in normal conditions (light, noise, vibration, human activity) that would result in the important biodiversity feature changing its typical behaviour;</p> <p>And</p> <p>ES Chapter 8, Biodiversity [APP-046] 8.7.6 under Operation</p> <p>Disturbance: An indirect impact resulting from a change in normal conditions (human activity) that would result in the important biodiversity feature changing its typical behaviour, such as changes in roosting behaviour.</p> <p>Mitigation and enhancement for Stone curlews</p> <p>We have asked for more information about the “screening” that is being proposed for mitigation. We can find no details of what the screening will be, how tall, will it be a living screen, how will the living screens be established if topsoil is removed prior to construction, how will establishment of screens be made during periods outside the growing season?</p> <p>8.6.14 In the draft Statement of Common Ground between Highways England and Natural England, submitted to the Examination at deadline 2, at Issue reference 3.11, Natural England agrees there would be no disturbance of any other identified stone curlew breeding plot in the vicinity of the Scheme. In the Statement of Common Ground between Highways England and RSPB, RSPB is</p>	
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	<p>satisfied that indirect disturbance impacts on breeding stone curlew can be avoided with the implementation of suitable working practices during the construction phase.</p> <p>Agree that there will be no disturbance of any identified Stone curlew breeding plot in the vicinity of the Scheme. But this does not take into account the juvenile Stone curlew population that will be returning to the area that may be reduced to breeding in more marginal habitat. This was demonstrated by the stone curlews that nested in the vicinity of the archaeological survey during summer 2018.</p> <p>Stripping the topsoil off of the scheme area is creating a vast expanse of Stone curlew breeding habitat.</p> <p>Indirect impact on breeding stone curlews may be reduced, but will only be avoided if there is no construction activity taking place in the surrounding area during the Stone curlew breeding season ie March-September.</p> <p>We have asked for more details of mitigation screening methods in previous written material.</p>	
18.2.24	<p>40.3.16 The Winterbourne Down plot will provide additional nesting habitat for stone curlews but it will not form mitigation for any disturbance impact on Normanton Down as a result of increased recreational pressures resulting from ongoing residential building within the area. This is stated by RSPB within their Written Representation.</p>	<p>As stated within 30.1.8 of the Comments on Written Representations [REP3-013], the provision of the stone curlew plot at Winterbourne Down RSPB Reserve is considered a measure which would improve the resilience of the stone curlew population.</p> <p>Please also see the response to item 18.1.4 above in respect of the Applicant's proposals for the provision of further stone curlew plots as part of a package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed scheme.</p>
18.2.25	<p>40.3.17 The point we are making is that during the second consultation it appears that Normanton Down Reserve has been overlooked with its species rich ecology (Stone curlews) being ignored in favour of promoting the enhancement of Parsonage Down Nature Reserve (with the potential to attract rare birds). This is demonstrated by placing the map legend over the top of the</p>	<p>See response to item 9.5.2 in the Comments received to Deadline 3 [REP4-036]. The Scheme would not change the location of the adjacent Byways. The Scheme proposals have taken into account sensitive ecological receptors.</p>

	<p>Reserve. The orientation of the legend placement being inconsistent with the other maps in the booklet.</p> <p>For a scheme to truly provide biodiversity benefits the scheme would seek to protect the ecology of Normanton Down as well as look to extend Parsonage Down. But this has not been the case, as the SPA Stone curlew population at Normanton Down has been put at risk by the clash of scheme objectives, to protect Schedule 1 birds, but to also increase the numbers of people using the southern part of the WHS.</p> <p>We are unable to see where the design of the scheme has taken into account the breeding Stone curlew population at Normanton Down.</p>	
<p>18.2.26</p>	<p>40.3.17 <u>Enhanced fencing for Normanton Down</u></p> <p>Natural England and RSPB have been in discussions with HE consultants in relation to the Stone curlew population since 2017.</p> <p>We are disappointed that despite being the landowners of Normanton Down our requests for a meeting with HE ecology consultant were not granted until late March 2019. As such, we have not been able to feed into the proposed mitigation to add our years of experience working within the vicinity of Normanton Down. We respect the suggestions of the statutory organisations, but they do not understand the day to day issues, maintenance and practicality of their solutions.</p> <p>We have already stated in our Written Representation that our experience highlights that enhanced fencing will not provide mitigation to Normanton Down. It would be a waste of taxpayer's money onto the already costly tunnel Scheme, and for no certain protection to the Stone curlews at Normanton Down from recreational disturbance.</p> <p>The Applicant is failing to meet the Habitats Regulations, as they are not addressing the potential adverse impacts to Schedule 1, Annex 1 breeding birds at Normanton Down Reserve. No mitigation has been proposed. There is a lack of evidence provided by the applicant to "dispel all reasonable scientific doubt concerning the effects of the</p>	<p>As summarised within the oral submission for ISH7 related to biodiversity [REP4-035] and in item 30.1.9 in the Comments received to Deadline 3 [REP4-036] the Applicant stands behind the contents of the SIAA, although please see the response to item 18.1.4 above in respect of the Applicant's proposals for the provision of further stone curlew plots as part of a package of mitigation and enhancement in respect of stone curlew breeding opportunities in the vicinity of the proposed Scheme.</p>

	work envisaged on the site concerned as well as the unknown impact of recreational pressures once the Scheme is in operation”.	
18.2.27	<p>40.3.22 We note Environmental Statement Chapter 8 Biodiversity [APP-046] paragraphs 8.9.141-144. But would draw attention to the fact that table 8.7 Summary of the study area for likely important biodiversity features does not include Great Bustard.</p> <p>There were no field study methods or dates of surveys recorded in table 8.8 as per other noteworthy species so we question how the population can be assessed for the effects of the tunnel scheme.</p> <p>There has been a lack of communication with the GBG to learn about the behaviours and habitat of the Great Bustards, so the statement relating to disturbance are not based on fact (GBG Pers. Comm).</p> <p>Statements that no existing nesting sites would be lost to the proposed scheme are incorrect. GBG tried to contact HE consultants in spring 2018 to alert them to the fact that the archaeological surveys for the junction were taking place were in the location of nesting areas, but they did not engage. (GBG Pers. comm).</p> <p>We have asked for the location of where HE believe the construction compounds will be visible to the Great Bustards.</p> <p>No discussions have taken place with HE consultants as to appropriate screening for the compounds. (GBG Pers. Comm).</p>	<p>As stated within 9.7.19 in the Comments received to Deadline 3 [REP4-036], the Great Bustard Group contacted and were responded to during the 2018 archaeological surveys and ground investigation works (GBG personal communication).</p> <p>As stated within 9.5.4 in the Comments received to Deadline 3 [REP4-036] and agenda item 4.3 in the oral submission report from ISH7 regarding biodiversity and ecology [REP4-035], further consultation will be undertaken with the Great Bustard Group, this has been included within PW-BIO5 and MW-BIO8 of the OEMP [REP4-020] to aid the avoidance of disturbance impacts on great bustard.</p>
18.2.28	<p>40.3.23 We are pleased to note that Great Bustards are being acknowledged to have similar legal protection as Stone curlews.</p> <p>But Page 29, PW-BIO5 notes that if works were carried out at a time or location that has the potential to disturb Annex 1 breeding birds then work shall be undertaken under a method statement. Although the Stone curlews have their own specific mitigation under heading, there is no heading for Great Bustards. But, it is not possible to set out method statement for Great Bustards as there have been no</p>	<p>Natural England confirmed in its submission at Deadline 4 [REP4-082] that <i>"as a relatively recent reintroduction, the great bustard does not feature on Schedule 1 of the 1981 Wildlife & Countryside Act. Therefore, in legal terms, great bustard receives the same protection as other wild birds."</i> but went on to state: <i>"However, as great bustard are clearly very rare, it would be entirely legitimate to argue that it is of very high importance compared to other species. The degree to which such an argument is valid would depend on whether or not the latest evidence shows great bustards are self-sustaining (either currently or there is potential to become self-sustaining at some point</i></p>

<p>discussions with GBG to establish Great Bustard behaviour and habitat.</p> <p>There is also a need for survey work to be carried out to understand the requirements of this species. This has been overlooked with this scheme.</p> <p>There are no reference to the fact the Great Bustard chicks are wholly dependent on their mother for 9 months as the species has an extended post-natal rearing period. This period is critical as they learn everything necessary to their survival. Mortality of young is extremely high, but once past 12 months their survival rate increases.</p> <p>Preliminary works contractor (ecology) and mains work contractor ECoW should have prior experience of working with Great Bustards and specialist knowledge in this species. Liaison for monitoring and reporting would be with Natural England, Great Bustard Group as well as ECoW.</p> <p>Survey work will need to be undertaken to establish the correct distance for exclusion zones around any nest. MW-BIO8 sets out measures for Stone Curlews. No survey works have been carried out to establish whether the same criteria for Stone curlews would also apply to Great Bustards.</p> <p>The birds flush very readily from people on foot especially with dogs, they also move away from vehicles. But there is the potential for incubating females to be reluctant to leave the nest when the nest is directly impacted on by a vehicle, which can lead to the birds being run over. With the birds being difficult to spot when they are on nests this is of real concern.</p> <p>Reference to suitable protective measures (such as visual or noise screens), this cannot be with reference to breeding birds? Must be in respect of dissuading birds from breeding in the area.</p>	<p><i>in the future) as a population. We are not aware of this evidence."</i> For the purposes of this Scheme the Applicant views the importance (and thus protection) of great bustard similar to Schedule 1 species.</p> <p>As detailed within items 9.5.4 and 9.7.19 in the Comments received to Deadline 3 [REP4-036] and agenda item 4.3 in the oral submission report from ISH7 regarding biodiversity [REP4-035], further consultation will be undertaken with the Great Bustard Group. This has been included within PW-BIO5 and MW-BIO8 of the OEMP [REP4-020] to provide similar protection from disturbance impacts for great bustard as will be provided for stone curlew. This is because, although the disturbance distance for great bustard has not been as well studied as that for stone curlew, the species is considered to be similarly sensitive to disturbance from human activity.</p>
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18.2.29	<p>40.3.24 Furthermore, the grassland habitat creation (as secured at ref. MW-BIO2 in the OEMP [APP-187]) has potential to offer increased feeding areas for great bustard. Provisions of the Scheme such as the green bridges and diverting approximately 3km of the proposed Scheme into tunnel will also help to reduce the possible severance effects of the existing A303, and is likely to encourage dispersal into the wider landscape.</p> <p>This statement shows a lack of understanding for the Great Bustard species. See M & R Hosier comments in respect of document 8.10.7 Question Ec.1.22 ii)5</p>	<p>See response to item 9.7.23 in the Comments received to Deadline 3 [REP4-036]. It is acknowledged that great bustard is not solely a grassland species and the use of arable in the Wessex area is recognised and was discussed with the Great Bustard Group. As stated within paragraph 8.9.143 of the Environmental Statement [APP-046], both arable and open grassland are both considered to be suitable great bustard habitat.</p> <p>Great bustards are unlikely to be at risk from direct mortality associated with traffic (paragraph 8.9.223 of the Environmental Statement [APP-046]). The green bridges have therefore not been included within the Scheme as embedded mitigation for great bustard.</p>
18.2.30	<p>40.3.25 It is not possible to say that there are no records of GB nesting within the western section of the scheme as HE have had no formal meetings with the GBG at which to present data to feed into the reports.</p> <p>It is incorrect to say GB have not been identified within the western section of the Scheme as GBG approached the Applicants ecology consultants in spring 2018 to inform them that they were undertaking archaeological surveys within the nesting grounds of the birds.</p> <p>APP-157 is the redacted reports for Annex 1 species and Stone Curlews. These reports I have repeatedly asked for despite containing information that is on our farm and bearing in mind our close relationship with GBG and management agreement with RSPB. We were provided with the redacted report at the end of May, but the breeding areas had been redacted we had, therefore no one is able to confirm that APP-157 holds the correct information.</p> <p>[APP-046] ES 6.1 Chapter 8 Biodiversity- see M & R Hosier response from M & R Hosier in respect of Biodiversity 8.10.7 Question Ec.1.22 ii)3. There had been 2 meetings with the Applicant as noted in [App-046] one of these being when M & R Hosier invited GBG along to a meeting with the Applicant Ecology consultant as the GBG had been unsuccessful in establishing communications with the</p>	<p>The data provided by the Great Bustard Group on great bustard nesting locations [APP-157] and the breeding bird surveys undertaken to inform the Scheme [APP-255] were considered suitable to determine the baseline and the impact of the Scheme (paragraphs 8.9.141-144 and 8.9.223-224 the Environmental Statement) [APP-046].</p> <p>As stated within 9.7.21 in the Comments received to Deadline 3 [REP4-036], further engagement with the Great Bustard Group will be undertaken. This is secured in the OEMP [REP4-020].</p> <p>With regards to disturbance issues associated with PRoW, please refer to 9.7.22 in the Comments received to Deadline 3 [REP4-036], the PROWs are to be fenced, as such, PRoW users will be separated from private land, for which there is vast expanses of land for stone curlew to nest within. The mitigation measures and embedded design included within the Scheme are considered suitable to avoid impacts on the local great bustard population. The reference to great bustard in the area of A303 was with reference to presence of great bustard north of the proposed Longbarrow junction, from information provided by the Great Bustard Group.</p>

	<p>Applicant. As such GBG have never been asked to contribute information to include in the document.</p> <p>Further lack of understanding for the Great Bustard species is shown by the comments “GB are already within the area of the existing A303”. We believe the wording of the statement suggests the presence of fencing along the new A303, the downgraded A303 and other Public Rights of Way will prevent disturbance of the birds within the area. The Applicant have not carried out any surveys to assess the response of GB to various disturbance stimuli and have not consulted GBG for behaviour responses of the species. Similar to most bird wild bird species GB are disturbed by human presence and dogs. As such, fencing along the byway will offer no mitigation to disturbance.</p> <p>There have been no measures incorporated to mitigate for the increase in number of PRoW bringing more people into direct conflict with nesting and feeding Great Bustards.</p>	
18.2.31	<p>40.3.26 Due to a lack of willingness for consultation with the GBG to learn about the behaviour and breeding of the Great Bustards we fail to see how the proposed Scheme can be correctly assessed for the impact on the Great Bustard reintroduction project.</p> <p>No work has been carried out the the GB species to determine what level of population is required to sustain the species. Indeed many other reintroduction programmes require population levels to be several hundred to compensate for poor breeding years.</p> <p>We find it quite astounding that an Annex 1 bird has been overlooked throughout the Scheme putting emphasis instead on getting more people out into the surrounding area.</p>	<p>Great bustards are an Annex 1 species that has been reintroduced into the Salisbury Plain landscape (for which there is extensive habitat within the surrounding area). At this stage, it is not possible to confirm that the introduced population is currently self-sustaining. The data provided by the Great Bustard Group on great bustard nesting locations [APP-157] and the breeding bird surveys undertaken to inform the Scheme [APP-255] were considered suitable to determine the baseline and the impact of the Scheme (paragraphs 8.9.141-144 and 8.9.223-224 the Environmental Statement) [APP-046]. However, as detailed within item 9.5.4 in the Comments received to Deadline 3 [REP4-036] and the response to agenda item 4.3 in the oral submission report from ISH7 regarding Biodiversity and Ecology [REP4-035], further consultation will be undertaken with the Great Bustard Group. This has been included within PW-BIO5 and MW-BIO8 of the OEMP [REP4-020] with a view to obtaining updated information regarding nesting locations of great bustard and to avoid disturbance impacts on great bustard.</p>

18.2.32	<p>40.3.31 We have asked a number of times if we can have a list of the biodiversity species that are being targeted at green bridge 4 and the area of chalk grassland creation between the current A303 and the deep cutting.</p> <p>In respect of the area between the existing A303 and the deep cutting, there is already a large area of chalk grassland on NT land adjacent to the area, so question the extra biodiversity benefits of chalk grassland in this area.</p> <p>Greater biodiversity benefits would have been gained from placing chalk grassland in an area of predominantly arable so bringing in new biodiversity and providing a stepping stone for species to connect within the landscape.</p> <p>Porton to Plain project also notes that farmland birds are catered for in terms of all life cycles and stages including winter feeding provision. Stone curlew are amongst the farmland birds as are corn bunting and lapwing.</p> <p>WHS management plan notes 8.5 Nature Conservation 8.5.4 It is important to retain the mosaic of different types of land use as this enhances its biodiversity value. Arable land is valuable as a habitat for specialist wildlife such as farmland birds, arable plants and hares. Therefore it should be an aim to balance the needs of the archaeology, habitats for rare flora and the opportunities for farmland birds, for example provide wild bird food cover, grass margins and fallow plots when looking at strategic locations for reversion whilst reflecting the primary significance of the site. (Policy 3h/Action 59)</p>	<p>See responses to items 9.7.2, 9.7.3 and 9.7.4 in the Comments received to Deadline 3 [REP4-036]. The position and width of Green Bridge No.4 was determined for heritage inter-visibility reasons, however the width of the bridge would provide safe crossing for other species, including bats, barn owls, reptiles, and other mammal species. The chalk grassland would facilitate the spread of grassland species as well as chalk grassland invertebrates. It would contribute towards the biodiversity net gain within the area.</p> <p>Whilst farmland birds are an important part of the farmland eco-system, arable land is prevalent within the wider context of the landscape. The chalk grassland creation will provide east-west connectivity. The chalk grassland habitats created as part of the scheme would contribute to delivering the objectives of the WHS Management Plan for nature conservation (Policy 3h) in creating and linking chalk grassland. <i>Policy 3h – Explore and develop synergies between the historic and natural environment to benefit the WHS and the maintenance of its OUV. Maintain and enhance the overall nature conservation value of the WHS, in particular: maintain, enhance and extend the existing areas of floristically rich chalk downland turf; enhance the biodiversity of permanent grassland to extend the area of species-rich grassland and provide habitat for birds, invertebrates, bats and other wildlife. Seek opportunities for the expansion of chalk grassland where consistent with protecting the WHS to sustain its OUV and relevant biodiversity targets. Extend and seek new links with relevant conservation bodies, programmes and initiatives.</i></p>
18.2.33	<p>40.3.32 It is not possible to set out an ecology management plan if you do not clarify what species of flora, fauna and invertebrate you are targeting.</p> <p>We have asked for target species in relation to green bridge 4 and the area of chalk grassland to be created adjacent to the deep cutting. Are there different species targeted for different areas, this is not made clear.</p>	<p>See response to item 9.7.9 in the Comments received to Deadline 3 [REP4-036], which states that the position and width of Green Bridge No.4 was determined for heritage inter-visibility reasons, however it will also benefit a number of other species (as noted).</p> <p>The chalk grassland would not be created and managed as one homogenous type. As stated in OLEMP (ES Appendix 8.26, paragraph 5.1.1) [APP-267] the objective for the proposed areas of calcareous grassland is to provide diverse mosaics of the early stages of successional calcareous grassland</p>

	<p>As previously stated within our Written Representation, the OLEMP [APP-267] lacks information on the seeding of chalk grassland, the methods to be used and the time of year. The dismissal of brush harvested seed from Salisbury Plain Training Area and the omission of certain wild flower inclusion due to their height. Statements regarding weed wiping and non-grazing do not indicate practical understanding. For a scheme to promote invertebrate species mowing is the most destructive management tool and will not provide the “low maintenance strategy” that is referred to.</p>	<p>communities, ranging from sparsely vegetated bare ground and rock through to closed, species-rich swards, such as the more open calcareous grasslands traditionally present in areas of Salisbury Plain and Parsonage Down.</p> <p>With regards to brush harvested seeds, please refer to item 9.7.13 in the Comments received to Deadline 3 [REP4-036], brush harvested seeds may be used, however, it is not considered appropriate to restrict seeding to wild-harvested seeds.</p> <p>With regards to mowing, please refer to item 9.7.14 in the Comments received to Deadline 3 [REP4-036], which confirms Butterfly Conservation’s support of the management regime. Butterfly Conservation highlights where suitable mowing and collection measures have been successfully implemented during the habitat creation of the A354 Weymouth Relief Road, Dorset.</p>
<p>18.2.34</p>	<p>40.3.33 It is unclear whether the early successional habitats will remain as such within certain areas, or whether the intention is for them to develop over time to species-rich low nutrient swards. Early successional habitat is a phase of chalk grassland restoration, so it is not a final target.</p> <p>Early successional chalk grassland consists of many undesirable weed species that have to be topped and managed possibly several times a year for the first three years to control. The grass height itself is not the issue, the weeds are the problem. Therefore, these habitats have the potential to produce inappropriate nesting opportunities for Stone curlews, Great Bustards, and red listed skylark and lapwing.</p> <p>From experience, certain floral species are difficult to introduce into chalk grassland. Germination of seed requires both physical and chemical factors to break dormancy. It is quite possible that some species will never germinate even if introduced on a yearly basis. Chalk grassland takes many many years to establish with some species taking up to 5 years before they are detected.</p>	<p>See response to item 9.7.13 in the Comments received to Deadline 3 [REP4-036]. As described in the OLEMP [APP-267], the objectives will be to create a mosaic of early-successional habitats ranging from bare ground to a tight sward of species-rich low nutrient swards.</p> <p>Confirmation of the habitat target will be included within a combination of the detailed landscaping scheme to be submitted under Requirement 8 and the LEMP, prepared under the framework contained in the OEMP (MW-LAN1) which will also include management practices to remove / manage undesirable weeds It is agreed that grassland created on former arable land is likely to have more weeds which would need to be controlled than grassland created on nutrient-poor chalk substrate with minimal topsoil. Appropriate weed control would be carried out.</p> <p>It is correct that seeds may require certain conditions to be met prior to germination, however, previous case studies, such as the Weymouth Relief Road, Dorset, indicate that early stages of calcareous grassland can be established quickly from seeding. As such, the Applicant has a high confidence in the establishment of suitable calcareous grassland habitat. It is agreed that the composition of the chalk grassland would continue to develop over time.</p>

<p>18.2.35</p>	<p><i>40.3.34 MW-BIO13 <u>Botanical monitoring</u></i></p> <p><i>Details of vegetation monitoring to be undertaken during the construction phase, to inform future habitat creation, shall be developed by the main works contractor in consultation with Natural England.</i></p> <p><i>The ECoW (or an appropriate specialist) will undertake a programme of botanical monitoring to assess the development of mosaic of early-successional calcareous grassland and associated biodiversity within the Scheme.</i></p> <p><i>Results of monitoring from the preliminary works period will be used to inform habitat creation and subsequent management. Management action informed by monitoring may include, but is not restricted to, increase or decrease in the frequency, extent or duration of grazing or mowing, control of scrub, specific habitat management to create or maintain conditions for characteristic species of chalk grassland or other habitats.</i></p> <p>The above paragraph does not make its intentions clear. But following a discussion at Issue Specific Hearing 7, Biodiversity, we believe that it refers to monitoring of the heaps of topsoil removed from the Scheme by preliminary works that will subsequently be piled around the construction compound. The topsoil will be monitored for the early successional chalk grassland development and its associated biodiversity. This will inform habitat creation and management. If this is the correct understanding, we struggle how monitoring the development on the topsoil will inform this process as the topsoil will behave differently in a different aspect and having been extensively mixed. Arable weeds would predominate in this scenario. If no weed control is carried out on these topsoil stockpiles the weed burden on the soil will be vastly increased.</p> <p>There seems to be confusion within the various documents. First the Applicant states that <i>Under requirement 8 of the DCO, Highways England will be required to submit a detailed landscaping scheme,</i></p>	<p>As outlined in MW-BIO13 of the OEMP [REP4-020], botanical monitoring will be undertaken of chalk grassland created during the construction phase. It is anticipated that areas of landscaping would be completed at various stages within the construction phase. For example, the Winterbourne Stoke bypass and associated habitats would be expected to be seeded prior to completion of restoration of tunnel arisings at east Parsonage Down. The revised draft DCO submitted at Deadline 4 [REP4-018] requires the detailed landscaping scheme to be submitted for approval under Requirement 8 to include an 'implementation timetable for the landscaping works'. This scheme would be subject to Secretary of State approval.</p> <p>The botanical surveys would inform future habitat creation and management to be undertaken during the construction phase and subsequently.</p> <p>After seeding and planting, monitoring of vegetation would be used to inform management, such as weed control or mowing requirements and record the development of the habitat.</p> <p>As touched upon above, it should be noted that the detailed landscaping scheme required by Requirement 8 of the draft DCO would be subject to Secretary of State approval. The Landscape and Ecology Management Plan (LEMP) required to be produced under the OEMP will be approved by the Authority (which is Highways England in this scenario), and as such, Highways England will have ultimate oversight of the documents that are being produced.</p>
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	<p><i>which is required to be on the basis of the mitigation measures set out in the ES, which includes the OLEMP.</i></p> <p>But MW-BIO13 states that the ECoW will undertake vegetation monitoring to inform future habitat creation which will be developed by the main works contractor in consultation with Natural England.</p> <p>Reading through documents, a lot of the final planning responsibility is being passed onto the contractors to complete rather than HE themselves. With such questionable information in the OLEMP, and the contractors not having been part of the process this approach is vulnerable to failure.</p> <p>OLEMP [APP-267] notes that a landscape steering group will be set up to develop the management yet there is no mention of this within this statement from HE.</p>	
<p>18.2.36</p>	<p>40.3.35 The Applicant has not answered our question as to what “other objectives” may be. These objectives may be critical to the land management and yet they are not provided for full understanding of the Scheme and for comment.</p> <p>The Applicant has not provided a plan to show which of the chalk grassland areas will be managed by livestock and which areas will be just mowed. Although the Applicant has not directly stated, we believe that biodiversity is centred around invertebrate species, as such, we are concerned that mowing is being used for management. Rather than compromise the biodiversity by creating areas that are not suitable for livestock grazing, would it not provide greater benefits if areas were designed to facilitate grazing, otherwise the biodiversity becomes a secondary factor rather than a principal objective.</p> <p>For fencing to be fit for purpose, the areas for grazing need to be confirmed and accommodation works need to be decided in consultation with livestock managers to ensure that grazing infrastructure is fit for purpose.</p>	<p>See response to item 9.7.14 in the Comments received to Deadline 3 [REP4-036]. The locations of any grazed locations will be confirmed during the detailed design process. Where grazing is incorporated into the management regime, effective stock-proof fencing and appropriate infrastructure (such as watering locations) will be incorporated into the design where suitable.</p> <p>With regards to areas of scrub, these will be managed accordingly and confirmed in a combination of the detailed landscaping scheme to be submitted under Requirement 8 and the LEMP, prepared under the framework contained in the OEMP (MW-LAN1).</p> <p>As detailed within MW-G7 and MW-LAN1 of the OEMP [REP4-020] the contractor will be responsible for developing and producing suitable management plans and relevant statutory consultees will be consulted during this process. The plans will then be approved by the Authority (which is Highways England in this scenario), and as such, Highways England will have ultimate oversight of the documents that are being produced.</p>

	<p>OEMP had references to composting mowings in areas of scrub which is counterproductive to biodiversity. No plan of where these areas of scrub will be located.</p> <p>We have great concern that throughout the OEMP there are references to the contractor developing the management plans rather than HE as Scheme promoter.</p>	
18.2.37	<p>40.3.44 The green bridge only reduces the visual intrusion of the new highway within the WHS for the length of carriageway that it covers, therefore, the benefit is minimal. The visual intrusion between monuments is the same as the road will still be visible from the green bridge 4.</p> <p>In addition the green bridge only offers connectivity to the landscape by the small area it covers. It does not allow connectivity to monuments.</p>	<p>Please see response to item 9.7.8 in the Comments received to Deadline 3 [REP4-036].</p> <p>The visual intrusion of vehicles in views between monuments is avoided by the road being in deep cutting across the western part of the WHS before it enters the tunnel. As such, it is by being in deep cutting that the visual links between barrow groups are maintained. Please also see Highways England's response to Written Question Ag.1.7. The visual intrusion will not be the same as the existing views of the road from the barrow groups as illustrated in photomontages and CGIs presented in the ES Chapter 6, Appendix 6.9 [APP-218] (Figure 4, Figure 5 and Figure 7).</p>
18.2.38	<p>40.3.45 The Applicant has neglected to answer our question as to what biodiversity species are being targeted by green bridge 4. If the target species are not stated then it is not possible to develop, manage and monitor the chalk grassland and biodiversity.</p> <p>Refer to our comments on document 8.10.7 the relation to information within the OLEMP.</p>	<p>See response to items 9.7.3, 9.7.4, and 9.7.9 in the Comments received to Deadline 3 [REP4-036]. Green Bridge No. 4 has been designed to maintain a permeable landscape for a number of different species , including barn owls, badger, bats, polecat and hedgehog.</p>
18.2.39	<p><u>40.3.48 Weed burden</u></p> <p>This point could equally have been placed under Biodiversity heading, as the intention was to ascertain how ongoing weed control would be tackled on the top soil stock piles. Would the stockpile be sprayed with herbicide to remove all weeds, would the stockpile be mechanically weeded by turning over the topsoil? If cover crops were to be grown what weed treatment would ensure that notifiable weeds did not establish and set seed?</p>	<p>Soil stockpiles would be constructed in line with the recommendations set out in Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) - secured through OEMP MW-GEO3 [REP4-020].</p>

18.2.40	<p><u>40.3.48 Stone curlew measures</u></p> <p>OEMP [APP-187] PW-BIO5 under Stone curlew notes the necessity to deter Stone Curlew from nesting within the proximity of the scheme boundaries. Point a) refers to the use of visual screens to block line of sight to avoid disturbance outside the Scheme boundaries. This shows limited understanding of the Stone curlew species. The preliminary works clearing of the ground will create ideal habitat for breeding Stone curlews by removing all the vegetation along the area of the scheme. No mention as to whether all the area will be cleared all at the same time or whether this will be done in stages. There is no mention of the timing of the vegetation clearance in relation to the Stone curlew breeding season.</p> <p>The references to visual screening to block line of sight seem to be confusing the creation of Stone curlew habitat to the screening of breeding birds outside the Scheme. From the Issue Specific Hearing 7, Biodiversity we understand that the intention is for topsoil removed by preliminary works to be landscaped around the construction compound to create a visual barrier between the compound and Stone curlews within the wider landscape.</p> <p>Point b) Referring to planting temporary areas of bare ground with quick growing cover crops as visual screening. It is not possible to grow quick growing crops of any nature on an area where the topsoil has been removed (although we struggled to understand why the top soil was being removed as it would create Stone curlew breeding habitat). From Issue Specific Hearing 7, Biodiversity we now understand that the intention was not to plant the area where the topsoil had been removed from, but to plant the piles of topsoil around the construction compound. But this will not prevent the Stone curlews from nesting on the area where the topsoil has been cleared.</p> <p>OEMP does not therefore indicate how the expanse of bare ground created by the preliminary contractor will prevent Stone curlews nesting on the area.</p>	<p>As stated in the OEMP [REP4-020], vegetation clearance will, where practicable, be undertaken outside of the breeding bird season (unless specified) (PW-BIO4). As stated in PW-BIO5, it will be necessary (where practical) to deter stone curlew from nesting within, or in proximity of the Scheme, prior to the commencement of works. Deterrent measures installed would be site-specific and may include, but are not limited to, maintaining areas of dense crops, installation of visual deterrents, installation of visual screens, and planting areas of quick grown crop to reduce line of sight. Quick-growing crops would be expected to be effective where sown prior to the removal of topsoil, for example on the stone curlew plot which will be lost south of Parsonage Down.</p> <p>With regards to ecological competency, please see response 9.7.17 in the Comments received to Deadline 3 [REP4-036]. As stated in PW-BIO5 and MW-BIO8 of the OEMP [REP4-020], an appropriate specialist will undertake the stone curlew monitoring.</p> <p>With regards to monitoring, please refer to PW-BIO5 and MW-BIO8 of the OEMP [REP4-020], the RSPB and Natural England will be consulted. As detailed within item 4.2 of the Statement of Common Ground with the RSPB [REP2-017], long-term monitoring of the stone curlew plot utilisation within Parsonage Down SSSI and Normanton Down RSPB Reserve will be obtained from the RSPB and Wiltshire Council.</p> <p>With regards to the breeding cycle of 10 weeks, it was not considered suitable to require the protection of the nest for 10 weeks, as stated within item 9.7.17 of the Comments received to Deadline 3 [REP4-036], a nest is considered active (and thus protected) until the chicks are no longer dependent on the nest (please refer to PW-BIO4 of the OEMP [REP4-020]).</p>
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	<p>We welcome the increase of the disturbance zone around Stone curlews to 500m in accordance with Taylor Et All report.</p> <p>There is a crucial need for contractor's ecology staff to have prior knowledge and experience working with the Stone curlew species. This was demonstrated by the archaeological survey in 2018 at the western portal, where stone curlews nested within the survey area and the ECoW had to call on the RSPB Stone curlew team a number of times to locate the birds. The birds are notoriously difficult to spot even when you have experience with the species.</p> <p>Monitoring and reporting would need to be between Natural England but to also include the RSPB Stone curlew team, as they are the organisation that has the necessary experience working with the species.</p> <p>OEMP [APP-187] MW-BIO8 Refer to comments above for PW-BIO5. If the preliminary works contractor be different to the mains work contractor, then there is a similar need for the ECoW to be experienced with Stone curlew species. Monitoring and reporting would need to be between Natural England, RSPB Stone curlew team and ECoW.</p> <p>No mention is made for mitigation for Stone curlews feeding in the vicinity of the Scheme and the potential for this to negatively impact on the successful breeding of the Stone curlews.</p> <p>No mention is made that the breeding cycle of the Stone curlew is 10 weeks during which time the chicks are still dependent on their parents for survival.</p>	
18.2.41	<p>40.4.15 The non-statutory environmental body, The Great Bustard Group has not been consulted with in regard to details of Annex 1 Great Bustards.</p> <p>We have tried a number of times to facilitate a meeting for them by inviting them along to the first ecology meeting that we had with HE consultants in November 2017, but they have been continually ignored with scant information in the ES, OEMP or OLEMP.</p>	<p>As stated in Comments received to Deadline 3 [REP4-036] paragraph 9.7.19; there has been previous consultation with the Great Bustard Group prior to the commencement of archaeological surveys. The OEMP [REP4-020] provisions PW-BIO5 and MW-BIO8 have been updated to include Annex 1 species (i.e. including great bustard) and specific measures relating to great bustard have been added. As stated within PW-BIO5 and MW-BIO8 there will be consultation with the Great Bustard Group during the construction phase. Further measures which would minimise impacts on great bustard within the</p>

		OEMP include the construction of bunds around the perimeter of compounds (MW-G28), to avoid visual intrusion and help to screen activity. These measures are considered suitable to avoid disturbance of great bustard.
18.2.42	<p>40.4.19 Throughout our consultation responses we have made references to the errors. To name a few:</p> <p>Inaccurate documenting of the signage around Normanton Down Reserve – there are no entry signs and the information boards do not state that the Reserve is open at certain times of the year.</p> <p>Inaccuracies within the Barn Owl report showing a number of land parcels as arable when they are grassland.</p>	<p>The Applicant notes this comment however confirms that the RSPB reserve has signs on the fence line that prohibit members of the public from entering the Reserve.</p> <p>With regard to the barn owl habitat suitability and road casualties figure [APP-156], please refer to item 9.7.10 in the Comments received to Deadline 3 [REP4-036].</p>
18.2.43	<p>40.4.22 Our grievances are numerous, but outlined below are a few references: Minutes of meetings have been inaccurate and not provided until months later.</p> <p>Requests for meetings between a scheme hydrogeologist and our independent hydrogeologist to allow discussions to allay our concerns with our borehole water supply had been ignored. Instead, we were provided with a last minute meeting with a GI survey hydrogeologist, and a last minute meeting with the water modelling consultant to which we were unable to bring our hydrogeologist.</p> <p>Request for meeting with the ecology team was initially rebuffed having being told only the Applicant had the authority to grant meetings.</p> <p>Meetings when granted are months, or even years later from initial requests.</p> <p>There have been no meaningful engagement between ourselves and the District Valuer for negotiations on land take. No terms have been issued nor any indication of instructions to proceed with negotiations.</p> <p>No account has been taken of our farming calendar or management practices in relation to surveys. Rather than plan surveys ahead at suitable times of year, surveys have taken place at critical stages of</p>	<p>The Applicant acknowledges, with apologies, that minutes of meetings have been provided late on past occasions; however, going forward, minutes of meetings held with Highways England will be made available to M&R Hosier and to the Planning Inspectorate where requested, or where required to be provided as evidence.</p> <p>A meeting between the Hosiers and the HE groundwater modelling consultant was held on 29 March 2019. The effects of the Scheme on borehole water supplies are assessed in the ES and no likely significant effects are predicted [see Environmental Statement Chapter 11 - Road Drainage and the Water Environment APP-049, paragraph 11.9.3].</p> <p>The Applicant will continue to engage with all affected landowners on land acquisition. Negotiations led by the Valuation Office Agency have been initiated and will continue through the examination process.</p> <p>In terms of engagement with landowner, please see page 13-2 of the Applicant's Responses to Relevant Representations [AS-026]. The issue is also addressed in the Applicant's written summary of oral submissions made at the compulsory acquisition hearing held on 9 and 10 July 2019, submitted at Deadline 5. . These confirm that regular meetings have been held with affected landowners, occupiers and asset owners, and such engagement will continue as the Scheme is progressed to ensure that those individuals' requirements are met wherever reasonably practicable. We note also that provisional land values have been provided by the Valuation Office Agency</p>

	<p>the year, causing at great destruction to our crops and a vast cost to the taxpayer. This could have all been avoided by better planning and engagement.</p> <p>No account is taken of our years of experience in this area of the landscape. No account has been taken of our local knowledge. This has been demonstrated by the proposed use of dirt byways as access for archaeological surveys during the winter months.</p> <p>Failure of the Applicants consultants to fully understand the layout of the WHS in relation to access for surveys that led to the damage of scheduled monument SM10317. This has been overlooked.</p> <p>Clauses in survey licence agreements have been continually broken.</p> <p>Payment for invoices relating to survey work carried out by HE consultants have to be constantly chased and are often overdue.</p>	<p>and related discussion between Mrs Hosier and Highways England continues.</p> <p>With regard to access for surveys, Highways England has consulted and continues to fully consult with the landowner. Access points and routes are agreed before each survey and pre and post-condition surveys are carried out for all intrusive survey works along the access and works areas. Highways England will continue to manage survey works with farming activities and landowner preference where possible.</p> <p>Furthermore, no scheduled monuments have been damaged as a result of Highways England's surveys. The Applicant is aware that unsubstantiated allegations of damage to scheduled monument Bowl barrow known as 'Bush Barrow' and to two-disc barrows south east of Normanton Gorse forming part of Normanton Down round barrow cemetery (NHLE 1009618) have been made; however, Highways England strongly refutes the allegation that damage was caused by survey work carried out in connection with the Scheme. The scheduled monument was inspected by Historic England and no further action was taken by them.</p>
18.2.44	<p>40.4.23 Reports that are publically available have been provided but only after considerable delays and numerous requests. Typically, reports are received after the deadline date for responding to information. Other stakeholder organisation have been supplied with links to documents.</p> <p>Information that is not publically available, ie requests for information to fully understand survey works (to prevent any further damage to our farm property or inconvenience for both parties) are a constant source of frustration. Rather than providing specific answers to our questions, we are given answers to questions we have not asked. In addition rather than providing answers we are served with Section 172 Voluntary or Final access notices. We have made it clear that we are not preventing surveys from taking place, we just need to ensure all issues are resolved ahead before they commence.</p>	<p>Highways England notes this comment however wishes to clarify that the requests for reports have been made when the they contained information that was not publicly available. However the information requested by Mrs Hosier is now publicly available and has since been provided to Mrs Hosier.</p> <p>In respect of the use of S172 powers please make reference to page 13-11 of the Relevant Representations responses [AS-026]. We note that our preference for gaining access to land is through agreement with landowners, however where that has not been possible or project time constraints have been pressing, the use of s172 powers has been required.</p> <p>Pre and post condition surveys have been carried out on each intrusive survey and are prepared for the benefit of the affected landowners. These surveys provide the basis for the compensation claims, and we note that none of these are currently outstanding with Mrs Hosier.</p>

	<p>To mention a couple of other points, but by no means is this a complete list:</p> <p>We have had to ask for pre-condition and post condition survey reports which HE fact sheets note as being provided for surveys. Often reports have taken months to arrive.</p> <p>Pre and Post condition reports have been of such poor and inconsistent quality as to not be fit for purpose.</p>	
18.2.45	<p>40.5.10 and 40.5.11 1. The EIA computer model can be broadly correct over tens of Km², but there could still be a few fissures of a few mm wide present. The evidence for fissure flow are :-</p> <p>Borehole B is supplied by water from two fissures. It is likely that Borehole A is supplied mainly via water flowing out of fissures. These boreholes are south of the proposed tunnel.</p> <p>Blick Mead spring is supplied by water from a spring which flows at approximately 0.5m/s.</p> <p>Fishermen in the River Avon saw chalk sediment enter the water at Blick Mead while boreholes were being drilled on the landscape. This was brought up at the Issue Specific Hearing 11th June in relation to Groundwater. This shows there are inter connected fissures which enables groundwater to flow southwards from the location of the proposed tunnel.</p> <p>2. The Applicant has not inspected boreholes A and B and determined the nature of groundwater flow into them. This will require:-</p> <p>Tracer tests to determine absence/presence of fissures between site and Boreholes A and B and if so the travel time.</p> <p>Seasonal variations in water level, rest and pump water levels, any form of pumping tests to assess yield and drawdown, undertaken geophysical logging such as conductivity, temperature calliper, flow velocity (pumped and un-pumped) to determine elevation of major flow horizons.</p>	<ol style="list-style-type: none"> (a) The nature of the Chalk is discussed in detail in [AS-017] Implications of 2018 Ground Investigations to the Groundwater Risk Assessment. The Chalk is dominated by fracture flow (secondary permeability) and is heterogeneous with a wide range of hydraulic conductivity and transmissivity. There is no evidence of extensively connected fissures and fractures or karstic flow which would allow direct flow from the Scheme to water supply boreholes. (b) We have not seen evidence of the flow measurement referred to (note velocity units of m/s have been used). The spring at Blick Mead is dry for most of the year. (c) This was not substantiated or evidenced at the ISH. A detailed assessment of the operation of the boreholes is not necessary because the effects of the scheme will not be significant. See Deadline 3 Submission – 8.18 – Comments on Written Representations, Paragraph 40.5.13 [REP3-013] which states that Annex E of APP-282, Table E-3 assesses the effect on quality and quantity of the groundwater at licensed private drinking water abstractions including the two Hosier boreholes (table ref R7). The sensitivity of the borehole receptors is considered to be high which is in acknowledgement of the reliance on and quality of the abstracted water. No impact is anticipated. The predicted increase in groundwater level up hydraulic gradient and decrease in level down hydraulic gradient is not predicted to have a measurable impact on the operation of the abstraction even during drought periods. The effects of the tunnel as predicted in Annex 1 of the Groundwater Risk Assessment [APP-282] do not extend to these boreholes (Figure 4.6). With the use of the Outline Environmental Management Plan (OEMP) [REP4-020], there will be no measurable impact on the water quality at the two private water supply boreholes (Table E-3).

<p>3. The Applicant has denied that fractures in the Chalk are connected. Water flowing from Blick Mead Spring has increased after the heavy rainfall on the 10-11th June 2019 is flowing at 0.5m/s. This demonstrates the rapid downward percolation of rain to the water table and flow via fissures. At 0.5m/s, the groundwater is capable of travelling kilometres per day. It is possible to calculate the permeability from joints, based upon their aperture width and separation (Hoek and Bray Rock Slope Engineering p131)</p> <ol style="list-style-type: none"> Coefficient of permeability $K = b^3 g / 12 d v$ where b = width of fissure, g = acceleration due to gravity = 9.81 m/s^2, d = spacing of joints, v = kinematic velocity of water at 20 Centigrade = $1.01 \times 10^{-6} \text{ m/s}$. For a 5mm wide crack, $K = 1.2 \times 10^{-1} \text{ m/s}$ and for a 3mm wide crack = $2.2 \times 10^{-2} \text{ m/s}$ which represents permeability of 9000 and 565 times that for a 50m at 1m per day travel time. <p>4. The Computer model uses a grid of 250m. A 5mm fissure is $0.005/250 = 1/50,000$. Modelling is accurate to at most 10%. If we divide the block into 50,000 slices with 49,999 having a permeability of 1 we can calculate what the 1/50000th has to equal to increase average by 10%.</p> $(49,999 \times 1 + x) / 50,000 = 1.1$ $49,999 + x = 55,000$ $x = 55,000 - 49,999 = 5001.$ <p>Therefore a fissure 0.005m thick could have a coefficient of permeability 5001 times the other 49,999 slices and it would only increase the value of the 250m block by 10% which is within HE margin of error. Therefore the model may be correct and still ignore fissure flow.</p> <p>5. As Hoek and Bray (3rd Ed 1981) state p131 the permeability of the rock is very sensitive to the opening of the discontinuities) which change with stress. Therefore permeability of rock will be sensitive to stress. Consequently the Applicant cannot state that the Stonehenge Tunnel is similar to those in London unless they state the stress, which is the overburden pressure, the width and frequency of</p>	<ol style="list-style-type: none"> Fracture flow is not denied. There will be various interconnections across the rock mass. The flow through these as a whole is measured by the aquifer properties derived during the pumping tests which have been carried out. It is not realistic to scale up flow at the scale of a fissure to regional flow dimensions. There is no evidence of interconnectivity across extensive areas. Each model cell is represented with aquifer properties appropriate to local data and the hydrogeological domain, such as interfluvial, dry valley, river valley. Groundwater flow through this cell is accurate according to the representative aquifer properties used and the groundwater level and river flow calibration achieved. The ES shows the calibration is good and has been accepted by experienced groundwater modellers from the Environment Agency and Wiltshire Council's groundwater modelling consultants peer review. Each model cell is represented with aquifer properties appropriate to local data and the hydrogeological domain, such as interfluvial, dry valley, river valley. Groundwater flow through this cell is accurate according to the representative aquifer properties used and the groundwater level and river flow calibration achieved. The ES shows the calibration is good and has been accepted by experienced groundwater modellers from the Environment Agency and Wiltshire Council's groundwater modelling consultants. Acidisation is an accepted technique for improving flow at a water supply well. It will not however alter the aquifer parameters which are derived from the pumping test. In the Chalk aquifer it is not unexpected that pumping test results at different times and places give different results. This demonstrates the variability of the aquifer and the absence of a uniform network of interconnected fractures. The model accounts for north south higher permeability in Stonehenge Bottom valley with an additional higher permeability zone as recorded in the pumping tests. Therefore, north south trending features have not been ignored but explicitly incorporated. The dominant flow direction is north to south.
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<p>fissures/apertures, groundwater gradient, flow rate and flow velocities.</p> <p>6. The pumping tests undertaken by WJ Engineering and Structural Soils were undertaken in boreholes which were not acidized. WJ used a cable percussion rig and Structural Soils used a tricone rotary bit –open hole. Drilling smears the Chalk, producing a mud cake lines the walls of the borehole which infills the fissures. Eductors can remove some of the mud cake but to be reliable acidisation should be undertaken, as recommended by the late Dr Richard Monkhouse of the British Geological Survey. Rotary open hole methods produces a far thicker mud cake than cable percussion methods as the drilling flush is blown against the walls of the borehole and into the fissures-see Figure 1. Figure 2 figure 6.16 from S A P test 2018 Inter' Report) below shows that the boreholes drilled by SRK produced lower Transmissivities than WJ Engineering when comparing summer results. Therefore there may be fissures present whose entrance in the borehole wall have been completely or partially closed by mudcake.</p> <p>[GRAPHS PROVIDED IN RESPONSE]</p> <p>7. Stage 4 Implications of 2018 Ground Investigations to The Groundwater Risk Assessment Working Draft HE551506 April 2019</p> <ul style="list-style-type: none"> d. 2.3. 1 says fractures not persistent between boreholes which is East West direction, not North South. e. 3.2.6 Fracture zone is not persistent in an east west band. <p>The report ignores the presence of dry valleys running north south and the presence of faults which run North South. The fact that springs are supplied by groundwater flowing from the north to the south shows the Applicant have ignored the presence of North South trending interconnected water bearing fissures. Grout from the TBM could easily flow southwards and either block water bearing fissures and/or cause contamination of groundwater entering Boreholes A and B. The report is concerned with assessing the presence of</p>	<p>The tunnel is perpendicular to groundwater flow so the east west extent of the postulated preferential flow horizon was important to review with additional ground investigation data, in terms of the potential impediment to flow and whether the assessment was conservative. The findings were that the risk assessment was conservative.</p> <p>The effects of the Scheme in relation to the boreholes which are a distance of several kilometres from the Scheme have been fully assessed. See also the response to item 18.2.45, point 2.</p>
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	<p>interconnected fissures running East West along the rout of the proposed tunnel, not those running North South.</p> <p>For all the above reasons we do not agree that the Scheme has been fully assessed in relation to our private borehole supply.</p>	
18.2.46	<p>40.5.12 The Applicant has not sampled water according to the Private Water Supplies Act of 2016 and specifically for pathogenic bacteria. M and R Hosier have to supply potable water. There is no way of measuring pathogenic bacteria in real time. A sample has to be taken and the minimum time for results is 5 days. The Applicant has completely ignored groundwater flowing southwards along fissures. Blick Mead Spring shows groundwater flowing at 0.5m/s or even 0.1m/s which over 50 days means contamination could flow from the site of the proposed tunnel to Boreholes A (no water treatment) and B (Ultra only).</p>	<p>See response to item 9.6.1 and 9.6.4 in the Comments received to Deadline 3 [REP4-036]. HE confirms that its groundwater samples have been compared to the UK Drinking Water Standards (see paragraph 3.10.2 of APP-282 and Table 3.6). HE is not proposing to take on the role of the Local Authority or the Drinking Water Inspectorate (DWI) with regard to Private Water Supplies. The Drinking Water Inspectorate (DWI) is the competent authority for ensuring the Drinking Water Directive requirements are met in England & Wales. It provides independent reassurance that public water supplies in England & Wales are safe and drinking water quality is acceptable to consumers.</p> <p>For the response to fissure flow see response to item 18.2.45.</p>
18.2.47	<p>6.3 Appendix 2.2 OEMP May 2019</p> <p>MWWAT11 ES chapter 11 section 11.7 Management of impact on abstraction boreholes and MW- COM6 Statement of Common Ground Private Water Supplies</p> <p>The Applicant has failed to design alternative temporary or permanent supply of water for M and R Hosier should it be needed.</p> <p>The Applicant has not Assessed how M and R hosier will be supplied with water if they lose their supply. If M and R Hosier pose their borehole supply they will need to order in water via lorry. The water tanker cannot reach the farm reservoir. The closest point will require the construction of a holding tank into which the lorry can discharge the water and then a pump to move it to the farm reservoir, a distance of 1000m and 30m head. To maintain a water supply will require a 30,000L lorry weighing 40T. It is not known whether the farm track can take a 40T lorry every day for months at a time, especially during winter. To obtain an emergency supply of potable water from Waterdirect (quote No 19-05384.2) for weekday is £1722</p>	<p>See response to agenda item 5.1 in the oral submission report from ISH4 [REP4-032].</p> <p>Highways England, as the Scheme promoter, is responsible for ensuring that groundwater resources, including the supply and quality of groundwater, are protected during the construction and operation of the Scheme. Potential impacts on water supplies will be mitigated through the implementation of measures included within the Outline Environmental Management Plan (OEMP) [REP4-020] (at references PW-WAT1 and WAT2, and MW-WAT1, WAT2, WAT3, WAT4, WAT5, WAT6, WAT7, WAT9, WAT10, WAT14, and WAT15), which is secured through paragraph 4 of Schedule 2 to the draft Development Consent Order [REP4-018].</p> <p>As set out in the Environmental Statement, Chapter 11, Road Drainage and the Water Environment [APP-049], section 11.9, the assessment shows no significant changes to hydrology, private water supply, surface water quality or groundwater quality (water supply) during either the construction or operational phases of the Scheme. Highways England has been working with and will continue to work with Wessex Water and other statutory utility</p>

	and for weekends is £2040 (quote 19- 05384.4). To construct a holding tank, install a pump, electrical supply (perhaps 3 phase), 1000m of pipe and perhaps strengthen the road will cost £1000s and take weeks. To obtain the services of a good water well driller will take 18 weeks and to complete a new water supply borehole will take 26 weeks. Total costs will be in the order of £278,000. The farm reservoir holds 1 days' supply and after that livestock, especially in summer will suffer heat stress and even death. Waterdirect have not inspected the site and so it may not be accessible by a 40 T lorry. HE need to assess that road so it can take Lorries throughout the year.	providers as required to ensure that water supplies are protected during the construction and operation of the Scheme.
18.2.48	40.5.16 Wessex Water will be assessing the water impacts of the Scheme on public water supplies. They would hold scant information on our private borehole supplies, therefore would not be in a position to comment on them accurately.	The ongoing monitoring of private boreholes is taking place across the Scheme which will inform any works that Wessex Water need to complete additional water supply works. Any associated works regarding private water supplies are also secured through the OEMP, MW-COM6 [REP3-006].
18.2.49	40.5.17 MWWAT3 ES Chapter Section 11.Section and MW AIR 1 ES Chapter 5, Section 5.8 How will the silt sized particles be prevented from being blown off the spoil heaps. Silt is the particle size most susceptible to erosion by wind or water. Loess is a soil comprising wind-blown silt. The silt containing phosphate would be blown into the Rivers Till and Avon causing algal blooms. Silt containing phosphate could be washed into the groundwater and rivers causing growth of algae and/or bacteria. A major aspect of good soil management promoted by the Government is to prevent nutrients, especially phosphate carried by soil particles, from entering water courses to prevent eutrophication.	Good soil management as promoted by the Government is fully accounted for in the approach, management and controls proposed within the OEMP [REP4-020]. As outlined within Items PW-AIR1 and MW-AIR1 of the OEMP, contractors shall manage dust, air pollution and exhaust emission during the construction works in accordance with Best Practicable Means. This includes management measures in relation to stockpiles which include stockpiles being covered, seeded or fenced to prevent wind whipping. It is therefore considered that the risk of silt blowing or washing into the rivers Till and Avon causing algal blooms is minimal.
18.2.50	40.5.18 Monitoring has yet to take place, so potentially there will only be 18 months' worth of data prior to the construction work taking place. We suggest that this level of monitoring is inadequate to supply base line data considering all other Scheme monitoring boreholes have taken place since 2017.	It is not unusual to have a relatively short record of groundwater level data local to a scheme and extend this with longer records from boreholes across the catchment. Longer records are available across the catchment including south of the Hosier's at the EA's OBH Stoford Cross, and north of the proposed scheme at Wiltshire Grain Silo, and west and east of the scheme at Berwick Down and Amesbury respectively.

		Additional monitoring was reviewed against the model simulation in AS-019 which shows the model simulates groundwater levels in the areas of new groundwater level data well.
18.2.51	<p>40.6.5 The sectional diagram was only provided on 24th May with deadline 2 being 3rd May and deadline 3 being 31st May.</p> <p>The area that I was referring to is not in the location of the western approach to the tunnel as per G- G1, noted on page 5, but on page 6 in the vicinity of the western portal. The area of ground in the location of the western portal follows the dry valley. The A303 was built up in this location in the 1970's as the blind dip in the road was an accident black spot. The current A303 is at a much higher level in the area of the western portal approach than the ground level on the southern side being considerably different height to the A303 on the northern side. There is no sectional diagram noted in the vicinity of the western portal.</p> <p>From previous discussions with the Applicant we have been told that the area of land between the current A303 and the deep cutting will not be landscaped and the topography will remain as it is. We are told this is a cultural heritage decision to minimise damage within the WHS. Perhaps this has subsequently been changed as there is reference to the slopes on the upper part of the retained cutting being graded back.</p>	The western portal is proposed to replicate existing ground levels as far as practicable, subject to the limits of deviation as indicated on the environmental masterplan [APP-059] and any new landscaping is to reflect and integrate with the original landscape as set out in P-LE02 of the Outline Environmental Management Plan [REP4-020]. There would be graded slopes from the top of the retained cutting structure and the existing landform, as indicated on the General Arrangement Drawings (Sheet 7 of 15) [APP-012].
18.2.52	<p>40.6.6 We believe that there would be views of the retained cutting and the traffic on the road below. There are no sectional drawings in the location of the western portal and the section just after the western portal to confirm otherwise.</p> <p>Cultural Heritage Setting Assessment [APP-218] page 157 figure 8 viewpoint CH07 shows a photomontage of proposed view west, looking into green bridge 4. This photo has been taken from our landholding beyond the redline boundary for the Scheme and it clearly shows the retaining walls of the cutting and the entrance of green bridge 4.</p>	The Applicant has outlined that there would be close-range views of the retained cutting in their response at Deadline 3 [REP3-013] due to this being an area of open cutting. The Applicant has also referred to the cultural heritage viewpoints (including CH07) within this response which demonstrate proposed views.

18.2.53	<p>40.6.7 Figure 7 image CH06 provides a viewpoint of the green bridge 4 that will not be available to the general public. It is taken from the only visible barrow (longbarrow) in the privately owned Diamond Group. This intervisibility of the monuments will not be available to general public. A more appropriate viewpoint for a 360 photo would be from the location of green bridge 4.</p> <p>Figure 8, CH07 is a 360° image taken from outside the redline boundary of the Scheme. The entrance of the green bridge 4 is clearly shown as well as the retaining walls of the cutting. Lighting is proposed under green bridge 4 so this will also be seen in the surrounding landscape.</p> <p>Figure 11, image CH10. We struggle to understand this photograph. From Figure 1, Cultural viewpoints, page 150, the arrow marker shows that the photograph has been taken looking down along the A303. Yet the visual produced shows the traffic running from left to right, ie the photograph has been taken looking side onto the A303. Had the photograph been taken in the direction indicated we would be looking at the back of the tunnel and not into the mouth of the portal. One could be forgiven for thinking that the photograph has been taken from location CH09, but looking side onto the A303. As such, there is no representative viewpoint for CH10.</p>	<p>A viewpoint from Green Bridge No. 4 is being undertaken in response to Written Question (LV.1.9). Requirement D-CH10 of the Outline Environmental Management Plan [APP-REP4-020] requires lighting under Green Bridge No. 4 to only occur between dawn and dusk, be dimmer controlled, and designed to minimise light spill outside of the bridge footprint such that it will not be visible in the surrounding landscape as per the suggestion in the questions.</p> <p>Image CH10 is located to the south of the existing A303 looking west. Figure 1 does not locate the arrow along the existing A303 but along the alignment of the proposed tunnel, so that the existing traffic is to the right of the location of the view, as per CH10. There is therefore a representative viewpoint for CH10.</p>
18.2.54	<p>40.6.8 There has been no provision of views from green bridge 4. Standing on the bridge the view to the east will be onto the surface of the carriageway emerging from the western portal. The view from the west will be onto the carriageway as it approaches the longbarrow junctions.</p> <p>There will be no improvement in the tranquillity within the area of green bridge 4. Green bridge 4 does not provide visual or physical connectivity within the area.</p>	<p>Views from the western and eastern edges of Green Bridge No. 4 are being produced in response to Written Question (LV.1.9). Views from Green Bridge No. 4 were not included in the visual assessment [APP-045] because they are not an existing view from publicly accessible land, which forms the premise of the identification of views. The locations of the views for the visual assessment was agreed with the National Trust and Wiltshire Council as set out in paragraph 7.3.18 seq of APP-045. Green Bridge No. 4 will provide physical connectivity as it will cross the retained cutting and provide a restricted byway. Please refer to the Applicant's response to item 18.2.37 above for a response regarding the visual and physical connectivity between monuments provided by the green bridge.</p>

	<p>We remain of the opinion that the scheme as presented does not benefit the OUV of the WHS. The road and portals would have to be completely removed from the WHS for this to be correct.</p>	<p>The proposed Scheme is considered to improve the tranquillity across the WHS by both the use of a tunnel and the retained cutting. This will include from Green Bridge No. 4 as the road and vehicles will be in cutting, rather than at surface level, as per the existing A303 and with reference to D-NO115 within the Outline Environmental Management Plan [REP4-021] the surface finish of the retaining walls at the approaches to the tunnel portals shall be designed to reduce the reflection of noise .</p> <p>The proposed Scheme is considered to result in beneficial effects to the OUV of the WHS as set out in the Heritage Impact Assessment [APP-195].</p>
18.2.55	<p>40.7.8 Although responsible for the management and enforcement matters relating to byways 11 and 12 Wiltshire Council are failing their responsibilities. Fly-tipping remains on site for months despite reporting. Damage to scheduled monuments is not addressed despite having brought this to the attention of Wiltshire Council and Historic England. Illegal campers are permitted to reside on the byways for 6 months plus without being moved on even after continually bringing this to their attention. I fail to see how this situation will change after the new road Scheme is in place, indeed there is every possibility that the problems will increase as there will be additional miles of byways for Wiltshire Council to enforce and manage.</p> <p>As demonstrated at the ETRO on the byways 11 and 12 from summer solstice 2018 to winter solstice 2018, the trails bikes were still able to use the byways via the side gates so no doubt they will continue to do this as enforcement will be minimal.</p> <p>It is highly likely that the poaching fraternity will adapt their means of transport to enable them to use the equestrian gates or traverse the Kent Carriage Gates.</p>	<p>The management and enforcement of access across the WHS including byways 11 and 12 is a matter for Wiltshire Council (as the highways authority with responsibility for the public rights of way).</p> <p>WC have the necessary legal powers to control potential problem issues raised, including parking, anti-social behaviour and fly-tipping. Fences along public rights of way would be provided to prevent access onto private land as required (pursuant to MW-COM8 and P-PRoW2 of the OEMP. Public access to bridleways would be controlled by equestrian gates which are too narrow for most vehicles to use. Public access to restricted byways would be controlled by Kent carriage gaps which are designed to prevent entry by vehicles.</p>
18.2.56	<p>40.7.18 In order to better understand the addition of the bridleway along the A360 I walked the area to see how it compared with the views of byway 12 and 11. I was disappointed by the views along the section between the byway 12 and the current A360 roundabout. The barrow groups are not prominent along the walk, being obscured by</p>	<p>Highways England wishes to ensure that the Scheme is integrated within the existing Public Rights of Way network and, where the opportunity exists, create legacy benefits for non-motorised users in accordance with its Strategic Business Plan and Roads Investment Strategy, which are aligned</p>

	woodland and topography. The views from byway 11 and 12 will still provide the best aspects in the southern part of the WHS.	<p>with Government policy to encourage walking, cycling and horse-riding through national and local policies and plans.</p> <p>The proposed bridleway along the A360 is therefore provided to facilitate a connection between the proposed and the existing public rights of way network linking the existing byway open to all traffic WFOR16 (part of “Byway 12”) in the south and the proposed restricted byway along the A360 north of the existing restricted byway BSJA9.</p>
18.2.57	40.7.20 We do not agree that it is our responsibility to enforce the access onto our private land. The proposed byway puts a new pressure on our farming business and woodland as it is not of our making it would be HE responsibility to ensure that adequate measures are in place to prevent trespass.	The new byways are all along existing highway with existing access rights for the public. Strained Wire Fences with barbed wire strands as necessary would be provided along public rights of way to separate the public from adjacent private land (P-PRoW2 of the OEMP).
18.2.58	<p>40.7.21 Our experience with trespass into our farm highlights that fencing is no deterrent. General public ignore signs to private property and habitually enter woods situated in close proximity of byways for firewood, desecrating them in their wake.</p> <p>Fences are also cut by poachers so livestock unwittingly escape from fields. Bringing new byways into locations of the farm in proximity to livestock and woods will spread these pressures onto new areas of our farming business.</p>	Improving non-motorised access to the World Heritage Site is a key objective of the scheme. The restricted byway along the route of the existing A303 and A360 will be designed to exclude mechanically propelled vehicles through the use of Kent carriage gaps. Locked gates will provide vehicle access to authorised users only. Removing vehicular access rights from A303 will make byways 11 and 12 less accessible to mechanically propelled vehicles. The new restricted byways are all along existing the highway with existing access rights for the public so there will be no increase in the access available.

19 National Trust (REP4-054)

19.1 Oral Submissions		
	Matter Raised	Highways England's Response
The applicants written oral submissions for ISH1, ISH2, ISH3, ISH4, ISH5, ISH6 and ISH7 [REP4-029 - REP4-035] have responded to National Trust's comments received at Deadline 4. Additional points raised as detailed are below.		
19.1.1	<p>Agenda item 3.8</p> <p>Article 14 – protective works to buildings</p> <p>The Trust stated a request for appropriate consultation to ensure that should the need arise for protective works to be carried out at Stonehenge Cottages there would be no impacts of these works on archaeological assets within this area (including the directly adjacent Scheduled Monuments of New King Barrows).</p>	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
19.1.2	<p>Agenda item 3.9</p> <p>Article 15 – Authority to survey and investigate land</p> <p>The Trust stated the level of consultation is a matter of concern with regard to our landholding, due to potential impacts on OUV of any intrusive works. We requested specific provision for appropriate consultation.</p>	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.
19.1.3	<p>Agenda item 3.14</p> <p>Temporary use of land for constructing the development</p> <p>The Trust stated the location of a small construction compound (lay down area) on Trust land (Plot 5-37), which we would seek appropriate consultation about any use.</p>	A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.

19.1.4	<p>Agenda item 4.7 Requirement 8 - Landscaping</p> <p>The Trust stated an amendment to Requirement 8 to clarify all hard landscaping should be included. And further suggested discharge of the landscaping scheme in Requirement 8, requires the inclusion of consultation members of HMAG to ensure consistency from the OEMP through to discharge of requirements.</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>
19.1.5	<p>Agenda item 4.9 The consolidated list of suggested Requirements</p> <p>with reasons proposed by Wiltshire Council as set out in Appendix B of the Local Impact Report (LIR) [REP1-057] relating to: (i) Archaeology and WHS considerations; (ii) local transport; (iii) Public Rights of Way (PROW); (iv) ecology and landscape; (v) built heritage; (vi) public health and protection; and (vii) flood risk and drainage.</p> <p>The Trust stated that in terms of requirements put forward by Wiltshire Council, that those should equally reflect a level of consultation with others (e.g., other members of HMAG), where that is also already committed in the DAMS and OEMP, or where that commitment is currently being sought.</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>
19.1.6	<p>Agenda item 3 – Policy and Guidance</p> <p>That being said, in reference to a remark from an Interested Party about major harm being avoided – we confirmed we shared that view, and went further, considering even a moderate impact on OUV to be unacceptable. We also stated that in applying the balanced approach required by the ICOMOS Guidance we took the view that it was possible for impacts on a particular attribute to be so severe as to render a scheme unacceptable.</p>	<p>Highways England notes the Trust's comments. For further detail, please see response to item 20.4.9 in the Comments on Written Representations [REP3-013] which relates to detailed design in order to avoid or mitigate impacts.</p>

	<p>The Trust stated that mitigation had been put in place within the design of the scheme as presented to ensure there would be no moderate (or greater) adverse impacts on OUV.</p>	
19.1.7	<p>Agenda item 6.v</p> <p>Effect of elements of the proposed development on Cultural heritage assets and their settings - cut and cover tunnel and bored tunnel.</p> <p>The Trust stated that the Tunnel Protection Zone was a point of concern, and that discussions were ongoing with the Applicant. Restrictive covenants to be imposed in the Tunnel Protection Zone are defined only by the dDCO wording “such rights as the Applicant considers necessary” and that subsequent description of them to date is not binding on the Applicant.</p>	<p>Highways England notes the Trust’s comment. A summary response is set out below and for further detail, please see response to item 20.4.110 – 20.4.111 in the Comments on Written Representations [REP3-013]. In essence, restrictions are required above the tunnel in order to secure its protection and structural integrity. The proposed Scheme would provide powers to impose restrictions which may affect future archaeological research above the tunnel route for this reason. The restrictions will vary along the length of the tunnel, depending upon the depth of the tunnel below the surface. The draft of the restriction that is proposed to be imposed would restrict excavations relating to future archaeological research below 0.6m in areas where the tunnel is shallow, and below 1.2m in areas where the tunnel is deeper. The restriction would not prevent excavations from being undertaken below this depth but would require a promoter of future archaeological research to consult with Highways England in such cases in order to determine the extent to which that activity might have the potential to affect the structural integrity of the tunnel. Highways England confirms that this matter is still under discussion and that it is currently seeking to agree the terms of the restrictive covenant with stakeholders, including the National Trust.</p>
19.1.8	<p>Agenda item 6.vii</p> <p>Effect of elements of the proposed development on Cultural heritage assets and their settings – Countess Flyover</p> <p>The Trust stated the proposed flyover at the Countess Farm Complex will impact on the Grade II listed buildings within this complex. The Trust restated our need to secure consultation on design aspects of this element of the scheme</p>	<p>Highways England note the Trust's comments and confirm that the effect of all elements of the Scheme on the Countess Farm Complex has been fully assessed (for instance, please see response to item 20.4.122 in the Comments on Written Representations [REP3-013]).</p> <p>See response to agenda item 3.2 in the oral submission report from ISH1 regarding the draft DCO [REP4-029] which confirms that the revised version of the OEMP contains a number of provisions around consultation in respect of detailed design, including a set of Design Principles developed in discussion with HMAG (which the National Trust is a member of) (see the revised draft OEMP issued at Deadline 4 [REP4-020, Section 4.3 and Table</p>

		4.1]). The implementation of the OEMP is secured by Requirement 4 of Schedule 2 of the draft DCO.
19.1.9	<p>Agenda item 8.i – Design</p> <p>The need for an overall vision in such an important scheme and the need to consider the detailed design of critical aspects at an early stage.</p> <p>The Trust stated that we are encouraged by the recent update to the OEMP and the direction of travel of the document concerning the 'design principles'. However much more work needs to be done and discussions are ongoing.</p> <p>The Trust stated points already heard throughout the day and in previous hearings that the dDCO, OEMP, all the way to what is being discharged needs to have a level of consistent consultation.</p>	<p>The Applicant agrees with the consultation required on the detail design matters and this process has been included within the Outline Environmental Management Plan [REP4-020] section 4:'Development of detailed design in the WHS' which sets out how The Authority will involve key stakeholders in the detailed design of certain key aspects of the Scheme. Please note a revised version of the Outline Environmental Management Plan will be submitted at Deadline 6.</p> <p>See response to item 20.7.5 in the Comments on Written Representations [REP3-013].</p>
19.1.10	<p>Agenda item 5.iii</p> <p>Noise impacts and mitigation measures during the construction and operational periods – Tunnel portals and cuttings leading to them</p> <p>The Trust stated that the intention for noise reflective/absorbative materials for cutting wall surfaces was unclear as set out in the OEMP, and sought further definition.</p>	<p>Chapter 9 of the Environmental Statement [APP-047] included as an enhancement measure the commitment to design the surface finish of the retaining walls at the approaches to the tunnel portals to reduce the reflection of noise. This measure is not included in the reported results and the magnitude of the benefit would be small. However, the revised Outline Environmental Management Plan (OEMP) submitted at Deadline 3 [REP3-006] included the commitment in D-NOI5 that 'The surface finish of the retaining walls at the approaches to the tunnel portals and at Countess flyover (above the earthworks) shall be designed to reduce the reflection of noise.' This commitment remains in the latest version of the OEMP [REP4-020]. It should be noted that the main benefit of the cuttings in noise terms is the barrier effect where mass is the key in terms of effectiveness.</p>
19.1.11	<p>Agenda item 6.i</p> <p>Vibration impacts and mitigation measures during the construction and operational periods – Stonehenge Cottages</p>	<p>The response to item 20.11.1 – 20.11.2 in the Comments on Written Representations [REP3-013] relates to this item. It states that the revised Outline Environmental Management Plan (OEMP) submitted at Deadline 3 [REP3-006] includes the commitment in MW-NOI5 for the contractor to undertake a vibration scoping appraisal of the works to construct the Scheme,</p>

	<p>The Trust stated we are not anticipating impacts of the magnitude that would require re-housing. And that our present understanding is that the Applicant has committed to undertake condition surveys. The Trust stated a request for appropriate consultation to ensure should the need arise for protective works to be carried out at Stonehenge Cottages that there would be no impacts of these works on archaeological assets within this area. It was stated condition surveys are also being discussed at the Countess Farm Complex, with particular regard for ‘staddle stone buildings’</p>	<p>including condition surveys at any building considered to be unusually vulnerable to vibration where predicted vibration at the foundations exceeds 3mm/s PPV. This would apply to the Countess Farm Complex and the ‘staddle stone buildings’ if required. At Stonehenge Cottages, based on their proximity to the tunnelling works and the construction vibration assessment completed for the Environmental Statement in Chapter 9 para 9.9.20 [APP-047], a specific commitment to complete a condition survey is included in the OEMP (MW-NOI5). No protective works (e.g. intrusive surveys) are proposed. Should the need for remedial works arise, these will be undertaken in consultation with the parties holding an interest in the land in question (commitment in MW-NOI5 of the OEMP). Any such works would be limited to the Cottages themselves with no need to affect archaeological assets in the area. Through MW-NOI6 there is a requirement to undertake vibration monitoring at Stonehenge Cottages when the TBM is within 250m of the cottages to allow for a period of monitoring to occur before there is a risk of perceptible vibration. These commitments remain in the latest version of the OEMP [REP4-020].</p> <p>Chapter 9 of the Environmental Statement [APP-047] Para 9.9.56 concludes that operational airborne vibration impacts as a result of the Scheme are not significant and therefore no mitigation measures or monitoring is required.</p> <p>Please note that a revised version of the OEMP will be submitted at Deadline 6.</p>
19.1.12	<p>Agenda item - Additional</p> <p>Additional item – Legal implications of Wiltshire Council proposals for changes to the DCO to restrict motorised vehicles on byways AMES11 and AMES12</p> <p>The Trust stated that this proposal was a matter of significant importance to us, and that we would reserve further comment until the information requested by the ExA for deadline 4 was published.</p>	<p>The Applicant notes the National Trust’s position and submitted its position at Deadline 4a that it does not agree with the proposed changes [REP4a-001].</p>
19.1.13	<p>Agenda item 6.1</p>	<p>As summarised within Agenda Item 6.3 of the Issue Specific Hearing related to biodiversity [REP4-035], botanical monitoring will be carried out to inform appropriate management of the chalk grassland and other habitats within the</p>

Overall effects of the scheme on biodiversity – effectiveness of measures to secure long term management of calcareous grassland etc to maximise gains in biodiversity

The Trust stated that scrub is a matter of particular concern regarding potential damage to archaeological assets and impacts on OUV, so it is important that it is appropriately managed and that ongoing management is secured.

Scheme. This will inform the management actions which may include 'grazing, mowing, control of scrub, and specific habitat management to create or maintain conditions for characteristic species of chalk grassland and other habitats' as stated within MW-BIO13 of the OEMP [REP4-020]. Compliance with the OEMP is secured by requirement 4 of Schedule 2 of the draft DCO. It should also be noted that under item MW-LAN1 of the OEMP, a Landscape and Ecology Management Plan (LEMP) must be prepared, which will form the basis (amongst other things) for the Handover Environmental Management Plan under item MW-G11 of the OEMP.

Please note that a revised version of the OEMP will be submitted at Deadline 6.

20 Robin Parsons (REP4-072)

20.1	Oral Submissions	
	Matter Raised	Highways England's Response
<p>The applicants written oral submissions for ISH6 [REP4-034] have responded to Robin Parson's comments received at Deadline 4. Additional points raised as detailed are below.</p>		
20.1.1	<p>This bridge needs to be designed to allow the Agricultural vehicles to cross together with a public right of way which needs to be segregated from the private means of access so concerns were raised about the width the bridge needed to be as very little of that width would be for green bridge purposes so to call it a green bridge is a misnomer and inaccurate by Highways England.</p>	<p>As stated in the Applicants response to item 29.2.1 and 29.2.2 in the Comments on Written Representations [REP3-013] and its summary of submissions at ISH 6 [REP4-034], the green bridges on the Scheme perform a number of functions, including: providing agricultural access, linking and maintaining public rights of way; and providing ecological connectivity. The locations of the green bridges strike a balance that meets the needs of these functions.</p> <p>The proposed width of the restricted byway and private means of access over Green Bridge No.1 is 4m, meaning that the rest of the bridge is designed to address ecological and landscape considerations. One exception of this is located at the proposed tie in with the existing A303, which due to the existing woodland is reduced to 3m.</p>
20.1.2	<p>By all means have a green bridge but do not add other users to it and by designating it as a green bridge is an underhand way of achieving access for the Guinness family to land that can still be accessed by SLAN3 or if not by using the Cherry Lodge Access.</p>	<p>As stated in the Applicants response to item 29.2.9 in the Comments on Written Representations [REP3-013], the ecological impact assessment, reported in ES Chapter 8, Biodiversity [APP-046], has concluded that the provision of greater ecological connectivity will result in a beneficial effect for biodiversity. This is in accordance with the recent project by Natural England 'Porton to the Plains' which emphasises the importance of connectivity between existing sites of value for nature conservation and especially connectivity of areas of chalk grassland.</p>

		<p>As part of the proposed Scheme the existing Guinness access points off the A303 will close. Therefore, to provide an equivalent access for westbound and eastbound movements, new access points off the two restricted byways and private means of access routes are proposed.</p> <p>See also response above to 20.1.1.</p>
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21 National Farmers Union (REP4-052 and REP4-053)

21.1	Oral Submissions	
	Matter Raised	Highways England's Response
21.1.1	<p>If it can be proven that a new cycle way is necessary in to Winterbourne Stoke then this should be created along the existing A303 which will be maintained as a local access route. It is not necessary to take agricultural land out of production to create a cycle way.</p>	<p>This refers to the proposed bridleway between Winterbourne Stoke and Longbarrow Junction. As stated in the response to agenda item 4.6 in the oral submission report from ISH4 regarding traffic and transport [REP4-034], the chosen route is the most appropriate route at this location given the environmental and space constraints. The points made at ISH4 regarding the need for the bridleway and the alternative routes considered are summarised as:</p> <ul style="list-style-type: none"> • The bridleway is proposed to facilitate an NMU link between the existing north-south byway route at Yarnbury Castle, through Winterbourne Stoke to the WHS and Amesbury. This strategy is supported by Wiltshire Council. • An alternative bridleway alignment to the south of the existing A303 was considered but would require an area of some woodland and scrub to be removed and would involve additional earthworks. • There is insufficient width between the existing hedge and the edge of carriageway to accommodate a shared use route suitable for pedestrians, cyclists and equestrians.
21.1.2	<p>Omission of a link between AMES 11 and AMES 12. The NFU stated that if a decision was made by the Examiners that a link should be kept between AMES 11 and AMES 12 for the Trail Riders then it should be provided along the existing A303 with agricultural access only. No land should be taken out of agricultural production to create a new link.</p>	<p>As the Applicant has stated in its Deadline 4a submission and throughout the Examination, it does not propose a link between AMES11 and AMES12. It understands that TRF's proposal would involve use of the existing line of the A303 so no new agricultural land would be required.</p>

21.1.3	<p>There is concern from landowners that the new rights of way to be created and the existing A303 being downgraded will lead to an increase in improper an illegal use of the byways. Unauthorised fly tipping, hare coursing, parking up, camping and motorhomes parking up is already an issue. Rural Crime is an ever growing issue and so all the new rights of way to be created must be considered carefully and whose responsibility it will be to control the PRowWs.</p>	<p>Wiltshire Council will be responsible for control of the Public Rights of Way. Part 4 of the OEMP indicates how PRowWs will be designed and item MW-COM3 requires that liaison is undertaken with landowners in respect of fencing.</p>
21.1.4	<p>Article 2: Interpretation: Construction Compounds were discussed and the NFU raised the issue that landowners were concerned about the size and location of compound sites and the works that will be undertaken in each compound. Under Schedule 7 of the draft DCO areas to be taken for compound sites, the purpose set out states ‘to provide temporary storage, lay down areas and working space’. This is too vague and the works which are to take place in each compound should be set out under this schedule. It is known that the waste soil arisings will be treated in one of the compounds. This needs to be stated clearly in the schedule within the draft DCO. Reference is made to the location of slurry treatment plant and batching plant in the OEMP on page 50 ref: MW-CH4. It is this detail that the NFU would like to see detailed in the schedule in the DCO for each compound.</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>
21.1.5	<p>Article 15: Authority to Survey and Investigate Land: The NFU has asked that when notices are served that Highways England within the notice state the following:</p> <ul style="list-style-type: none"> • Who will be taking entry • The date of entry and for how long • The types of survey to be carried out • The type of equipment if any will be used. 	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>

	<p>This would then follow details which have to be provided under the Housing and Planning Act 2016 section 174 when surveys are carried out.</p>	
<p>21.1.6</p>	<p>Article 29: Temporary Possession: the NFU raised that it would like to see Highways England giving 3 months’ notice rather than just 14 days as stated at 29.(2) to Landowners and occupiers before entry is taken. This would then follow what has been set out in the Neighbourhood Planning Act 2017 Part 2 Section 20. This requires acquiring authorities to give at least three months notice and it also requires the acquiring authority to specify the period for which temporary possession is going to be taken.</p> <p>The NFU believes strongly that all DCOs going forward should fall in line with these changes to compulsory purchase powers under the Neighbourhood Planning Act 2017. Taking land for temporary possession and only giving 14 days notice has become an issue on other infrastructure schemes especially HS2. HS2 already gives 28 days notice before temporary possession can be taken and this lead in time has caused farmers problems. Therefore the NFU has petitioned for three month notices to be included in the Hybrid Bill for Phase 2a. In response to this the Select Committee for Phase 2a in their Second Special Report instructed HS2 that where possession may be for longer than a week farmers should be given advance warning of the quarter year in which the temporary possession is likely to be taken and notice should be not less than three months prior to that quarter. HS2 following this offered an Assurance to NFU on 18th April 2019 and it states “the Nominated Undertaker will provide at least 3 months’ written notice in advance of the date of entry to the landowner and any occupier in respect of the relevant land to be occupied under temporary possession powers (“the Notice”)”.</p> <p>Further HS2 have also stated that they will give a timeline of how long temporary possession is going to be taken for.</p> <p>The NFU therefore ask the Examining Authority to change the 14 days notice to three months notice at Article 29 para (2). The NFU believes very strongly that three months notice is essential for</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>

	temporary land take on large infrastructure schemes like Amesbury to Berwick Down.	
21.1.7	<p>Schedule 2: Requirement 4: Outline Environmental Management Plan (OEMP): The NFU has requested to Highways England that the OEMP must include details covering the following:</p> <ul style="list-style-type: none"> • The role of Agricultural Liaison Officer • How private water supplies will be secured • How agricultural field drainage will be dealt with during and after construction <p>How soils will be reinstated and aftercare implemented.</p>	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.
21.1.8	<p>Agricultural Liaison Officer: Under ‘2 Project Team Roles and Responsibilities’ in the OEMP an Agricultural Liaison Officer (ALO) has now been included which sets out the responsibilities the ALO will undertake but it does not set out when the ALO will be appointed, how long for, the qualifications of the ALO, contact details. The wording the NFU would like to see setting this out is highlighted below:</p> <ol style="list-style-type: none"> 1. <i>The Agricultural Liaison Officer (ALO) will be appointed by the Applicant prior to the commencement of pre-construction activities and will be the prime contact for ongoing engagement about practical matters with landowners, occupiers and their agents before and during the construction process. There may be more than one ALO if required.</i> 2. <i>The ALO will have relevant experience of working with landowners and agricultural businesses and will have knowledge of the compulsory acquisition process (if required) and working on a linear infrastructure project.</i> 3. <i>The ALO (or their company) will be contactable from 7am to 7pm during the construction phase to landowners, agents</i> 	A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.

	<p><i>and occupiers and will provide 24-hour team or company contact details for use in the event of emergency.</i></p> <p>4. <i>Post-construction the ALO will remain in place for up to one year in order to manage remediation issues.</i></p> <p>5. <i>After that year the Applicant will ensure that ongoing contact details are provided in order for landowners and occupiers to seek consent, if required, in respect of restrictive covenants for <u>the lifetime of the project or to highlight any defects.</u> <u>Information in relation to the process of management of restrictive covenants will be issued to landowners and occupiers upon any change in the person/s responsible for the process on behalf of the Applicant or the OFTO.</u></i></p> <p>In the OEMP 'Liaison with Landowners' has also been set out at Ref:MW-COM3 on page 77 and this should be included under the role responsibilities of the ALO with the main contractors.</p>	
21.1.9	<p>Private Water Supplies: Wording to cover how private water supplies should be dealt with has been taken from the Statement of Common Ground with the NFU. But the following words "at the contractor's option" have been included in two places. It is stated that water has to be 'provided or procured or to meet the reasonable cost'. This cannot be at the contractor's option it should only be at the landowners option. The wording 'at the contractors option' must be deleted. This is at Ref:MW-COM6 in the OEMP page 77</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
21.1.10	<p>Due to the nature of the complicated private water supply systems to farms where water may be affected, the main farms being Manor Farm, Boreland Farm, Springbottom Farm and Druids Lodge. The NFU believes strongly that a farm pack needs to be set up for these farms pre construction and one of the main areas to be covered needs to be private water supplies. The details to be include needs to be as follows</p> <ul style="list-style-type: none"> • Details and location of each borehole 	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

	<ul style="list-style-type: none"> • Details recorded of results from water monitoring carried out by HE • How an emergency will be reported if water is contaminated • The procedure for getting water to a farm and how it will be distributed to animals and residential properties if water is affected on a temporary basis • The procedure for getting a new supply of water whether from a borehole, mains supply or combination of both to a farm if the water from the boreholes is contaminated on a permanent basis. • A guarantee given that if a new supply of water is provided from the mains that it will be up to pressure to meet demands and how this would be met. <p>The above needs to be included in the OEMP so that it is binding on HE to carry this out at pre- construction stage.</p>	
21.1.11	<p>Field Drainage: HE has now inserted a section to cover agricultural field drainage in the OEMP at ref: MW- COM7 on page 78. The NFU is in agreement with the wording but it does not provide enough clarity on how field drainage will be reinstated during and after construction.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
21.1.12	<p>Outline Soil Management Plan: NFU would like to see an outline soil management plan being drafted which includes details of the general principles of how soil will be treated and aftercare carried out. The detail included in the OEMP at MW-COM4 and MW-COM 5 is very brief and does not give enough assurance to landowners and occupiers. We would like further detail to be agreed in an outline soil plan which is linked to the OEMP so that it is binding under the DCO.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
21.1.13	<p>The NFU would like to state how important it is that a pre- construction record of condition and soil survey is undertaken to form a soil report/soil statement. This soil report/statement can then be used to</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated</p>

	<p>inform what aftercare requirements are needed to bring the soil back into agricultural use and to bring the soil back to its original condition. We would also expect annual monitoring of physical soil characteristics and soil nutrient levels to be carried out. The NFU would expect to see aftercare carried out over a five year term.</p> <p>The NFU would like to see the wording at Appendix B in regard to the pre-construction survey of soils. The detail we have requested to be included in a record of condition has now been included in the OEMP at ref: MW- COM 8 but this will need to be linked to the soil survey and form part of the soil statement.</p>	<p>version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
21.1.14	<p>Geology, Ground Conditions and Groundwater Flows:</p> <p>The NFU has covered the detail it expects to see in regard to abstraction and private water supplies in a written submission following the hearing on the draft DCO on the 4th June 2019. It is essential that HE start monitoring all private boreholes that may be affected by the scheme (if they have not done so already) and provide the results on a regular basis to the relevant landowner. This needs to be stated in the OEMP.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
21.1.15	<p>Geology, Ground Conditions and Groundwater Flows:</p> <p>Highways England when questioned on pumping tests stated that they had carried out three pumping test. This is not strictly true as HE have carried out pumping test on land at West Amesbury Farm at Stonehenge Bottom. Two pumping test from two different boreholes have been carried out which are in very close proximity to each other at Stonehenge Bottom and a further pump test was carried out at King Barrow field. The pumping tests were carried out on June/July2018. The NFU believe that further pumping tests are required but Highways England is failing to engage with the landowner and reach an agreement to pump the water over the land.</p>	<p>AS-016 describes the pumping tests undertaken in 2018, which supplement those done in November 2002 and September 2004.</p> <p>In 2018 a pumping test comprising step test, constant rate test, and recovery was conducted in borehole W623 from 7/6 to 22/6, in borehole W601 between 3/7 and 23/7, in borehole W617 between 26/7 and 6/8.</p> <p>Each test measured groundwater level responses at five to seven additional observation wells in an area 100s of metres around the pumped well. The observation wells are in the vicinity of the pumping test well while the pumped well locations are a minimum of 400m apart.</p> <p>The locations were on Coneybury Hill, Stonehenge Down, and Stonehenge Bottom respectively representing the hydrogeological domains across the chalk block where the tunnel would pass.</p> <p>During the ongoing ground investigations to be undertaken by Highways England and the Main Contractor, additional testing at different times of the</p>

		<p>year will take place at different locations to provide additional data for the final design. There is sufficient pumping test data for the purposes of the environmental statement and examination and determination of the application.</p> <p>Land access arrangements will be made or powers provided for access in the dDCO for future ground investigations and pumping tests which would be carried out for detailed design purposes.</p>
21.1.16	<p>Flood Risk and Drainage:</p> <p>The NFU is concerned that HE are not providing enough information on how de watering of the working strip and the compound sites will be carried out including discharge of surface water. If any discharge of water is going to be connected into any existing drainage /culverts details must be made clear and HE must be able to guarantee that no flooding of agricultural land will take place due to the discharge of water. Further details must be provided to landowners and details of how it will be dealt with must be included in the OEMP.</p>	<p>See response to item 25.1.9 – 25.1.10 in the Comments on Written Representations [REP3-013].</p> <p>The Applicant's current proposal assumes the use of a closed-face TBM for the main tunnel construction as this is considered to be the best option for tunnelling under these conditions as it provides greater control on settlement and removes the need for dewatering. It will be the responsibility of the contractor to ensure risks are assessed and mitigated in their safe systems of work during construction to the agreed performance standards and assessment.</p> <p>As noted in paragraph 2.4.34 of Chapter 2 of the Environmental Statement [APP-040], the highly variable nature of the groundwater levels means that 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 also for some cross-passages for mechanical and electrical services at Stonehenge Bottom when groundwater levels are exceptionally high.</p> <p>If required, the extent and duration of groundwater control would be minimised. Should the final design or construction methods require abstraction of groundwater or surface water, the Statement of Common Ground with the Environment Agency [REP2-012] states under Matters Agreed that the assessment of risk and identification of any required mitigation measures will be achieved through the Outline Environmental Management Plan (OEMP) [REP4-002] (MW-WAT8) and whichever regulatory regime is ultimately agreed.</p>

21.1.17

Waste and Materials Management:

As stated at the hearing by the NFU it is not acceptable for HE to state that disposal off site of 500,000m³ would have a significant adverse effect with regard to noise, air quality and traffic on the local communities when this impact would only be on a temporary basis. Whereas dumping the arisings on 135 acres of arable land has a permanent impact and a very significant impact on a farming business. As stated above the impact on the farming business has not been addressed at all in the report at Appendix 12.1. It is essential that this impact on the farming business is carried out before any decision is made to approve this DCO application. It is not possible to state that the effect on losing the agricultural land at East of Parsonage Down is only minor adverse.

The NFU at the hearing raised the point that HS2 under Phase 1 had highlighted in its final construction plans that an area of 140 acres on Shepherds Furze Farm, Calvert was to be taken for sustainable placement of waste spoil. The NFU petitioned that there was a landfill site near Calvert which could take the spoil. After petitioning HS2 accepted that it was possible for the spoil waste to be taken to the landfill site. The 140 acres will now remain in agricultural production.

See response to item 25.7 in the Comments on Written Representations [REP3-013] which considers the impact on Manor Farm, including the extent of land taken required for arisings.

The assessment of impacts in the TAMS considered the significance of the impact and balanced the options accordingly.

The impact on the farming businesses is addressed in Chapter 13 of the ES and reported in Table 13.23 which identifies a permanent moderate adverse effect on Manor Farm, Stapleford as a result of the Scheme due to the proportion of land required permanently for the proposed scheme as a whole. Paragraph 13.9.17 of the ES indicates that this effect is significant for the farm holding. The minor adverse effect noted here referred to the area of land take specifically for the purposes of arisings deposition, being 8.5% of the holding.

In the HS2 example referenced, the site in question at Shepherds Furze Farm is very close to an existing permitted landfill site at Calvert (approximately 2km away). However, there are no such permitted landfill sites in close proximity to the current Scheme and hence the Applicant proposes depositing the tunnel arisings within the Scheme boundary, for the reasons set out in the Tunnel Arisings Management Strategy [APP-285].

22 Lois Lloyd (REP4-067)

22.1	Oral Submissions	
	Matter Raised	Highways England's Response
The Applicant's written oral submission for ISH5 [REP4-033] responds to Lois Lloyd comments received at Deadline 4.		

23 ICOMOS-UK (REP4-051 and REP4-089)

23.1	Oral Submissions	
	Matter Raised	Highways England's Response
The Applicant's written oral submissions for ISH2, ISH3, ISH4, ISH5 and IS6 [REP4-030 to REP4-034] respond to ICOMOS-UK comments received at Deadline 4.		
<p><i>Clarification of the ICOMOS Guidance on Heritage Impact Assessment for Cultural World Heritage properties in relation to harm and benefits</i></p> <ol style="list-style-type: none"> 1. The Guidance sets out a methodology for assessing impact of development on the attributes of Outstanding Universal Value (OUV) both individually and collectively. The main components are as follows: <ul style="list-style-type: none"> • Understanding OUV and the attributes that convey OUV • Identifying the attributes of OUV that are impacted • Defining how these particular attributes contribute to OUV • Degree of direct and indirect impact on individual attributes • Overall the cumulative impact on all attributes and thus on OUV 2. The primary aim of a Heritage Impact Assessment (HIA) for a proposed development is to address where there could be harm to attributes of OUV, and thus to OUV, and how that harm could be avoided. Every reasonable effort should be made to avoid, eliminate or minimise adverse impacts on attributes that convey OUV' (paragraph 2-1-5). That must be the starting point. 3. The Guidance highlights the need to assess benefits that may derive from development. The Guidance goes on to state that it is important to 	<p>See the Applicant's written summary of its oral submissions from ISH 2 regarding Cultural Heritage [REP4-030] in relation to agenda items 3 and 4, which responds to the points which were made by ICOMOS UK at the hearing.</p> <p>In response to the Historic England letter submitted to the Examination by ICOMOS UK [REP4-089] relating to the application for the 'Tulip' Tower on land adjacent to 20 Bury Street, London EC3A 5AX, the Applicant confirms that we agree with Historic England's response to the issue. This is summarised in Agenda item 3 vi the Applicant's written summary of its oral submissions from ISH 2 regarding Cultural Heritage [REP4-030] with regards to exercising the principles of balancing harm against public benefits as Historic England confirmed at the hearing.</p>	

<p>consider who receives benefits and to acknowledge the benefit of those projects that support conservation. It adds that 'The conservation of the property should be counted within the benefits of a project, so that projects that are supportive of conservation can be weighted more than those that do not.' (Paragraph 5.13).</p> <ol style="list-style-type: none"> 4. Stress is placed on benefits that relate to conservation and to local communities as 'Often the property itself and the associated communities do not receive the benefits flowing from development' (paragraph 5-13). 5. There is no suggestion in the Guidance that benefits to for instance developers or motorists would be seen as having high value, nor, more importantly, that high levels of benefits could outweigh damage to attributes of OUV. 6. Paragraph 2-1.1 states that: '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'. 7. This balance is certainly crucial in relation to WHS where there is an obligation to sustain OUV and avoid harm to attributes of OUV. Balancing public benefit against harm must be undertaken in the context of the underlying obligation to sustain OUV and thus avoid harm to its attributes. 8. The Guidance text considers impact on other assets besides attributes of OUV. Whereas it may be acceptable to show that benefits can outweigh less than substantial harm for individual assets not related to attributes of OUV, (under the NPPF1) it is not acceptable when dealing with attributes of OUV. OUV is fixed at the time of inscription and is non- negotiable. 9. This is a logical position as, if attributes of OUV could be harmed or destroyed to deliver public benefits, many World Heritage properties might by now have succumbed to major infrastructural projects of one 	
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sort of another if taking slices out of a property could be offset by benefits elsewhere.

10. This overall position has been accepted by Historic England in its response to the application for the 'Tulip' Tower on land adjacent to 20 Bury Street, London EC3A 5AX. Their letter of 6 December 2019, ref P00996770, is attached.

11. 11. In this letter they set out that NPPF guidance requires decision makers to determine whether harm is substantial, or less than substantial. If the harm is deemed to be less than substantial, paragraph 196 of the NPPF requires that harm be weighted against the public benefits of the proposals'. It also lists other London specific guidance for WHSs. It then goes on to say that 'notwithstanding the policy and guidance framework described, it should be noted that the World Heritage Committee and its cultural adviser ICOMOS (the International body based in Paris) interpret the World Heritage Convention in a way that places great weight on the need to avoid any harm to OUV. Only if it is clear that proposed development is essential and cannot occur without harm to OUV does ICOMOS concede in its Guidance on Heritage Impact Assessment that balancing harm against benefit is acceptable'.

This is a clear statement of Historic England's views, and a clear statement of the meaning of the ICOMOS Guidance on HIAs.

24 Graham Parker (REP4-070)

24.1	Oral Submissions	
	Matter Raised	Highways England's Response
24.1.1	<p>In sub paragraph 'b' I state that the A303 Realignment Route will 'Provide Substantial Savings', and whilst the figures I used at the time are very different to today's figures, there is no doubt whatsoever that the cost savings available by carrying out the 'Realignment Plan' could help fund the other areas on the A303 going West that need additional work to be carried out.</p>	<p>The option identification and selection process is explained in Highways England's response to Written Question AL.1.4 [REP2-024] and was explained further in response to agenda item 7.1 at the ISH on Traffic and Transportation as is set out in more detail in the Written Summary of Oral Submissions [REP4-034]. The option identification and selection process included assessment of the financial case of the corridors and route options under review at each sift. Detail can be found in the Technical Appraisal Report [REP1-031].</p> <p>The consideration given to the route presented by Colonel Graham Parker in his Deadline 3 submission [REP3-083] was explained by Mr. McQuade in response to agenda item 7.2 of ISH on Traffic and Transportation and is set out in more detail in the Written Summary of Oral Submissions [REP4-034].</p>
24.1.2	<p>May I show my full support for the idea given by' UNESCO that the World Heritage Site should be left untouched, and a suitable and effective bypass must be considered which will remove so many already identified problems as we have heard about at the City Hall. The A303 Tunnel road distance is 12 miles from east of Amesbury to the current A303 dual carriageway west of Winterbourne Stoke, and the full distance of the A303 Realignment is 15 miles. At the traffic speed of one mile per minute the extra distance for traffic on the Realignment road would take an extra three minutes as opposed to moving through a tunnel.</p>	<p>Journey time savings for corridor F were included in the Economic case assessment as reported in the Technical Appraisal Report [REP1-031]:</p> <p>Route F10 was identified as the best performing route in corridor F. The reasons for rejection of this route are provided in Highways England's response to Written Questions AL.1.12 and AL.1.13 [REP2-024] which explain the relative merits of corridors D and F and conclude</p> <p><i>"Consequently, while acknowledging the benefits to the WHS of option F010, the TAR concluded [REP1-31 para 22.1.5] that, on balance, Route Options D061 and D062 would deliver a better fit against the relevant local and national planning, transport and economic policy objectives, than Route Option F010, and thus they would achieve the scheme objectives more effectively."</i></p>

24.1.3	<p>There is real concern within the public that if the Tunnel system was to be produced, then there is the real possibility that the Site may well have its 'World Heritage Site' name removed from the International List by UNESCO, it would be a real disaster for our future generations and the United Kingdom. I am today requesting our MP, John Glen, to look into the Government past documents to see if they discussed and withdrew their Signature from the 'June 1988 World Heritage Convention,' in order not to be restricted in their aim to produce a better flow of traffic for the East-West Road Route within the World Heritage Site area.</p>	<p>See Highways England response to Written Question SE.1.7 [REP2-035, page 15-6] which considers the risk to the inscription of the site as a World Heritage property. In summary, one of the fundamental objectives of the Scheme as stated in the Case for then Scheme [APP-294] is to help conserve and enhance the World Heritage Site. The Scheme is assessed in the Heritage Impact Assessment [APP-195] to have a Slight Beneficial effect on the Outstanding Universal Value of the WHS as a whole. This takes into account that of the seven attributes of OUV for the WHS, whilst the Scheme will have a slight adverse effect on two of those attributes, it will have a beneficial effect on the remaining five (being a slight beneficial effect on three of the attributes, a large beneficial effect on one, and a very large beneficial effect on one). This conclusion also takes into account that the Scheme will have a slight beneficial effect on the authenticity and integrity of the WHS. Overall the OUV of the WHS would be sustained. Please see the response to the Written Question (SE.1.7) for more detail relating to the individual inscription criteria of the WHS.</p> <p>The assessment of the Scheme has been carried out fully in accordance with the relevant national and international policy and statutory requirements, including the preparation of the Heritage Impact Assessment.</p>
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25 Frank Sommers (REP4-076)

25.1	Oral Submissions	
	Matter Raised	Highways England's Response
<p>The Applicant's written oral submissions for OFH [REP3-012] respond to Franks Sommers' comments received at Deadline 4. Additional points raised are detailed below.</p>		
25.1.1	<p>I am not in favour of the proposed short tunnel as it could materially damage the landscape. I acknowledge that something else does need to be done to improve the traffic and I empathise with locals who have been effected by A303 congestion.</p>	<p>Highways England is pleased to note Mr Sommers' acknowledgement that something needs to be done to improve the traffic and congestion on the A303.</p> <p>The option identification and selection process carried out by Highways England included options for a longer tunnel, detail of which can be found in the response to Written Question AL.1.29 [REP2-024].</p>
25.1.2	<p>Concerning energy lines or flows of earth energy, the 'theoretical' nature of something does not exclude its existence or relevance unless it is disproven.</p>	<p>Highways England respectfully notes this comment and would refer Mr Sommers to paragraph 5.5.2.3 of REP3-012, written summaries of oral submissions of the Open Floor Hearings which states that Highways England's surveys have not identified any such energy line or ley lines in the landscape. Beyond that reference, Highways England has no further comment to make regarding scientific method, ley lines/earth energies and dowsing.</p>
25.1.3	<p>I'm not an expert, but my basic understanding of Geophysical survey equipment is that it is designed to detect anomalies straight beneath the equipment and not, flowing, or at any great depth. In any event, whilst dowsing can detect anomalies discoverable by geophysical equipment the reverse not always being the case proves little except that dowsing has a greater range of phenomena it can detect.</p>	<p>Highways England respectfully notes Mr Sommers comments however has no further response to make, beyond noting that the Applicant's use of conventional geophysical instrumentation in order to detect utilities and buried archaeological remains is in accordance with industry practice and the approach has been approved by HMAG and the Scientific Committee.</p>

25.1.4	<p>If there do exist flows of 'energy' into Stonehenge from the south, the inability of geophysical ground radar or geomagnetic sensors to see it does not have any significance. I cannot see dark matter, it is theoretical, yet it is apparently expanding our universe.</p> <p>A physical barrier in the landscape such as a tunnel might have an adverse effect upon energy flows. More research is required before making drastic irreversible intervention to the south of Stonehenge.</p>	<p>Highways England respectfully notes Mr Sommers comments, however has no further response to make.</p>
25.1.5	<p>My main point was not addressed by Highways England, and that is about the impact of any tunnel works on the springs at Blick Mead.</p> <p>Highways England have so far failed to illuminate to my satisfaction how and where the water that supplies these springs originate and what the pathways through the underlying strata are. This is important because the lack of that science leaves us at significant risk of obstructing the water supply to Blickmead and hence destroying the tangible and intangible value of the place to archaeology, local community and the quest of the Druids to understand our earliest possible roots. It is perhaps ironic that they seem to be asking us to accept this risk based upon nothing stronger than a theory.</p>	<p>The tiered assessment in Annex 3 of the Groundwater Risk Assessment [APP-282] describes the conceptual understanding of the area with particular attention to the origin of waters that maintain the archaeology in a saturated state for much of the year.</p> <p>This includes the chalk groundwater catchment to the springs coming from the north, as well as groundwater interactions between the chalk aquifer, superficial aquifers and the River Avon. It also shows that seasonally the deposits hosting the archaeology partially dry out.</p> <p>There is not a single source of the spring; it is where the regional groundwater level intercepts ground surface when groundwater levels rise.</p> <p>Chalk groundwater levels and road drainage are the components of the water balance at Blick Mead that may be affected by the scheme. The risk assessment found that Chalk groundwater levels are not predicted to change in the area of Blick Mead and the drainage layout for the carriageway will not change the volume of flow that discharges near Blick Mead (whilst discharge water quality will improve).</p>

26 English Heritage Trust (REP4-048)

26.1	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
26.1.1	<p>Feedback on ES Appendix 2.2 OEMP Deadline 3 Update – 31 May 2019</p> <p>EHT welcomes the progress made in the latest version of the OEMP to provide a mechanism for engagement and consultation beyond the DCO process. We have given HE feedback in regards to our concerns related to the effectiveness of the consultation process. We have also flagged we are: seeking to be consulted in the development of the CEMP and a number of the plans, strategies and policies that are appended to this document; seeking recognition in the OEMP that there are ancient artefacts on display at the Stonehenge Visitor Centre which will need to be monitored carefully for impacts of vibration from nearby construction; and require more information about what the monitoring of the Stonehenge monument entails to assess the heritage and operational impacts of this. EHT is also working through HMAG to support the development of design principles and commitments.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
26.1.2	<p>Matters arising from Highways England response to EHT Written Rep</p> <p>At paragraph 28.5 HE has failed to demonstrate that there is a compelling case in the public interest for compulsory acquisition of part of the Visitor Centre site, including the loss of overspill car parking, in comparison to alternative options for the A360 PROW. HE has failed to carry out an assessment as to whether there is a compelling case in the public interest and the best alternative, rather the route and site selection process is based on a failure to properly carry out pre-application consultation and a reluctance to change the</p>	<p>The point was advanced orally by English Heritage Trust (EHT) at the Compulsory Acquisition hearing held on 9 and 10 July 2019 and the Applicant's response, as given in that hearing, is reiterated in the Applicant's written summary of oral submissions made at that hearing, under agenda item 8.2, the written summary being submitted at Deadline 5.</p> <p>In summary, the Applicant maintains that the requirements of section 122 of PA2008 are satisfied in respect of the compulsory acquisition of the land required for the new public right of way. There is a clear public benefit in providing a non-motorised user route to provide north/south connectivity to</p>

<p>submitted draft DCO because EHT’s “alternative route is on land in third party ownership and outside Order limits” and “could only be delivered by agreement outside of the DCO, or alternatively within the Order but subject to the established procedures for changes to development consent orders during an examination”. EHT in its representation of 10 January 2019 had flagged this issue long ago that “The fact that EH’s suggested alternative route mentioned above is outside the land identified for compulsory acquisition does not constitute compelling reason in the public interest to compulsorily acquire the land and interests in question, given the impacts” and, therefore, the need to add land into the DCO compulsory acquisition carries no weight (or negligible weight if any) in the assessment of the best route, consequentially the best land for compulsory acquisition and whether there is a compelling case in the public interest for compulsory acquisition of the currently selected land across part of the Visitor Centre site.</p> <p>The compulsory acquisition of part of EHT’s Visitor Centre site is outside of the powers of the legislation in S122 of the Planning Act 2008 and cannot lawfully be authorised under the DCO because the Secretary of State cannot be satisfied on the evidence submitted that there is a compelling case in the public interest for that land to be compulsorily acquired. Section 122 states:</p> <p>1. An order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that the conditions in subsections and (3) are met.</p> <p>...</p> <p>3. The condition is that there is a compelling case in the public interest for the land to be acquired compulsorily.</p>	<p>the PRoW network that would be improved by the Applicant’s proposed new restricted byway along the route of the existing A303 through the WHS. The arguments advanced by EHT, with the aim of establishing that the Applicant has not considered reasonable alternatives to compulsory acquisition, in fact amount to a challenge to the planning merits of the proposal. In essence, EHT’s objection relies heavily on the assumption that the alternative to acquiring land in which EHT has an interest would be to instead acquire land from another party. This would not be an alternative to compulsory acquisition.</p> <p>On the technical and planning concerns expressed by EHT in its appendix to its written representation [REP2-092], the Applicant has undertaken to supply the examination with its detailed response to this document at Deadline 6.</p> <p>The Applicant continues to seek an alternative to the DCO proposal of a restricted byway route to minimise the area of land required from the Visitor Centre site. However, it appears likely that any alternative route would require additional land (beyond the Order limits as currently drafted) and therefore, to avoid triggering the procedures in the Infrastructure Planning (Compulsory Acquisition) Regulations 2010, the Applicant would require the consent of each person with an interest in the additional land. The Applicant is currently engaging with relevant landowners with the aim of securing the necessary consents.</p>
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26.2	Clarification of points raised in ES Chapter 6.1 Heritage Impact Assessment (HIA)	
	Matter Raised	Highways England's Response
26.2.1	5.2 Section 6.12.43 of the HIA references English Heritage's Phase 1 Visitor Survey. English Heritage is not the owner of this survey and our name should not appear here. This was raised at an Issue Specific Hearing.	EHT's comment is noted.
26.2.2	5.4 Section 6.12.19, 6.12.48 and 6.12.51 misrepresents the current and future capacity of the EHT Stonehenge visitor experience. To clarify, EHT operates a car park management plan at peak times to ensure we can accommodate visitors. Our ticketing allocation system encourages pre-booking but is flexible enough to accommodate spontaneous visits for those who decide to visit on the day. The environmental sensitivity of the WHS as well as the capacity of the existing amenities are considerations in future visitor growth. However, it is incorrect to assert that Stonehenge is 'full' throughout peak season. Current and future on-site capacity is driven by a number of variables including: season, month, day of the week and time of the day.	EHT's comment is noted [but Highways England maintains its position]. The HIA is not reliant on these aspects in coming to its conclusions with regard to the impacts of the Scheme on the Integrity, Authenticity and OUV of the WHS.

27 Mr C. A. Rowland (REP4-075)

27.1	Oral Submission	
	Matter Raised	Highways England's Response
27.1.1	<p>The Examiners were reminded that Mr.Rowland Grade 2 listed home was within 400m of the River Avon and that on the opposite bank would be situated the contractors compound that would be used for managing the construction of the proposal. It was suggested that we should be consulted about the location of any floodlights that may be required to reduce light intrusion and the peaceful occupation of Ratfyn Farmhouse during construction.</p>	<p>Section PW-G6 and MW-G29 of the Outline Environmental Management Plan (OEMP) [REP4-020] requires the preliminary works contractor to define within the CEMP the proposed approach to site lighting around construction compounds and elsewhere along the route alignment, giving consideration to the WHS context and other environmental constraints.</p> <p>OEMP PW-G6 and MW-G29 also require lighting to be designed, positioned and directed so as not to unnecessarily intrude on adjacent buildings and other land uses to prevent unnecessary disturbance, interference with local residents, or passing motorists on nearby roads.</p> <p>OEMP MW-G31 requires that the main works contractor shall take reasonable steps to engage with nearby residents.</p>

28 Great Bustard Group (REP4-050)

28.1	Oral Submissions	
	Matter Raised	Highways England's Response
28.1.1	I can endorse the comments made by M & R Hosier & Stonehenge Alliance in particular with regard to the proposed open public access and subsequent human disturbance and enhanced disturbance during construction.	See responses to items 9.7.21, 9.7.22 and 9.7.23 in the Comments received at Deadline 3 [REP4-036].

30 Natural England (REP4-082)

30.1	Additional Submissions	
	Matter Raised	Highways England's Response
30.1.1	<p>As great bustard are clearly very rare, it would be entirely legitimate to argue that it is of very high importance compared to other species. Effects on individuals clearly have capacity to impact the entire GB population. The degree to which such an argument is valid on whether or not the latest evidence shows great bustards are self-sustaining (either currently or there is potential to become self-sustaining at some point in the future) as a population. We are not aware of this evidence.</p>	<p>Noted and agreed.</p>

31 Turner Family (REP4-057 and AS-050)

31.1	Oral Submissions	
	Matter Raised	Highways England's Response
31.1.1	<p>During the Hearing the Inspectors were shown: FIGURE 10.5 GROUNDWATER SOURCE PROTECTION ZONES, GROUNDWATER ABSTRACTIONS AND RIVERS WITHIN THE GEOLOGY AND SOILS STUDY AREA. The representative of Highways England used the plan to show those groundwater receptors (abstractions) that are positioned in close proximity to the proposed alignment.</p> <p>My client does in fact have a licenced abstraction that is not marked on the Fig 10.5. Highways England was made aware of this missing information through response to consultation dated 19th April 2018. Copies of the abstraction licences were subsequently sent to Highways England.</p> <p>We were then informed accordingly that the Environmental Statement was updated and an explanation given as to why this abstraction was not assessed in the first instance. This confirmation was provided in the Consultee record of Engagement</p> <p>ID: SH230418-10.</p> <p>[Relevant extract and copy of abstraction licence attached to written submission].</p>	<p>The Figure shown in the Issue Specific Hearing 4 was Figure 11.4 Rev 01 (as submitted in the Environmental Statement [APP-178]). This does omit Borehole E. The Figure has been updated and is attached in Appendix A of this document (Figure 11.4 Rev02). The five boreholes are shown on the Licence Drawing, also attached in Appendix A of the document. None of the abstraction points on the licence (including E which is further away from the Scheme than the other four assessed boreholes) are predicted to be impacted by the scheme.</p> <p>For further explanation see response below in paragraph 31.1.3.</p>
31.1.2	<p>It appears that despite the fact that many conversations have been held with Highways England regarding these boreholes and a copy of the licence has been provided (and visits to set up monitoring). The Environmental Statement only references the pre-existing</p>	<p>The details of the four boreholes in the Environmental Statement were provided by the owner and the Environment Agency with a note that the licence had expired (see paragraph 31.1.3 response). The details on the new licence (dated 15 June 2018) were not included in the Environmental</p>

	<p>licence and not the current and renewed abstraction. Crucially it also does not show these abstraction points on Fig:</p> <p>10.5 (the main abstraction point being located immediately adjacent to the route alignment and proposed compound).</p> <p>We ask the Planning Inspectorate to require the applicant to acknowledge this consented abstraction and to update their documentation.</p> <p>At approximately 12:43 am this morning the Applicants representative, summarised that Highways England had properly evaluated all receptors and concluded that none were in areas of risk. We would ask that the Planning Inspectorate require that this exercise be reassessed, as it</p> <p>appears that a crucial point of abstraction in proximity to the engineering works has been overlooked.</p> <p>We are extremely concerned about this, particularly in the context of separate representations made over the risks to and dependence on groundwater to the farm.</p> <p>We respectfully request that this matter be referred to the applicant for urgent redress.</p>	<p>Statement. However, Highways England confirms that the borehole (E) that was omitted is further from the Scheme than the other four boreholes and therefore at lower risk. None of these points are predicted to be impacted by the Scheme (see Groundwater Risk Assessment [APP-282]).</p>
31.1.3	<p>Please note that my Clients renewed Water Abstraction Licence was issued in June 2018.</p> <p>This was before the publication of their Environmental Statement, but I suspect after their survey with the EA had been conducted.</p> <p>A particular concern is that those presenting the information on behalf of Highways England, were actually using and presenting out of date information.</p> <p>The proximity of my Clients main borehole (upon which the farm is critically reliant) is in extreme proximity to the route and compound areas.</p>	<p>Four of the licensed points (A-D) were included in Table 3.3 of 6.3 Environmental Statement Appendix 11.4 - Groundwater Risk Assessment [APP-282]. Details were provided by the owner and the Environment Agency for four wells based on the expired licence 13/43/023/G/074. Point E was omitted and is approximately 200m south west of Point D. None of these points (including E which is further away from the Scheme) are predicted to be impacted by the scheme.</p> <p>In the ES [APP-049] paragraph 11.6.56 it is made clear that a licence was being re-applied for and also that licence details can change. Paragraph 11.6.56 states that:</p> <p><i>“Through the water features survey undertaken in 2018 (the results of which are provided in the GRA in Appendix 11.4) an additional expired licence has</i></p>

been identified at Manor Farm in Winterbourne Stoke. This licence, which covers four boreholes for agricultural (general and domestic) purposes, lapsed in March 2017 and was reapplied for in February 2018. It was included in the water features survey in case it was re-licensed, which The Applicant understands has now occurred.”

The expired licence at the time of writing has been re-issued by the Environment Agency as SW/043/0023/010 and covers five wells.

Figure 11.4 of the Water Chapter of the ES [APP-049] shows the four borehole locations. An updated version of Figure 11.4 is attached to include the fifth borehole and the updated licence (no longer pending in the Key.) The borehole that was omitted is further from the scheme than the other four boreholes and therefore at lower risk.

32 Suzanne Keene (REP4-066 and REP4-093)

32.1	Oral Submission	
	Matter Raised	Highways England's Response
32.1.1	<p>The Contingent Valuation Study (CVS) accounts for 73% of the monetised value of the project. Highways England maintains that this is not a matter for the enquiry, but the NPSNN (Para. 4.5) is clear that it is.</p> <p>Para. 4.5, says: “The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. ... This information will be important for the Examining Authority and the Secretary of State’s consideration of the adverse impacts and benefits of a proposed development.”</p>	<p>Please see the Applicant’s Comments received to Deadline 3, 17.1.1 [REP4-036], the response to item 50.1.1-50.1.3 in the Comments on Written Representations [REP3-013] and the Applicant’s response to Written Question SE.1.25 [REP2-035].</p> <p>As set out in its response to Written Question SE.1.25 [REP2-035], the Applicant agrees that, as per paragraph 4.5 of the NPSNN, the information in the economic case (which forms part of the business case forming the basis for the investment decision on the Scheme) on economic, environmental and social impacts of the Scheme is important to the Examining Authority and the Secretary of State’s consideration of the adverse impacts and benefits of a proposed development. That information is contained in the Environmental Statement [APP-038 to APP-292], Case for the Scheme [APP-294], Combined Modelling and Appraisal Report [APP-298] and its Appendix D [APP-302].</p> <p>The CVR is a key part of the assessment of value for money of and therefore the investment decision for the Scheme. However as set out in the Applicant’s previous submissions, it is important to be clear on what the CVR does. Although it forms part of the information referred to in paragraph 4.5 of the NPSNN, the monetisation of heritage benefits it contains is not primarily relevant to the decision on whether to grant development consent for the scheme, because those benefits do not need to be monetised in order to be taken into account in the planning balance.</p> <p>The contingent valuation study does not seek to say that its results <u>are</u> the economic benefits deriving from the Scheme, but instead seeks to quantify the heritage benefits for valuation purposes. The question of value for money</p>

		does not form the basis of the ExA's assessment of the heritage impacts of the Scheme, which is done in the context of the NNNPS, EIA (including the HIA) and WHS Convention.
32.1.2	Respondents were told twice that the survey [CVS Questionnaire] was not a public consultation but <i>they were not told that it would feed into the final decision</i> . Yet economists recommend that respondents be told that their replies will be consequential (Haab <i>et al</i> , p.7).	<p>The CVS was not a public consultation and it is appropriate that respondents were aware of this to encourage them not to seek to engage in “strategic bias”, over- or under-stating their true willingness to pay and finding their responses disqualified.</p> <p>Consistent with best-practice, including the reference to Haab <i>et al</i>, immediately before answering the valuation question, respondents were told: <i>“Studies have shown that many people answering surveys such as this one, say they are willing to pay more than they would actually be willing to pay in reality. Please think about this question as if it were a real decision and you were actually making a payment for real.”</i></p> <p>The respondents were therefore told to respond on the basis that their replies would be consequential, resulting in a real payment.</p>
32.2	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
32.2.1	58.1.1 - I maintain that it does not comply with legislation because as the Consortium of Archaeologists as well as the CBA have shown it would cause physical damage to the WHS that cannot be compensated for by improved experience (even if the experience were to be improved, which I do not concede). Therefore, as I argued in my submission, it fails to comply with the UK's undertakings under the World Heritage Convention. Other national legislation and policy flows from that.	The Applicant strongly rejects any allegation that the Scheme does not comply with local, national or international policy and legislation. The Applicant has set out, in great detail, that the Scheme is compliant with all required national and international statutory and policy obligations. For instance, and for more detail, please see agenda item 3 in the oral submission for ISH2 regarding cultural heritage [REP4-030].

32.2.2	58.1.11 – My concern is about the identified engineering risks from the geology, also mentioned by the NAO. I note that HiEng does not deny that they exist nor claim that they can be negated, merely reiterating that the best design practice and regulations are being followed	<p>Guesswork is not used for tunnelling; the contractor would use a risk management approach and strategy, employing further investigation as required as part of the standard approach set out by the Institution of Civil Engineers, the British Tunnelling Society and Association of British Insurers.</p> <p>Properties and characteristics of any grout used will be carefully selected to limit the issue of grout migration and dilution and other effects from groundwater and fissures in the chalk.</p> <p>Geology will dictate which type of tunnel boring machine ('TBM') is used. Slurry tunnel boring machines are most common in the UK for tunnelling in chalk although Variable Density machines are gaining a reputation for dealing with the more complicated chalks. The Applicant is leaning towards a slurry machine approach.</p> <p>See agenda item 5.1 in the oral submission for ISH4 regarding flooding and ground conditions [REP4-032].</p>
32.2.3	58.1.11 - I am also concerned about terrorist explosion. These could destabilise Stonehenge itself since the tunnel runs so close.	<p>Highways England has been working closely with the emergency services on the design of the tunnel and its future operation. This includes contingency planning arrangements for any foreseeable scenario that could unfold in the future, as is Highways England's standard practice for protecting and maintaining parts of the network where there is sensitive infrastructure. The potential for the Scheme to be vulnerable to major incidents and disasters, including terrorism, is considered through the assessment of major events, as set out in the Environmental Statement, in section 4.6 of Chapter 4, Environmental Assessment Methodology [APP-042].</p>
32.2.4	58.1.7 – The iconic status of Stonehenge would be affected by massive tunnel cuttings and portals and the Longbarrow interchange. It would be impossible to ignore the presence of these major engineering features.	<p>The question is in respect of the benefits of the Scheme and the suggestion that there would be very serious damage to the landscape and archaeological evidence. The Applicant reiterates that there would be benefits to WHS from the proposed Scheme both in Cultural Heritage and Landscape terms.</p> <p>See agenda item 6 in the oral submission for ISH2 regarding cultural heritage [REP4-030] and agenda item 5 in the oral submission or ISH3 regarding landscape [REP4-031].</p>

<p>32.2.5</p>	<p>58.1.28 – The tunnel may be a fundamental part of the Scheme but many people disagree that Stonehenge should be removed from the view of travellers – appreciation of it has been recorded in artworks and literature for centuries.</p>	<p>The question is in respect to the suggestion that that many of the representations say it is a public benefit to be able to view Stonehenge from the road. The Applicant understands this to be specific to drivers’ views, for which there would be a loss of the view of the Stones due to the tunnel. The Applicant considers that the benefits of the tunnel and removal of views of vehicles for those viewing the Stones must be considered in relation to the inevitable change to existing driver’s views.</p> <p>See item 2.5.4.1 in the oral submission for the open floor hearings [REP3-012] and also the response to Written Question SE.1.16 [REP2-032].</p>
<p>32.2.6</p>	<p>58.2.19 – Hasty excavation during pre-construction surveys is no way to systematically research this unparalleled landscape.</p> <p>This comment is vindicated by the CBA and the Consortium of Archaeologists, who have critiqued in detail the quality of the sample investigations and the proposed excavation strategy and clearly stated that a large area of archaeology will be completely destroyed if the scheme proceeds.</p> <p>My concerns about the potential damage to the Blick Mead site are also amply confirmed by subsequent submissions.</p>	<p>The Applicant does not accept that any element of the Scheme’s preparation and design, including archaeological excavations during pre-construction surveys has been hasty. As explained at ISH2 (as recorded in the Applicant’s written summary of oral submissions [REP4-030]), Highways England developed a comprehensive 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. See also the Applicant’s detailed responses to points raised by the Council for British Archaeology at 13.1.1 and 13.1.7 of Comments received to Deadline 3 [REP4-036] with respect to the programme of archaeological evaluation and sampling strategy.</p> <p>The preferred route for the Scheme was carefully chosen to minimise effects on archaeology, and a comprehensive programme of archaeological evaluation surveys has informed the Scheme design to limit direct physical impacts as far as practicable. The design has been carefully chosen in order to preserve archaeological remains along the 2 mile section of tunnel. Examples of how the design has been developed to limit impacts on archaeology include, but are not limited to, the choice of a northern bypass of Winterbourne Stoke, the reduced footprint and land take for Rolleston Corner, and the design and placement of the western and eastern tunnel portals and portal approaches in areas that have been shown to have limited archaeological remains within their footprint. Further information can be found in the Assessment of Alternatives, ES Chapter 3 [APP-041] and in ES</p>

Chapter 6, Cultural Heritage [APP-044], Section 6.8, Table 6.9. The cultural heritage assessment, reported in ES Chapter 6, identifies the effects on known archaeological features whilst recognising the benefits that the tunnel will deliver for the WHS landscape as a whole.

The Scheme includes measures to facilitate the sharing and understanding of archaeological discoveries. Archaeological remains would be excavated and recorded during the preliminary works phase, in advance of the construction of the Scheme. The draft Detailed Archaeology Mitigation Strategy (DAMS) submitted at Deadline 4 [REP4-024] also identifies areas to be protected in-situ. The DAMS is being developed in consultation with Wiltshire Council Archaeology Service and the Heritage Monitoring Advisory Group (comprising Historic England, Wiltshire Council Archaeology Service, the National Trust and English Heritage Trust) and will be finalised prior to the end of the Examination, and is secured by requirement 5 of Schedule 2 of the draft Development Consent Order [REP4-018]. The project archive of reports and archaeological finds would be deposited in a local museum once the archaeological excavations have been analysed and published.

See item 8 in the written summary of the Applicant's oral submissions made at ISH2 regarding cultural heritage [REP4-030] for further detail concerning Blick Mead. As confirmed at that hearing, the assessment undertaken in terms of the impact of the Scheme at Blick Mead 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.

33 Environmental Agency (REP4-049)

33.1	Comments on Updated Outline Environmental Management Plan	
	Matter Raised	Highways England’s Response
33.1.1	<p>3.1 MW-WAT12 Flood Risk Management Plan</p> <p>We support the inclusion of this plan in the OEMP. However, we recommend some additional wording to MW-WAT12 relating to climate change allowances. This is given below:</p> <p>“Flood Risk Management Plan:</p> <p>The main works contractor shall prepare a Flood Risk Management Plan to the Authority for approval, as part of the Water Management Plan. The plan will summarise:</p> <ul style="list-style-type: none"> a) any areas within Flood Zone 3 <u>plus appropriate allowance for Climate Change</u> areas susceptible to groundwater flooding, and other flood risk sources, such as sewer flooding; b) any applications made, or likely to be made, for an environmental permit, where required in relation to flood defence, for temporary and permanent works and the status of the works; c) any specific requirements or conditions of the approval that will be obtained from the relevant consenting bodies; d) any flood risk management or mitigation measures implemented, or to be implemented, in support of temporary and permanent works proposals; and <p>a statement on the cumulative flood risk impact of temporary and permanent works. The plan shall be developed following consultation with the Environment Agency.”</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

33.1.2	<p>3.2 MW-WAT13 Flood Risk – general provisions:</p> <p>We are satisfied with the wording of MW-WAT13 provided in the amended OEMP dated May 2019 and agree with its aims. However, at the current time we are still in discussion with the applicant regarding the details within the Flood Risk Assessment (FRA), as it appears the current scheme has the potential to change the flood risk in the area. This would need to be reflected in the OEMP. This is relevant because MW-WAT13 refers to the FRA given in ES (Appendix 11.5) the latest version is dated May 2019, particularly in the third paragraph highlighted in bold below. We recommend that either the FRA and/or the OEMP should be amended and we would expect to see no increase in flood risk from the scheme.</p> <p>MW-WAT13 states:</p> <p>“Flood Risk – general provisions:</p> <p>The main works contractor shall, where reasonably practicable, minimise works within the floodplain. Temporary compounds and haul routes will be located outside of EA Flood Zones 2 and 3 and primary overland flow paths wherever reasonably practicable.</p> <p>The main works contractor shall be responsible for obtaining from the Environment Agency updated modelled water levels (1% AEP including climate change) as well as updated information on the required standard of protection of the flood defences.</p> <p>The main works contractor shall ensure that flood risk is managed safely throughout the construction and implementation period, and that all designs do not cause increased risk levels from those assessed in the Flood Risk Assessment (FRA) included in the ES (Appendix 11.5) and include the provision of a safe refuge during a flood event.</p> <p>The main works contractor shall be responsible for providing and maintaining continuous flood defence provision, where relevant, for both permanent and temporary works, to the statutory flood defence level as detailed within the FRA.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
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	<p>The main works contractor shall consider and implement appropriate measures to manage the potential risks of flooding from rivers, localised perched groundwater, overland surface water flows and sewer surcharging, in accordance with the details provided within the FRA. This will include consideration of potential flow paths within the site which could become active in the event of extreme rainfall and/or sewer surcharging, particularly during temporary works. Overland flow paths will be determined by site topography, therefore vulnerable operations and materials will be located within elevated parts of the site where reasonably practicable, away from potential flow paths. If this is not possible, other appropriate protection measures will be incorporated.</p> <p>The main works contractor shall assess potential build-up of groundwater on the upstream side of below ground structures, as this may lead to rise in groundwater levels and in severe occurrences of groundwater flooding, and mitigate where appropriate. At the end of construction, where temporary support, such as sheet piling and secant piles, do not form part of the operational structure, pile walls where required will be removed, cut-down or piped through routes provided to prevent the potential build-up of groundwater.”</p> <p>We are currently in discussions with the applicant regarding the FRA, OEMP and other documents relating to flood risk matters.</p>	
<p>33.1.3</p>	<p>3.3 MW-BIO3 River Till ecological mitigation</p> <p>Piling - We note that non-impact piling is now included in the OEMP. We presume this means non-percussive piling. If this is the case we would be satisfied with this method, however, we would still wish to be consulted on the timing and nature of any proposed piling to avoid fisheries impacts. We therefore provide below some suggested additional text to the piling paragraph in MW-BIO3 in the OEMP. We would then be satisfied that permanent adverse impacts could be avoided.</p> <p><i>“Piling</i></p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

	<p>Non-impact piling shall be used for the construction of both the temporary bridge and the permanent viaduct. <u>The Environment Agency should be consulted on the timing and nature of any proposed piling, and any agreed measures implemented into the scheme to avoid fisheries impacts</u>”</p> <p>Temporary bridge - We note that the wording has recently been changed in MW-BIO3 to recommend relocation of the temporary bridge after every two years. We have not been cited on this change and would like further discussion as to why this is the case, as it is not necessarily something we would support. We would also like to see commitment to actively restoring the river corridor to previous condition or better (as recommended in the River Avon Restoration Plan) upon cessation of the temporary crossing(s). With these considerations included we would be satisfied that permanent adverse impacts could be avoided.</p>	
33.2	Oral Submissions	
	Matter Raised	Highways England's Response
33.2.1	<p>7.1 Geology, ground conditions and groundwater flows</p> <p>7.1.1 We are generally reasonably satisfied at this stage that the proposed DCO and OEMP and other documents contain sufficient controls for the scheme. However, we would like wording changed to seek our 'agreement' of the items we are to be consulted on (not just consultation). This is to ensure that our comments would be agreed and then implemented in the detailed proposals. We certainly expect further risk assessment once the final design has been confirmed and that should take into account results of the additional ground investigation that is ongoing.</p>	<p>A response to this comment will be included in a separate response to all dDCO comments to be submitted at Deadline 6 alongside an updated version of the dDCO. These submissions will also take account of the latest discussions with stakeholders in relation to dDCO matters.</p>

33.2.2	<p>7.3.2 The OEMP should consider human health and environmental impacts of scheme and contamination. This should be included in MW GEO1 of the OEMP which currently only requires control of risks to humans from disturbance of contaminated land.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
33.2.3	<p>9.1.6 Whilst we fully support and attend the A303 Benefits Steering Group and its associated Biodiversity Working Group (and acknowledge the recent funding for a Biodiversity Strategy), we do not believe this provides adequate commitment or prioritisation to the water environment at this stage. We would however support a commitment to continue these groups for a number of years to allow useful multi-organisation discussions and to maximise the successful delivery of enhancements and other benefits.</p> <p>9.1.7 Therefore, as a solution, we propose an Environmental Enhancement Plan for the water environment, as suggested in written representation dated 3 May and 31 May 2019. This would commit Highways England to explore and utilise the opportunities within the Hampshire Avon Catchment Partnership to deliver the River Avon Restoration Plan and its associated multiple benefits. This could be via direct monetary contributions, or alternatively in-kind machinery or staff time and expertise.</p> <p>9.1.8 We would recommend that a Requirement be included in the draft DCO:</p> <p>“(1) No part of the authorised development is to commence until an Environmental Enhancement Plan has been submitted to and approved in writing by the Secretary of State, following consultation with the planning authority, the Environment Agency and Natural England.</p> <p>(2) The Environmental Enhancement Plan must be implemented in accordance with the approved details referred to in subparagraph (1).”</p>	<p>As summarised in agenda item 4.11 of the Applicant's summary of the the Issue Specific Hearing related to the development consent order [REP4-029], the Scheme already secures net biodiversity gain, principally through the creation of new connected chalk habitats (and as agreed with stakeholders including Natural England) which would also be of some benefit to watercourses. Similarly the improved drainage regime proposed by the Scheme would improve the water environment over the current A303. As such, the Applicant does not consider it to be necessary or reasonable in the circumstances to impose a requirement securing further biodiversity gain. The Applicant also notes that discussions are continuing around support that could be given by Highways England outside of the Scheme to water environment improvements.</p>

	<p>9.1.9 Alternatively we would be satisfied for the need for the production of the plan to be included in the OEMP or HEMP. This could be included in the list of plans in OEMP reference MW-G7 and then the implementation/maintenance aspects covered in the HEMP as required.</p>	
33.2.4	<p><i>9.4 Issue 6.2: Opportunities for management by grazing.</i></p> <p>We would defer to Natural England in relation to managed by grazing (although we support the hearing comments that a correct grazing/mowing regime is fundamental to long-term success of establishment of chalk grassland health and diversity). In addition, we would recommend that the HEMP should also include a maintenance regime for the area around the drainage structure and river crossings, as well as any ongoing invasive non-native species management, to sustain appropriate chalk river habitat.</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>
33.2.5	<p><i>9.5 Issue 7.1: The EA's recommendation that OEMP measures PW-BIO1, MW-BIO5, and MW-BIO6 should be expanded in respect of biosecurity and invasive species. Should the draft DCO include provision for a full survey and control plan prior to preliminary works commencement?</i></p> <p>9.5.1 Please reference our written representations dated 3 and 31 May 2019. To conclude, yes, we consider the draft DCO should include provision for a full survey and control plan prior to the commencement of preliminary works. This is required because we believe the sections in the OEMP relating to biosecurity and invasive non-native species are too broad and unprepared given the extent of the other data gathering exercises. Invasive non-native species and biosecurity can be managed effectively, but success depends on thorough and considered method statements, and having any rapid response plans in place should a new species become known. This would infer that early information as to the presence and distribution of invasive non-native species is essential, especially given the size</p>	<p>A response to this comment will be included in a separate response to all OEMP comments to be submitted at Deadline 6 alongside an updated version of the OEMP. These submissions will also take account of the latest discussions with stakeholders in relation to OEMP matters.</p>

	<p>and complexity of soil/people/transport movements in the works area. Early knowledge will also make any required management more successful and cost-effective due to appropriate lead-in time and budget allocated. We would emphasise that the full survey and control plan can be a relatively straightforward exercise and should adhere to industry best practice.</p> <p>9.5.2 We also believe that the DCO should commit to completing any ongoing invasive species treatment started, and also aim to monitor and manage any invasive non-native species which may have resulted from the construction works unknowingly. This could be incorporated into any maintenance or management plan.</p> <p>9.5.3 There seems to be slight confusion in Highways England's response to our written representations as regarding HRA and legislation to prevent spread, and we welcome further discussion to clarify. Our comments above would still apply.</p>	
33.2.6	<p>6.4 Groundwater levels recorded in boreholes WS03, WS09, WS10, reportedly monitoring the alluvial deposits at Blick Mead, are higher than both the elevation of the Mesolithic Deposits and groundwater levels in WS02 and WS05 that monitor the chalk. This may suggest the presence of perched groundwater (originating from infiltration of rainwater into the alluvial deposits lying above the Mesolithic layer) and being at a higher hydraulic head, having the potential to migrate downwards thus contributing to the wetting of the archaeological artefacts. It should however be noted that the difference in groundwater heads recorded in the alluvial deposits and chalk are relatively small and could be explained by their relative positions and constitute an expression of the natural hydraulic gradient of a single, connected groundwater body across the site. Reference to borehole logs – thus far not presented – including the surface elevation of the boreholes, detailed stratigraphic log, screened intervals and water strikes would aid clarification of the presence of perched</p>	<p>The groundwater levels referred to are on the graphs provided in the Blick Mead monitoring report [AS-015]. Borehole WS10 was installed at a higher elevation than WS09 to determine whether there is any evidence of perched water. Groundwater levels in WS09 are generally higher than those in the more shallow WS10 [AS-015]. This does not demonstrate perched water but does verify the conceptual model of an upward head gradient with the saturated deposits at Blick Mead being fed from the Chalk aquifer beneath. The drilling results do not show any evidence of perched water. The borehole drilled depths and installation depths are provided in REP1-007 Blick Mead - Note regarding proposals for additional monitoring.</p> <p>The difference in groundwater levels between WS09 and WS03 compared to WS02 and WS05 is explained by the fall in groundwater levels from north to south towards the River Avon i.e. the difference is explained by their relative positions and constitute an expression of the natural hydraulic gradient of a single, connected groundwater body across the site, as suggested by the Environment Agency.</p>

	groundwater and the possibility that the Mesolithic layer is wetted to some degree by water infiltrating down from above.	
33.2.7	6.5 Chemical analysis of groundwater taken from the Mesolithic layer may also aid determination of its origin in that water infiltrating down through the overlying alluvial deposits may be expected to have a somewhat lower calcium carbonate content than that received from the chalk below. We do note however, the apparent widespread occurrence of made ground consisting of chalk rubble across the site as reported in 'ES Appendix 11.4 Annex 3 Blick Mead Tiered Assessment' which could raise the calcium carbonate content of local recharge into the alluvial deposits. Other parameters may be more useful in determining the origin of water in the Mesolithic layer.	<p>Further assessment of the origin of water is not considered to be necessary. The groundwater levels support the conceptual model that that 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. Rainfall will also provide a further mechanism for wetting of the Mesolithic deposits. (Section 2.6 of Appendix 11.4 Annex 3 Blick Mead Tiered Assessment [APP-282]. The groundwater levels and rainfall at Blick Mead would not be affected by the Scheme.</p> <p>There are no significant effects predicted at Blick Mead [APP-282]. Therefore further investigations into the detail of Blick Mead would not change the outcome of the assessment.</p>
33.2.8	6.8 These reports do not however present the model outputs for reduction in groundwater levels caused by the proposed tunnel during periods of high groundwater level, the focus being on flood risk under such conditions so only rise in level is plotted (Fig. 4.1 of Appendix 11.4 Annex 1 Numerical Model Report, AMW, July 2018). It is recognised that the magnitude of any drop in groundwater level due to the tunnel under peak conditions is likely to be insignificant in comparison to the seasonal rise resulting in water levels remaining significantly above the Mesolithic layer. However, presentation of the predicted reductions in groundwater level down gradient of the tunnel during high groundwater level conditions and demonstration of whether any fall that may extend as far as Blick Mead would be significant in comparison to the seasonal rise would provide confidence in this assumption.	<p>Groundwater levels at Blick Mead are generally above 68m aOD and in the winter months can reach at least 0.2m higher at 68.2m aOD (see final graph in Blick Mead monitoring report [AS-015]), In a typical year this is therefore 0.7m higher than the upper level of the Mesolithic deposits at 67.5m aOD (i.e. 68.2 minus 67.5) and at least 0.35m higher than the archaeological and ecological artefacts found between 67.85 m OD and 66m OD (i.e. 67.85 minus 67.5). This highest level of 67.85 is taken from the archaeologist record at paragraph 60.3.4 Deadline 3 Submission - 8.18 - Comments on Written Representations [REP3-013]. Under peak conditions the depth of groundwater above the Mesolithic deposits would be more. There is therefore a 'freeboard' of a least 0.35 m when groundwater levels are high which ensures that the Mesolithic deposits remain wetted. The model run results for peak conditions shows that the effects do not spread as far as Blick Mead and if they did they would result in a fall in groundwater levels of less than 0.02m. This is well within the 'freeboard'. The fall in levels downstream of the tunnel is not significant at Blick Mead.</p>

34 Mark Bush for Consortium of Archaeologists (REP4-047)

34.1	Oral Submissions	
	Matter Raised	Highways England's Response
<p>The Applicant's written oral submissions Issue Specific Hearings [REP4-029 to REP4-035] respond to the Consortium's comments received at Deadline 4. Additional points raised are detailed below.</p>		
34.1.1	<p>7. It is unclear who wrote the HIA and heritage chapter of the ES on behalf of Highways England ('HE'). The consortium asks that the panel considers whether its author/s can be said to be experts in the particular eras with which most of the issues are concerned, in particular the Mesolithic, Neolithic, and Bronze Age.</p>	<p>The HIA [APP-195] sets out the names of the authors and contributors to the HIA and the Environmental Statement cultural heritage chapter (Chapter 6, [APP-044] in section 16, Acknowledgements and Authorship. Both the HIA and ES have been prepared by competent experts as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.</p> <p>Fieldwork was directed by Andrew Manning BSc MA PGCE MCIfA and OB Andrew Crockett BTech MCIfA and Dr Matt Leivers BA ACIfA, a prehistorian, lithics and prehistoric ceramics specialist.</p> <p>Mr Manning is a field archaeologist with some 30 years' experience. He was previously involved in the very extensive excavations Boscombe Down, Amesbury, which produced finds such as the Amesbury Archer and the Boscombe Bowmen. Mr Crockett is a field archaeologist with near 40 years' experience who has worked on projects in the Stonehenge, Avebury and Associated Sites WHS and in the wider Salisbury Plain landscape for the last 30 years. Dr Leivers co-wrote both the 2008 monograph on the archaeological investigations for the previous A303 Stonehenge Improvements and the 2016 Research Framework for the Stonehenge, Avebury and Associated Sites World Heritage Site. A member of the Avebury and Stonehenge Archaeological and Historical Research Group (ASARHG), his research interests include prehistoric pottery, early prehistoric mortuary practice, and the implications of the transition to fully settled agricultural life in the Middle Bronze Age. His PhD thesis, "The Architecture and Context of</p>

Mortuary Practice in the Neolithic Period", was awarded by the University of Southampton in 2000.

Mr Crockett's work has included surface artefact collection and ploughsoil sampling projects in the Stonehenge landscape. He was Project Director for the Army Basing Programme investigations at Larkhill and Bulford, including the excavation of the Larkhill Causewayed Enclosure. Dr Leivers has worked across the Stonehenge landscape and in both parts of the World Heritage Site: in addition to the above-mentioned publications he has been involved in the analysis and publication of numerous sites on and around Salisbury Plain, including at Larkhill and Bulford (the Army Basing Programme, for which he is Post-Excavation lead) and the Eastern Infrastructure Project. Both Mr Crockett and Dr Leivers have worked extensively on Mesolithic, Neolithic and Bronze Age sites and artefactual assemblages. currently Dr Leivers works as a Senior Specialist Services Manager at Wessex Archaeology.

Neil Macnab BA (Hons) MCIfA, Cultural Heritage Lead for the A303 Stonehenge Amesbury to Berwick Down Scheme, has over 25 years' professional experience working in the heritage sector. He has worked in heritage consultancy since 2004, prior to which he worked in archaeological contracting. He has worked on a broad range of projects across the UK and Ireland, but latterly has focussed on highway projects including the A46 Newark to Widmerpool Improvement Scheme, the A6 Derry to Dungiven Scheme and the A38 Derby Junctions. In 2016-2017, he was seconded as Principal Cultural Heritage Adviser to Highways England. His consultancy experience includes investigations of Palaeolithic in situ flint scatters, in situ lake side Mesolithic activity and Neolithic and Bronze Age burial mounds associated with Highways and Water Supply Schemes.

Chris Moore BA (Hons) MCIfA, Deputy Heritage Lead for the Scheme, has over 30 years' professional experience in archaeology and heritage consultancy. Mr Moore's work has focussed on the Stonehenge, Avebury and Associated Sites WHS for many years including the 2004 A303 Stonehenge Improvement project, the Stonehenge Visitor Centre project (2004) and the Stonehenge Environmental Improvements Project (2011) and the Stonehenge Visitor Enhancement Project (2014), preparing Heritage Impact Assessments for the latter two projects. Mr Moore led the archaeological

		evaluation programme for the previous A303 Stonehenge Improvements and co-wrote (with Dr Leivers) the resulting 2008 monograph.
34.1.2	<p>8. As summarised below Professor Parker-Pearson set out an assessment of the material which has been found through the 1% sampling at the eastern and western portals. He stated that the concentrations of material at the western portal demonstrate that it is not a scatter of casually dropped material. It is the result of concentrated activity, consistent with being the remains of a large settlement. He stated that we have sufficient information from some of the diagnostic material and from the trial trenching which uncovered features associated with the early Bronze Age at the time of the Beaker People, 2450-1800bc (Copper into early Bronze Age).</p>	<p>The results of the 1% sampling of the ploughzone at the western portal indicates a palimpsest of artefactual material in the ploughzone at the western portal approach, representing activity over a long period of time – some two millennia or more. Such palimpsests are typical within the WHS, the varying quantities and distributions of material of different chronological periods and diagnostic type vary across the landscape. Within the palimpsest of evidence at the western portal, areas of differing activities are likely to be present.</p> <p>The results of the evaluation at the western portal are reported in detail in REP1-045 and 046 and the artefact distributions are considered further in REP3-024. By way of a summary, a total of 8731 pieces of flint were recovered during the evaluations of the area within the red line boundary). From this total (8731 pieces), 101 diagnostic artefacts (of all periods) were identified (1.16%). The correlation of the material in the ploughsoil with sub-surface archaeological features was generally poor, with the exception of one area in which pits containing Beaker material and human remains were found (noting these features are outside the footprint of the retained cutting and Green Bridge 4 and will be retained in situ).</p> <p>In our submission [REP3-024], the evidence from the artefacts in the ploughzone points to the fact that some of this material may potentially be related to Beaker occupation. The suggestion of a ‘large settlement’ is not demonstrated by the evidence.</p>
34.1.3	<p>9. He highlighted that when one looks at this within the larger WHS this is an area that was identified in a publication in 2017 by Josh Pollard and colleagues. In that they identified not only the area adjacent to the western approach but also a substantial area to the north which is several km long. A remarkable density of Beaker associated material. Professor Parker-Pearson stated he knew of no Beaker settlement in Britain or in Europe on that scale.</p>	<p>The publication referred to by Professor Parker Pearson is understood to be from ‘The Neolithic of Europe: Papers in Honour of Alastair Whittle’ (Pollard, J. et al., 2017. Remembered and Imagined Belongings: Stonehenge in the Age of First Metals. In: P. Bickle, V. Cummings, D. Hofmann and J. Pollard, eds. The Neolithic of Europe: Papers in Honour of Alasdair Whittle. Oxbow, pp. 279–297).</p> <p>This refers on page 290 to ‘a marked concentration of early Bronze Age worked flint and ceramics from Wilsford Down to the south of the Winterbourne Stoke Crossroads barrow group’; this area is marked on the</p>

		<p>accompanying Figure 18.8 (a) on page 291. The figure attribution cites Richards 1990 – this is the Stonehenge Environs Project which recovered flint scatters from surface collection in the fields to the west and east of Diamond Wood in the 1980s. This is the immediate context for the evidence from the Scheme.</p> <p>The ‘substantial area to the north which is several kilometres long’ referred to by Professor Parker Pearson is described in the article as, ‘a broad swathe [of Beaker and early Bronze Age settlement] over 2km long running from the west of Stonehenge, up to and beyond the western end of the Stonehenge Cursus/Fargo Wood and to the east on Durrington Down’ (p 290 of Pollard et al 2017). The accompanying figure 18.8 shows that the southernmost extent of this area lies at least 350 m north of the Scheme boundary. Highways England respects Professor Parker Pearson’s evidence but considers that the suggestion that the Scheme impacts a large settlement unparalleled in Britain or Europe is not supported by the evidence from the evaluation and in any event any such settlement lies outside the Scheme boundary.</p>
34.1.4	<p>10. With regard to the Eastern Portal Professor Parker-Pearson stated that the finds suggested that one is looking at a funerary zone which may assist in understanding the relationship between the eastern and western parts of the WHS.</p>	<p>The results of the archaeological evaluation of the eastern portal are set out in REP1-047 and 048 and the artefact distributions are considered further in REP3-024. The concentrations of material recovered from ploughsoil sampling at the Eastern Portal and its approaches do not suggest foci for activity comparable with those seen in the western parts of the WHS, but is suggestive of some limited Early Neolithic and/or Late Mesolithic activity.</p> <p>The eastern portal lies near to, but mostly hidden in views from, a number of groups of barrows and immediately east of the Stonehenge Avenue. Comprehensive evaluation has not located any evidence for funerary monuments or burial contexts in the area of the eastern portal: the evidence from the evaluation is predominantly composed of flint assemblages within the ploughsoil. The one area where an assemblage of possible interest was recovered (from a deposit accumulating in a natural hollow) lies beyond the evaluation area considered for the Scheme (the evaluation area at the eastern portal included a 30m buffer beyond the Scheme construction footprint).</p>

		The Applicant considers that the suggestion of a zone of funerary activity within the Scheme boundary is not demonstrated by the evidence from the evaluation of the eastern portal and its approaches.
34.1.5	<p>11. Significantly, following these submissions, Chris Moore for HE stated: ‘with regard to the significance of that material we have heard theories and at this stage our position is that those theories are inevitably untested and the suggestions are therefore possibilities.’</p> <p>No contrary theory/rebuttal was put forward by Mr Moore.</p>	<p>See Highways England’s responses to 34.1.2, 34.1.3 and 34.1.4 above. The evidence from the evaluation of the Western portal approach suggests that some of this material may potentially be related to Beaker occupation [REP3-024]. The suggestion of a ‘large settlement’ is not demonstrated by the evidence from the evaluation and any such settlement lies outside the Scheme boundary. Similarly, the suggestion of a zone of funerary activity within the Scheme boundary is not demonstrated by the evidence from the evaluation of the eastern portal and its approaches.</p> <p>The Applicant acknowledges that understanding of the uses of the Stonehenge WHS landscape is the subject of a constantly evolving debate: the DAMS, which is under development in consultation with members of HMAG and with input from the Scientific Committee, seeks to capture current research questions and thinking. The Scheme benefits from a comprehensive archaeological evaluation programme developed in consultation with HMAG. The results of the evaluation at the western portal confirm survival of a palimpsest of artefactual evidence representing activity over a long period of time; that from the eastern portal is different in character in that it can only be said to be suggestive of some limited Early Neolithic and/ or Late Mesolithic activity; and is not suggestive of funerary activity. Overall, the interpretations posited by Professor Parker Pearson are not conclusively demonstrated by the evidence from the evaluation.</p>
34.1.6	<p>12. Paul Garwood’s evidence to the Panel emphasised the importance of the location of the Western Portal in terms of the spatial and visual relationships among the linear barrow groups which are situated around Stonehenge, and their significance as key components of the highly structured Early Bronze Age ceremonial and funerary landscape that is still visible today. He highlighted that the siting of the portal in this location would disrupt those relationships resulting in significant harm to the landscape</p>	<p>The significance of the Winterbourne Stoke Crossroads barrow group and the impacts of the Western Portal and Longbarrow Junction upon this group and its relationships with other barrow groups were addressed by the Applicant at the issue specific hearing, as recorded in its written summary of oral submissions in relation to agenda item 6 from ISH2 regarding ES Chapter 6 [REP4-030]. The Applicant has undertaken its own assessment of the impact of the Scheme on the aspects referred to in its HIA [APP-195] and it is not correct to suggest no evidence has been produced in this respect by Highways England. Highways England sets out its assessment, and</p>

settings and sensory qualities of those barrow groups and the WHS. He also emphasised that the tunnel portal, 4-lane road cutting, and vast 'Longbarrow Junction' would have an especially adverse impact on the setting of the Winterbourne Stoke Crossroads barrow group, the best preserved Early Bronze Age funerary monument complex in north-west Europe, and an integral part of the wider prehistoric landscape. **No evidence to the contrary was presented by HE.**

therefore the evidence upon which it places reliance, in the Environmental Statement Chapter 6 - Cultural Heritage [APP-044]-and the HIA [APP-195], Highways England disagree with Paul Garwood's assertions in relation to the Scheme causing significant harm to the landscape settings and sensory experience of barrow groups in relation to the Scheme design and the siting of the Western Portal, including the Winterbourne Stoke Crossroads Barrows. Details from Highways England's assessments are set out below.

With regard to the **“spatial and visual relationships among the linear barrow groups which are situated around Stonehenge”**, the Scheme conceals the new infrastructure in key views agreed with HMAG [APP-195, para. 5.3.38-40]. The spatial and visual relationships among the linear barrow groups are considered in HIA Section 6.9, Asset Groups: baseline description and assessment of Scheme impacts and effects. The current setting of the Asset Groups is described and aspects of their current setting that contribute to or detract from their significance and expression of Attributes of OUV are assessed. This includes identification of key views. The anticipated impacts of the Scheme on the fabric and setting of Asset Groups is described and the scale or severity of impact is described. The significance of effect of the Scheme upon attributes of OUV expressed by each Asset Group is assessed.

With regard to the disruption of **“those relationships resulting in significant harm to the landscape settings and sensory qualities of those barrow groups and the WHS”**, these already experience the impacts and effects of the existing A303. Impacts of the existing A303 on Asset Groups and discrete assets are considered in HIA Sections 6.9, Asset Groups: baseline description and assessment of Scheme impacts and effect and 6.10, Discrete and isolated assets: baseline description and assessment of Scheme impacts and effects. Impacts and effects of existing A303 on Attributes of OUV are summarised in the HIA [APP-195, paras. 9.1.5 – 9.1.25]. This notes that:

- “The existing A303 impacts upon the setting of all monuments from which it is visible and audible and the WHS as a whole.” [APP-195, para. 9.1.12]
- “The existing A303 severs relationships between a number of monuments and their wider landscape, including Stonehenge, the Normanton Down Barrows (AG19), barrow cemeteries on King

Barrow Ridge (AG26) and numerous barrows to the south of the A303.” [APP-105, para. 9.1.14]

- “The relationships between many monuments in the WHS are severed by the course of the existing A303, which interrupts sightlines with visual distraction and clutter, and causes physical severance. The existing A303 has a particularly negative impact on visual connections between the Normanton Down Barrow Group (AG19) and monuments such as Stonehenge (AG22), the Old and New King Barrows (AG26), the Avenue Barrows (AG30), the Avenue (AG27), the Cursus (AG23) and various barrows, and in relationships between Stonehenge and a range of monuments to the south, as well as discrete barrows and other ritual / ceremonial sites across the WHS.” [APP-195, para 9.1.20]
- “The existing A303 has a negative impact on the setting of a range of monuments and sites including Stonehenge (AG22), the Avenue (AG27), the Cursus (AG23), Normanton Down Barrow Group (AG19), the Winterbourne Stoke Crossroads Barrows (AG12), the Diamond Group (AG13) and other related assets. The A303 not only severs relationships between Asset Groups and discrete assets, it also physically severs a number of barrows, cutting through them or clipping parts of monuments” [APP-195, para. 9.1.22]
- “The existing A303 has visual, aural and access impacts on the Integrity of the WHS” [APP-195, para. 9.1.26 sqq].

With regard to the disruption of “those relationships resulting in significant harm to the landscape settings and sensory qualities of those barrow groups and the WHS”, these already experience the impacts and effects of the existing A303. The existing baseline is set out in the Cultural Heritage Setting Assessment [APP-218, pp. 37–38] and HIA Section 6.9 [APP-195, p. 204], which notes:

”The A303 runs directly to the south of the group, with the A360 directly to the west. The south-west end of the long barrow (NHLE 1011841) is less than 20m from the crossroads of these routes. Other monuments within the group are also immediately adjacent to the A360, notably those scheduled as NHLE 1011842, 1011843 and 1011047 and the more westerly elements of 1012368. In physical terms, these roads sever the group from the landscape to the south

and west, dividing the monuments from others – most notably the Diamond Group (AG13), including scheduled barrow (NHLE 1011045), which shares the alignment of the long barrow and may therefore be an outlier of the Winterbourne Stoke Crossroads group. The visual impact of the roads and their traffic, and traffic noise and emissions, greatly impact upon the quality of the present setting. The monuments all exist within this environment, leaving little sense of place. Views of the long barrow in particular are heavily compromised by the sight and sound of traffic, for example when seen from land to the south of the A303. Longer-distance sightlines, both outwards from, and towards Winterbourne Stoke Crossroads, are all dominated by the road and its traffic. The existing A303 disrupts inter-visibility with the Diamond Group (AG13), the Normanton Down Barrows (AG19) and the Lake Barrows (AG16) to the south. The group currently experiences setting impacts from the rat-running traffic along the B3086 and the A360, which runs through the Asset Group, as well as Stonehenge Visitor Centre traffic including large buses. The group currently experiences setting impacts from high traffic volumes and stationary traffic queuing for the Longbarrow Roundabout. The impact of the existing A303 is assessed as Moderate. The effect of the existing A303 on the OUV of the WHS is assessed as Large Adverse.”

Scheme impacts on causewayed enclosures, long barrows (including short long barrows and oval barrows) and cursuses, and inter-relationships between these typological monument groups, is assessed in the HIA section on Typological groupings in the Stonehenge landscape [APP-195, paras. 6-9.39 –47. HIA paras. 6.9.44-47 address the relationships of the long barrows with each other and with the landscape. The impacts of the Scheme on the relationships between the long barrows is further considered in HIA section 9.3, Potential impacts and effects of Scheme: aspects of OUV. This assesses that:

“The Scheme would remove the sight and sound of traffic on the existing A303. Whilst the Scheme has been designed to reduce the visual intrusion of the cutting within the landscape, the new cutting would affect the physical relationships between the long barrows in the western part of the WHS. The proposed Green Bridge Four (the

long landbridge) would help to reduce the severance due to the cutting and would maintain physical landscape connectivity in this area, being specifically placed to ensure that the relationships are maintained between the upstanding long barrows in the Winterbourne Stoke Crossroads Barrows (AG12) and the Diamond Group (AG13).

Taking account of the Very High value of the long barrows and in accordance with Table 5, and contrasting the varying effects on the relevant Asset Groups (AG12, AG13, AG16 and AG19 above – see Table 11), the change is considered to be both Moderate Negative and Minor Positive on the group of long barrows in the western part of the WHS. The overall significance of effect of the Scheme on the long barrows in the western part of the WHS is assessed as Slight Adverse (derived from both Moderate Negative and Minor Positive change on Very High value assets.) [APP-195, paras 9.3.2 – 9.3.3].

Attributes of setting of the **Winterbourne Stoke Crossroads Barrows (AG12)**, including key views, are set out in HIA Section 6.9 [APP-195, pp. 199-200] and the Cultural Heritage Setting Assessment [APP-218, pp. 37-38]. A photomontage illustrates the view from Winterbourne Stoke Crossroads Barrows long barrow NHLE 1011841 [APP-218, Figure 4] and a 360 degree CGI image View from barrow NHLE 1012368 [APP-218, Figure 5]. The Applicant's Assessment of impact of Scheme, including the impact of the Western Portal and Longbarrow Junction, on the fabric and setting of the Winterbourne Stoke Crossroads Barrows (AG12) and its relationship with other Asset Groups, is addressed in HIA [APP-195, pp. 204–207]. The assessment concludes that:

“The Scheme would remove the A303 from the immediate environs of the Winterbourne Stoke Crossroads Barrows. It is assessed that this would have a Very Large Beneficial Effect. However, the new cutting would affect the setting of the Asset Group, reducing some of the benefit of the Scheme for this Asset Group. This is assessed as a Moderate Adverse effect. Taking account of the Very High value of the Asset Group and in accordance with Table 5, and combining the Moderate Adverse and Very Large Beneficial Effect effects on setting, the overall significance of effect of the Scheme on the AG12 Winterbourne Stoke Crossroads Group is assessed overall as

		<p>Moderate Beneficial (derived from both Minor Negative Change and Major Positive Change to a Very High value asset)" [APP-195, p. 207, Significance of effect].</p> <p>HIA Section 11, Evaluation of overall impact and significance of effect of Scheme on the OUV of the WHS, considers the impact and effect of elements of the Scheme on Attributes of OUV, Integrity or Authenticity, including the western approach road [APP-195, paras. 11.1.13–17], the Western Portal [APP-195, paras. 11.1.18–19], and Longbarrow Junction [APP-195, paras. 11.1.26–27].</p>
34.1.7	<p>13. The evidence of Professor Parker-Pearson and Paul Garwood which has not been countered by HE demonstrates that the sites of both the western and eastern portals make a significant contribution to the OUV of the WHS.</p>	<p>See Highways England's responses to 34.1.2 and 34.1.4 above. It is not correct that the remains 'make a significant contribution to the OUV of the WHS' such that the OUV of the WHS would be lost by the removal of these remains. This is especially the case as the Scheme design has minimised the loss of archaeological remains by adopting a design ethos that has reduced landtake within the WHS. The remains concerned comprise predominantly the waste products of flint preparation, and a small component identifiable to type that provides a chronological framework for their deposition. In our submission, the therefore limited value of the remains means that they can not be said to make such a significant contribution.</p>
34.1.8	<p>14. This evidence therefore fundamentally undermines a number of material conclusions within the HIA. The HIA relies upon the assertion that the 'scheme has been developed to avoid known concentrations of archaeological remains that make a significant contribution to the OUV of the WHS' in order to downplay the harm to the attributes of OUV (comment in relation to attribute 2 on p23).</p>	<p>See Highways England's responses to 34.1.2, 34.1.4 and 34.1.7 above. It is not correct to state in light of those responses that material conclusions in the HIA are undermined.</p> <p>The Applicant considers that the HIA has been carried out accurately, in compliance with ICOMOS guidelines and with a full appreciation and understanding of the importance of the WHS and its OUV, including the Integrity, Authenticity and the attributes that convey OUV. The Applicant does not accept that the HIA in any way attempts to "downplay" its assessment of potential harm to the attributes of OUV. The Scheme avoids known funerary and ceremonial monuments and has been designed to minimise landtake and the loss of archaeological remains within the WHS.</p>

34.1.9	<p>15.a. The HIA's conclusions relating to the following criteria are now unsafe:</p> <p>a. Criterion 2: 'The physical remains of the Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to the landscape' – conclusion of only a slight adverse impact heavily based upon assertion that the portals 'avoid known concentrations of archaeological remains that make a significant contribution to the OUV of the WHS'; the western portal evaluations do 'not appear to indicate substantive funerary, ceremonial or settlement activity in this location' (see pp23 and 24)</p>	<p>See Highways England's responses to 34.1.2, 34.1.3, 34.1.4 and 34.1.7 above. The evidence from the evaluation of the Western portal suggests that some of this material may potentially be related to Beaker occupation [REP3-024]. The suggestion of a 'large settlement' is not demonstrated by the evidence from the evaluation and even if it was, any such settlement would lie outside the Scheme boundary. Similarly, the suggestion of a zone of funerary activity within the Scheme boundary is not demonstrated by the evidence from the evaluation of the eastern portal and its approaches.</p> <p>The Scheme design has minimised the loss of archaeological remains by adopting a design ethos that has reduced landtake within the WHS. The remains that would be impacted do not 'make a significant contribution to the OUV of the WHS' such that the OUV of the WHS would be lost by their removal. A comprehensive programme of archaeological excavation and recording, including further recovery of artefacts from the topsoil in accordance with an intelligent sampling strategy, is proposed in the draft DAMS, an updated version of which will be submitted at Deadline 6.</p> <p>The Applicant therefore considers that the conclusion reached in the HIA in respect of Attribute 2 of OUV is robust, based on the archaeological evidence from the evaluations.</p>
34.1.10	<p>15.b. Criterion 6: 'The disposition, physical remains and settings of the key Neolithic and Bronze Age funerary, ceremonial and other monuments and sites of the period, which together form a landscape without parallel' – conclusion of slight beneficial effect based upon the fact that the scheme 'has been designed to avoid major known concentrations of archaeological remains that contribute to the OUV of the WHS' (p.28);</p>	<p>The Applicant considers that the HIA has been carried out accurately, in compliance with ICOMOS guidelines and with a full appreciation and understanding of the importance of the WHS and its OUV, including the Integrity, Authenticity and the Attributes that convey OUV.</p> <p>The Applicant further considers that the conclusion of a slight beneficial effect on this attribute is robust. This conclusion has been reached by balancing various elements of the Scheme: the fact that the Scheme has been designed to avoid major known concentrations of archaeological remains that contribute to the OUV of the WHS, against the identified adverse effects on the setting of some assets and Asset Groups. According to the detailed assessment as set out in the HIA, the beneficial effects are considered to slightly outweigh the adverse effects of the Scheme in terms of this Attribute [APP-195, p 28].</p>

34.1.11	<p>15.c. Integrity: the HIA has failed to take into account the permanent loss of the significant archaeological remains at the western and eastern portals; the conclusion of ‘slight beneficial’ effect cannot be relied upon (p30);</p>	<p>See Highways England’s response to 34.1.7. The Applicant does not accept that the Scheme assessment has failed to consider any element of the effects of the Scheme on the integrity of the WHS. Furthermore, the Applicant considers that the HIA has been carried out accurately in compliance with ICOMOS guidelines and with a full appreciation and understanding of the importance of the WHS and its OUV including the Integrity, Authenticity and the Attributes that convey OUV. The Scheme avoids known funerary and ceremonial monuments and has been designed to minimise landtake and the loss of archaeological remains within the WHS. The loss of archaeological remains has been taken into account in arriving at the assessment of harm to the attributes of OUV.</p> <p>With regard to integrity, ‘Integrity is a measure of the completeness or intactness of the attributes that convey Outstanding Universal Value’ (UNESCO, ICCROM, ICOMOS and IUCN 2011 Preparing World Heritage Nominations. World Heritage Resource Manual. 2nd ed., 65-67). The Statement of OUV notes in respect of integrity states, ‘The boundaries of the property capture the Attributes that together convey Outstanding Universal Value at Stonehenge and Avebury. They contain the major Neolithic and Bronze Age monuments that exemplify the creative genius and technological skills for which the property is inscribed. The Avebury and Stonehenge landscapes are extensive, both being around 25 square kilometres, and capture the relationship between the monuments as well as their landscape setting. [...] The survival of the Neolithic and Bronze Age monuments at both Stonehenge and Avebury is exceptional and remarkable given their age – they were built and used between around 3700 and 1600 BC. Stone and earth monuments retain their original design and materials. The timber structures have disappeared but postholes indicate their location. Monuments have been regularly maintained and repaired as necessary. The presence of busy main roads going through the World Heritage property impacts adversely on its integrity.’</p> <p>It is plain that the test of integrity in relation to the WHS relates to the completeness of the attributes that convey OUV, in terms of the adequacy of the boundary of the WHS, and to the intactness of the attributes. In respect of intactness as an aspect of integrity, the remains do not ‘make a significant contribution to the OUV of the WHS’ such that the integrity of the WHS would</p>
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		<p>be diminished by the removal of these remains. The HIA [APP_195] sets out the impacts and effects of the Scheme on the Integrity of the WHS [paragraphs 9.4.41-9.4.45 and 11.2.9-11.2.10], noting that there are a mixture of positive and negative changes as a result of the Scheme, but concluding overall that <i>'it is anticipated that the Scheme would have a Negligible Positive impact on the Integrity of the WHS, resulting in a Slight Beneficial effect.'</i></p>
34.1.12	<p>15.d. Authenticity: the HIA has failed to take into account the permanent loss of significant archaeological remains at the western and eastern portals and also the disruption of the spatial and visual relationship between the barrow groups surrounding Stonehenge (pp30-31)</p>	<p>See Highways England's response to 34.1.6 and 34.1.7 above. The Applicant does not accept that the Scheme assessment has failed to consider any element of the effects of the Scheme on the Authenticity of the WHS. Furthermore, the Applicant considers that the HIA has been carried out accurately in compliance with ICOMOS guidelines and with a full appreciation and understanding of the importance of the WHS and its OUV including the Integrity, Authenticity and the Attributes that convey OUV. The loss of archaeological remains has been taken into account in arriving at the assessment of harm to the attributes of OUV and the authenticity of the WHS. The spatial and visual relationship between barrow groups is also considered in the assessment of effects on the authenticity of the WHS [APP195, paragraphs 9.4.46-9.4.50]. Paragraph 9.4.47 of APP-195 states: "In terms of the form and design of assets and the inter-relationships between those assets, the Scheme avoids physical impacts on major assets associated with the OUV of the WHS where possible and as presently known. Archaeological excavation of the footprint of the western tunnel approach road would be undertaken following the results of the archaeological evaluation. The Scheme would have a mixture of positive and negative impacts on the design relationships between assets: it would therefore both strengthen and degrade this aspect of Authenticity" and paragraph 9.4.50: "Overall, it is anticipated that the Scheme would have a Negligible Positive impact on the Authenticity of the WHS, resulting in a Slight Beneficial effect".</p>
34.1.13	<p>16. With regard to impacts upon other aspects of the WHS, the undervaluing of the archaeological remains at the western and eastern portals means that the conclusion that the effects on</p>	<p>See Highways England's responses to 34.1.2, 34.1.4 and 34.1.7 above. The Applicant rejects that the archaeological remains at the western and eastern portals have been undervalued to any degree, and considers that the conclusions reached in the ES are robust and can be relied upon.</p>

	archaeological remains within the scheme's footprint as 'neutral to moderately adverse' cannot be relied upon.	
34.1.14	17. When considering the harm caused by the scheme it is necessary to consider the loss to this generation and to those of the future who will almost certainly have available to them advanced archaeological techniques which will be able to answer questions which today's researchers haven't even considered asking.	Future research potential is addressed in the post-hearing note included in the Applicant's written summary of oral submissions made in relation to agenda item 6 at ISH2 regarding ES Chapter 6 [REP4-030]. This notes that <i>"It is an unpersuasive position to assert that the Scheme should be prevented from being progressed in the face of a speculative argument that future technology may discover more information in this area of the WHS. This is particularly the case having regard to the technology which is already available now, the 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."</i>
34.1.15	18. Further, as Professor Parker-Pearson stated, 'settings are experienced but settings depend on the assets themselves' . At Part 3 of this written summary the consortium has provided its legal submissions with regard to the lawfulness, under the World Heritage Convention, of balancing benefit to the setting/experience of part of the WHS with destruction of physical assets in other parts . Quite apart from the operation of the convention and even if those submissions are not accepted, the HIA's approach is clearly illogical. To elevate purported enhancements to the setting of parts of the WHS and to enable this to counterbalance physical destruction is inappropriate . The physical destruction is permanent. The improvements to settings/experience could come forward as part of an alternative scheme in the near future	See Highways England's written summary of its oral submissions from ISH 2 [REP4-030], item 3 (vi) with regards to Highways England's approach to balancing. Please also see Highways England's response below to Part 3 of the Consortium of Archaeologists' submission. In accordance with the ICOMOS HIA guidance, both positive and negative impacts are considered against attributes of OUV, integrity and authenticity and a judgment arrived at on the overall significance of effect. The Scheme has been designed to avoid assets that contribute significantly to the OUV of the WHS. The Applicant's position on the value of the remains at the western and eastern portals is set out in its responses to 34.1.2, 34.1.4 and 34.1.7 above.

	<p>or through alternative measures in the more distant future. It is clear that on no basis can improvements to settings/experience be seen as carrying anywhere near as much weight as permanent harm by physical destruction.</p>	
34.1.16	<p>19. When the impacts of the eastern and western portals are properly understood there can be no doubt that the scheme will:</p> <ul style="list-style-type: none"> (a) cause significant harm to the WHS in breach of the WHC, (b) cause significant harm to the WHS in breach of paragraph 5.131 NPS, (c) result in adverse impact to the WHS and its attributes of OUV in breach of policy 1d of the management plan, (d) fail to manage the WHS to protect the physical remains which contribute to its attributes of OUV and improve their condition in breach of policy 3a of the management plan, (e) fail to maintain and enhance the setting of monuments and sites in the landscape and their interrelationships, in breach policy 3c of the management plan, (f) fail to reduce significantly the negative impacts of roads and traffic on the WHS and its attributes of OUV in breach of policy 6a of the management plan, (g) fail to encourage sustainable archaeological research of the highest quality in the WHS in breach of policy 7a of the management plan. 	<p>The Applicant rejects this comment, both in terms of the assertion that the impacts of the Scheme on the eastern and western portals are not properly understood by the Applicant, and in terms of the breaches and harm listed in the comment. We respond to each of these assertions in turn:</p> <ul style="list-style-type: none"> (a) the Scheme will cause significant harm to the WHS in breach of the World Heritage Convention (WHC): <p>The Applicant does not accept that the Scheme will cause significant harm to the WHS; it has found no evidence to support this assertion as has been robustly set out in the Scheme documentation, including Chapter 6 of the Environmental Statement, [APP-044], the Assessment of Effects [APP-054] and the Heritage Impact Assessment [APP-195]. A comprehensive 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.</p> <p>The Scheme will not put the UK in breach of its obligations under the WHC. In this respect, the Applicant directs the Examining Authority to the detailed response explaining compliance with the WHC that is set out at the Applicant's response to the Examining Authority's Written Question G.1.1 [REP2-021, pp.1-2 to 1-5]</p> <p>We would also refer to the Applicant's Written Summaries of oral submissions at Cultural Heritage Issue Specific Hearings (ISH2) [REP4-030], submitted at Deadline 4, specifically Section 3(i), Policy and Guidance: ICOMOS/ UNESCO; 3(v) Emerging reports, policy, and guidance; 3(vi) discussion of the principles of an overall balance of harm against benefit and whether all adverse impact on OUV should be avoided, whatever the benefit, and Appendix A to that document, as well as the Applicant's response to Part 3 below of the Consortium of Archaeologists' submission.</p>

- (b) The Scheme would not breach paragraph 5.131 of the NPSNN. For further detail regarding the Scheme's compliance with the NPSNN requirements is demonstrated in the NPSNN Accordance Table in Appendix A of the Case for the Scheme and NPS Accordance [APP-294]: the Scheme is not assessed to cause substantial harm to heritage assets, and where there is less than substantial harm expected, those instances are considered to be outweighed by the Scheme benefits.
- (c) With regard to the WHS Management Plan 2015 Policy 1d - Development which would impact adversely on the WHS, its setting and its attributes of OUV should not be permitted, the HIA [APP-195] states at paragraph 12.3.4 that '*The Scheme design has been developed in line with Policies 1d and 1e to avoid and minimise adverse impacts on the OUV of the WHS; to maximise opportunities for enhancement, in particular with respect to accessibility; and to minimise light pollution relating to the A303 Scheme and car head and tail lights*' - for measures embedded within the Scheme design that contribute to this see Section 8.2 and Table 9 [APP-195].
- (d) Regarding the suggested failure to manage the WHS to protect the physical remains which contribute to its attributes of OUV and improve their condition in breach of policy 3a of the management plan, Policy 3a is concerned with Conservation with regards to the condition of monuments within the WHS and monument management. The Scheme design has avoided monuments and monument groups that contribute to the OUV of the WHS and, as stated in the HIA [APP-195, paragraph 12.3.5], '*The Scheme seeks to protect and enhance the WHS and its Attributes of OUV through removal of the existing surface A303 and placing the road in a tunnel over 3km of its length, and through relocation of the Longbarrow Junction outside the WHS, in line with Policies 3a, 3c and 3d.*'
- (e) With regard to the settings of monuments and sites, the Scheme has been designed to conceal the road to the maximum extent possible and to minimise impacts in key views agreed with HMAG.

The Scheme will contribute to Policies 3a and 3c through the removal of the existing surface A303, which is situated immediately adjacent to and bisects monuments and monument groups that contribute to the OUV of the WHS, placing the road in a tunnel over 3km of its length, and through relocation of the Longbarrow Junction outside the WHS – the current roundabout being situated adjacent to the Winterbourne Stoke Crossroads Barrows.

- (f) With regard to the suggested failure to reduce significantly the negative impacts of roads and traffic on the WHS and its attributes of OUV in breach of policy 6a of the management plan, the Scheme would substantially reduce these in line with Policy 6a through removal of trunk road traffic from much of the landscape and downgrading of the existing A303.
- (g) Regarding the suggested failure to encourage sustainable archaeological research of the highest quality in the WHS in breach of policy 7a of the management plan: The Scheme supports the development of scientific and technical studies and research regarding the UK's cultural heritage. The development consent application for the Scheme is accompanied by an unprecedented level of detail of investigation of the area of the WHS covered by the Scheme in accordance with an archaeological evaluation strategy developed in consultation with HMAG and with input from the Scientific Committee. This has comprised up-to-date geophysical survey of the full red line boundary, ploughzone artefact sampling across all areas evaluated, and trial trenching, building on and augmenting the results of more than 25 years of previous investigations in connection with the A303, and taking into account the emerging results of academic research programmes undertaken over the last decade.

A comprehensive programme of archaeological evaluation has been undertaken, reflecting the sensitivity of the archaeology and its context. As a result, uncertainty as to the likely archaeological findings of the archaeological mitigation works, that will be undertaken at the preliminary works phase prior to construction, has been substantially removed. In addition, the majority of archaeological works are being undertaken in the

Preliminary Works phase to mitigate against the risk of unforeseen finds being located within the Main Works. Archaeological remains would be excavated and recorded during the Preliminary Works phase, in advance of construction, to avoid, as far as is practicable, previously unknown archaeological remains being uncovered during construction.

The updated draft Detailed Archaeological Mitigation Strategy (DAMS) submitted at Deadline 4 [REP4-024] sets out the structured, iterative detailed archaeological mitigation strategy. The DAMS aims 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.

The updated draft DAMS [REP4-024] sets out an Archaeological Research Strategy which notes that “The archaeological investigations will be conducted with full consideration of the Research Framework for the Stonehenge and Avebury and Associated Sites WHS (‘SAARF’, Leivers and Powell, 2016)” ... “The DAMS presents an Archaeological Research Strategy (ARS). The archaeological evidence identified by the archaeological evaluation programme for the Scheme as completed to date, together with evidence of baseline conditions as set out in the ES [APP-044], are considered and relevant SAARF research themes and period-specific research questions are identified. The research themes and questions proposed here will be reviewed and updated during preparation of SSWSIs, during fieldwork and during preparation of the post-excavation assessment report.” [REP4-024, paras. 3.1.1 - 3.1.2]. The DAMS acknowledges the potential presented by the archive for future academic research independent of the Scheme (see REP4-024, section 8.2, Outline Publication and Dissemination Proposals).

In terms of maximising the public benefit of research, we would refer the Consortium to the Applicant’s comments [REP3-013] on the Stonehenge and Avebury WHS Written Representation [REP2-139] regarding the detailed archaeological and heritage outreach and education programme within the DAMS. The draft Public Archaeology and Community Engagement Strategy is set out in Appendix E of the draft Detailed Archaeological Mitigation Strategy (DAMS), submitted at Deadline 4 [REP4-024].

As noted in the Applicant's comments [REP3-013] on the Council for British Archaeology's Written Representation [REP2-070], "The assessment has considered the requirement to contribute to the understanding of and the presentation and transmittal to future generations of the cultural heritage of the WHS. The Applicant has identified in detail the extensive problems that are currently caused or exacerbated by the existing A303, and has further identified why the Scheme is vital in addressing those problems to the benefit of the region including the WHS itself. 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 comprehensiveness of the assessment undertaken and the mitigation measures in place in the Detailed Archaeological Mitigation Strategy (DAMS) [REP4-024]. 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." [REP3-013, para. 21.4.4].

"[...] The Applicant considers that the HIA has been carried out accurately and with a full appreciation and understanding of the importance of the WHS and its OUV (including the contribution from archaeological remains). As a result, the Applicant does not accept that the harm to the OUV of the WHS has been underestimated." [REP3-013, para. 21.4.5].

"The mitigation measures proposed in the DAMS take an appropriately precautionary approach, having full regard to the results of the assessments undertaken in the ES and the HIA, and informed by a comprehensive programme of archaeological evaluation surveys." [REP3-013, para. 21.4.6]

"The Scheme supports the development of scientific and technical studies and research regarding the UK's cultural heritage. The development consent application for the Scheme is accompanied by what is, in terms of major highways projects, an unprecedented level of detail of investigation in

		<p>accordance with an archaeological evaluation strategy developed in consultation with HMAG and with input from the Scientific Committee. This has comprised up-to-date geophysical survey of the full red line boundary, ploughzone artefact sampling across all areas evaluated, and trial trenching to augment the previous work to achieve an overall sample of up to 5% by area outside of the WHS and up to 10% by area within the WHS, and taking into account the emerging results of academic research programmes undertaken over the last decade. Indeed, the draft DAMS [REP4-024] requires that scientific and technical studies and research into the results of those investigations will continue for years to come (see section 8.2, Outline Publication & Dissemination Proposals of the DAMS)." [REP3-013, para. 21.4.7].</p>
<p>34.1.17</p>	<p>c. Position of Historic England and the National Trust in relation to the DAMS</p> <p>20. Professor Parker-Pearson and Paul Garwood on behalf of the Consortium highlighted that academic research within the WHS had been held to standards of 100% recovery and that this had been insisted upon by both Historic England and the National Trust. This was not denied by those bodies.</p> <p>21. No credible reason has been given for Historic England and the National Trust not insisting on the same standards of Highways England. As the Council for British Archaeology stated, this is 'topsy turvey' where we are considering a major project which will permanently destroy significant amounts of material and which is not being required to work to the 100% standard.</p>	<p>Whilst the Applicant recognises that it is for the National Trust and Historic England to comment on the percentage recovery they would wish to see, the Applicant notes that at the Issue Specific Hearing 2, neither the National Trust nor Historic England insisted upon 100% recovery in all circumstances. We refer the Examining Authority to the Applicant's written summary of its oral submissions made at ISH 2, item 7 (i and ii) [REP4-030], where the National Trust and Historic England's positions were recorded:</p> <ul style="list-style-type: none"> - The National Trust supported a 100% sampling strategy for the excavation and recording of human made archaeological features. With respect to plough zone assemblage, the National Trust supports an intelligent mitigation sampling strategy for artefact scatters – not 100% sampling. - Historic England noted that their approach had been to ensure that the mitigation strategy is research-led, and is moving toward a more intelligent led 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>From the Applicant's perspective, the archaeological work undertaken specifically for the preparation of the Environmental Statement, to date, included a gridded test pit sample of 1% of the surface area of the evaluation area in the WHS, on the recommendation of the Scientific Committee. In terms of future strategy to be provided for in the Detailed Archaeological</p>

		<p>Mitigation Strategy (DAMS) we note that the DAMS continues to be revised and is being developed in consultation with Historic England, Wiltshire Council and other members of HMAG, including the National Trust: these bodies will also monitor the implementation of the DAMS. A revised version of the DAMS is being submitted at Deadline 6 of this Examination.</p>
34.1.18	<p>d. Missing information</p> <p>22. The consortium has requested the following information:</p> <p>a. exact numbers of finds/lithics discovered in the trial trenching in the areas of the western and eastern portals;</p> <p>b. the exact area which will be archaeologically sterilised as part of the scheme including under roads, cuttings, haulage roads, works areas etc.</p>	<p>The detailed evaluation reports submitted at deadline 1 contain a breakdown of all finds recovered: these can be found in the tables at section 10 of each report. In the western portal, 8,371 pieces were recovered, included in this total are 101 (1.16% of the total) retouched tools [REP1-045, p. 54-55, Table 10-2]. In the eastern portal, 1,932 pieces were recovered, of which 28 pieces were from retouched tools (1.45%) [REP1-048, p. 55, Table 10-3].</p> <p>The exact area of the Scheme within which archaeological remains will be either removed or permanently buried is 166 hectares. This comprises 100 hectares over which topsoil will be removed (including in areas of landscape fill of more than 2 m thickness), plus 66 hectares where topsoil will be retained in situ but permanently buried under landscape fill of less than 2 m in thickness. A further 98 hectares will be temporarily covered during the works.</p> <p>In our ISH 2 summary, we noted that approximately 170 hectares of land across the Scheme was included in the D2 DAMS, of which 105 hectares was 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. These figures were correct at the time the summary was prepared, but did not include working areas where topsoil will be retained in situ and temporarily covered, nor areas where the D2 DAMS did not propose any mitigation. Since the summary was prepared, the DAMS has continued to be developed in consultation with HMAG and the Scientific Committee and the areas proposed for mitigation have developed accordingly.</p>
34.1.19	<p>Part 2 – Summary of evidence and submissions:</p> <p>a) Inadequacy of survey techniques and information – evidence of Paul Garwood and Professor Parker-Pearson</p>	<p>1. The Applicant does not agree that the survey techniques used in the preparation of the Scheme application were inadequate or deficient in any respect. The Applicant notes that the Archaeological Evaluation</p>

1. Paul Garwood highlighted that the only major geophysical technique which has been used extensively by HE to survey the WHS is magnetometry. He emphasised that one of the main outcomes of all of the major very large scale geophysical survey projects in the Stonehenge landscape shows that magnetometry gives only one picture of what is beneath the surface. It doesn't take account of all kinds of data which one can extract. He highlighted that one could and should use ground penetrating radar, electrical conductivity, electromagnetic induction. All magnetic data will tell you is what is and is not magnetic but what the EMI project has demonstrated is that there are a host of features which can be seen in electrical conductivity data which are invisible in magnetic data.
2. Paul Garwood further emphasised that with regards to sampling regimes a report by Hay and Lacey stated that a 2-4% sampling regime (as used by HE) does not work as a means of being assured of finding early prehistoric and early medieval sites. The report's recommendation was 10% sampling in order to have a chance of identifying the full range of all periods. He stated that the level of sampling which has been done is no serious basis for judging exactly what is there and that he was not confident that we have a firm and convincing picture of areas of impact.
3. Mike Parker-Pearson agreed with Paul Garwood further stating that he was disappointed to see that trial trenching had gone ahead before they had been sampled with two different sieve measures, which had removed the possibility of working out densities.
4. It was concerning that when asked HE was not able to give the total area of the WHS which as a result of the scheme would be archaeologically sterilised (on 5 June).

Strategy Report and its accompanying Overarching Written Scheme of Investigation (including proposals for extensive geophysical surveys) were approved by the Heritage Monitoring and Advisory Group (HMAG) with the benefit of input from the Scientific Committee (which included a geophysical survey expert and member of the Stonehenge Hidden Landscapes Projects, Professor Vince Gaffney).

The full Scheme boundary has been covered by non-intrusive archaeological geophysical survey, which includes the detailed magnetometry surveys as noted by Mr Paul Garwood, as well as multi-channel ground penetrating radar (GPR) surveying across the area of the western approach cutting. In addition, targeted earth resistance and GPR surveying has been carried out as part of the survey programme of areas outside the WHS boundary. These elements, along with the results of historic surveys, have allowed for a robust assessment of likely impacts. The Applicant responded to this point as recorded in its written summary of oral submissions made at ISH2 [REP4-030], agenda item 5(1) & (ii).

2. The sampling undertaken to date has been consulted upon and agreed by the relevant heritage bodies, and provides a sufficient basis for this assessment. The Applicant notes its previous response to the CBA's Written Representation [REP3-013, paragraph 21.4.30] which confirms:

"The trial trench sample investigated was agreed with HMAG taking into account the sample previously investigated in connection with earlier iterations of the A303 improvement proposals. The target sample strategy applied sought to augment the previous trial trenching to achieve an overall sample of up to 5% by area within the WHS and up to 10% by area outside of the WHS. These parameters were set out in the Archaeological Evaluation Strategy Report (AESR) developed with input from the Scientific Committee and approved by HMAG."

3. See Highways England's written summary of oral submissions made at ISH2 on cultural heritage [REP4-030] agenda item 5 (i) and (ii) regarding trial trenching going ahead before sampling with two

		<p>different sieve measures. Here, the Applicant explains that this occurred only in one area where trial trenching was undertaken prior to topsoil sampling, at a pig field. This was due to health and safety reasons as pig dung was present in the area.</p> <p>4. As noted in response R above, the exact area of the Scheme within which archaeological remains will be either removed or permanently buried is 166 hectares. A further 98 hectares will be temporarily covered during the works.</p>
34.1.20	<p>b) Evidence of Professor Parker-Pearson with regard to the significance of the areas of the proposed eastern and western approaches and portals and the DAMS</p> <p>5. The Panel's attention is drawn to Professor Parker Pearson's CV. His specialist expertise with regard to the Stonehenge WHS, and in particular the Neolithic and Bronze Age archaeology, is not contested and indeed is undeniable. Further, his analysis and conclusions were not disputed by HE; his analysis must therefore be given full weight. The following is a summary of his evidence. This goes to both the principle of the development and the DAMS. The evidence was given in presentations on both 5 and 6 June and should be read together with his slide deck.</p>	<p>Highways England respects Professor Parker Pearson's evidence however disputes that his views are demonstrated or supported by the evidence from the evaluations. To confirm, his conclusions are therefore disputed by Highways England.</p> <p>We refer the Examining Authority to our response to item 34.1.3 above for a full explanation setting out how Professor Parker Pearson's conclusions are not supported by the evaluations.</p>
34.1.21	<p>6. Settings are experienced but settings depend upon the survival of the remains themselves and therefore the proposal has to be viewed in that context.</p>	<p>The Scheme has been designed to avoid major known concentrations of archaeological remains that contribute to the OUV of the WHS. See also Highways England's responses to 34.1.10 and 34.1.15 above.</p>
34.1.22	<p>7. What has been seen in the last decade or so is heavy development outside of the boundaries of the WHS, hundreds of hectares, this has led to some remarkable discoveries but large areas have been sterilised. This puts more pressure on areas within the WHS. It is necessary to protect those because we are losing so much in the hinterland around.</p>	<p>Highways England disagrees with this assertion.</p> <p>It is through the planning system that changes to buildings and land in England is managed. The planning system guides decisions on proposed changes to historic buildings and places, including those which are protected. Decisions regarding commercial / residential developments and the army rebasing programme, to the north and east of the WHS, and whether these should be granted planning permission or not are a matter for Wiltshire Council, and in relation to designated heritage assets of the highest</p>

		<p>significance (such as the WHS), Historic England will provide their advice to the Local Planning Authority. These developments are granted planning permission with archaeological planning conditions that require archaeological mitigation in advance of construction. The sites are therefore not ‘sterilised’ but are archaeologically recorded to high standards in advance of construction. That material, once published, is then available for re-analysis, re-interrogation and re-interpretation once the archive has been assembled and deposited with a Museum.</p> <p>With regards to the WHS, the ICOMOS 2011 guidance to Heritage Impact Assessment similarly states at paragraph 6-2 that ‘<i>Conservation is about managing sustainable change</i>’.</p>
<p>34.1.23</p>	<p>8. The main areas of damage within the scheme are the Eastern and Western approaches within the WHS. It is estimated that somewhere around 10ha will be archaeologically sterilised. Thanks to the investigations relating to this scheme we now know that the initial statement that there are few remains in those areas are no longer correct. Many remains will be affected. We have learned, especially from the artefacts in the plough soil and their sheer quantity, is that there is a richness and significance of cultural aspects in E and W approaches. Standard mitigation strategy is to ensure as full a recovery as possible. Preservation by record. So that although the land is sterilised we come away with records of what was there and artefacts which have been recovered. We allow destruction by excavation.</p>	<p>See Highways England’s responses to 34.1.2, 34.1.3, 34.1.4 and 34.1.7 above. The evidence from the evaluation of the Western portal suggests that some of this material may potentially be related to Beaker occupation [REP3-024]. The suggestion of a ‘large settlement’ is not demonstrated by the evidence from the evaluation and any such settlement lies outside the Scheme boundary. Similarly, the suggestion of a zone of funerary activity within the Scheme boundary is not demonstrated by the evidence from the evaluation of the eastern portal and its approaches.</p> <p>The Scheme design has minimised the loss of archaeological remains by adopting a design ethos that has reduced landtake within the WHS. The remains do not ‘make a significant contribution to the OUV of the WHS’ such that the integrity of the WHS would be diminished by the removal of these remains. A comprehensive programme of archaeological excavation and recording, including further recovery of artefacts from the topsoil in accordance with an intelligent sampling strategy, is proposed in the draft DAMS, an updated version of which will be submitted at Deadline 6.</p> <p>In terms of the reference to 10ha within the WHS, as per the post hearing note included in the Applicant’s written summary of the oral submissions from ISH2 [REP4-030], within the WHS, the footprint of the Scheme would affect approximately 7.3 hectares.</p>

34.1.24	<p>11. What we have learned with regards to the Western approach , with the discovery of two new longbarrows, is there is a remarkable concentration of monuments from before the construction of Stonehenge, possibly 5-600 years earlier than the first stage at Stonehenge. This is the densest concentration of Neolithic longbarrows anywhere in Britain.</p> <p>12. Further, rather than these being placed at random, they are forming some kind of circle sitting around top of a dry valley which the western approach would be going through. They are built as a collectivity. That potentially enhances their integrity as a group. What it is that they are encircling within the valley, we don't know. It may just be natural features in the landscape (we know Neolithic societies did this). It may be series of deep solution shafts. I am unhappy about the prospect that this group might be severed by western approach. It damages the complex's integrity as well as associated remains.</p>	<p>The Applicant notes that the 'two new longbarrows' referred to are located outside of the red line boundary: they were identified during evaluation work in connection with the 2017 consultation options: the preferred route was selected to avoid these monuments.</p> <p>The HIA identifies the longbarrows that form the grouping discussed by Professor Parker Pearson [APP-195, p. 445-449] and considers the effects of the Scheme on the longbarrows both as part of asset groups (in combination with later, Bronze Age round barrows) and in terms of their relationships to each other and to the landscape [APP-195, p. 570]: The longbarrow group is currently severed by the existing A303 and the Scheme assessment finds:</p> <p>"The scheme would remove the sight and sound of traffic on the existing A303. Whilst the Scheme has been designed to reduce the visual intrusion of the cutting within the landscape, the new cutting would affect the physical relationships between the long barrows in the western part of the WHS. The proposed Green Bridge Four (the long landbridge) would help to reduce the severance due to the cutting and would maintain physical landscape connectivity in this area, being specifically placed to ensure that the relationships are maintained between the upstanding long barrows in the Winterbourne Stoke Crossroads Barrows (AG12) and the Diamond Group (AG13)." [APP-195, para. 9.3.2, p.570].</p>
34.1.25	<p>13. One of the really important results of ploughsoil evaluation is to see we have many thousands of artefacts from both east and west. But the western approach has greater density. We know that from the diagnostic artefacts we have a palimpsest of activity – goes back to Mesolithic, early Neolithic – that is same period as the longbarrows. The period that is most striking in terms of its representation is the transition from Neolithic into early bronze – (copper age) – which saw the arrival of the curiously-named Beaker People in the region of Stonehenge at time of 3rd and 4th phases of construction. What we know from the ploughsoil sampling is that there are some remarkably dense concentrations. This is potentially part of a large and very significant settlement complex within western end.</p>	<p>See Highways England's responses to 34.1.2, 34.1.4 and 34.1.7 above.</p>

34.1.26	<p>14. The eastern end has a lesser density – some of us were happy to see it as not terribly important until the analysis showed that the western part of it contains a large number of lithics from the early Neolithic. This raises important issues particularly because one of the aspects we have discovered from our own sampling (we were 100% sampling topsoil) was that we were seeing entire phases of activity – early Neolithic and Mesolithic - which were only represented in the topsoil. You have to sample at 100%. We were indeed required by the agencies in question – National Trust, English Heritage to carry out that level of 100% sampling.</p>	<p>The Applicant respectfully disagrees with this comment, which it considers is not supported by the evidence obtained from the evaluation works. The Applicant's position is that there is demonstrably a very small element (3%) of the material from the eastern portal evaluation (predominantly from the western end of the area) that dates to the Mesolithic and/or Early to Middle Neolithic. From among the 1,932 pieces of struck flint from the Eastern Portal evaluation, the only categorically Early Neolithic artefacts were two incomplete (broken and/or unfinished) leaf-shaped arrowheads; a very small fragment of the surface of a polished axe; the butt of a small flaked axe or chisel; and an end scraper on a long trimming flake from a blade core. There was in addition a quantity of material appearing to derive from blade-based industries. Blades (including complete and broken examples, and bladelets) were noted among the pieces from 37 locations, 28 of these contained only single pieces; eight contained two pieces; two contained three. Any, all, or none of these 50 pieces could be Early Neolithic in date [REP1-047].</p> <p>Given this, it is not justified to claim that the western (or, indeed, any) part of the Eastern Portal evaluation area contained “a large number of lithics from the early Neolithic”, as asserted by Professor Parker Pearson.</p> <p>In respect of the percentage of the area sampled, the Applicant refers to its response to item 34.1.17 above for further detail. In brief, the archaeological work undertaken specifically for the preparation of the Environmental Statement to date included a gridded test pit sample of 1% of the surface area of the evaluation area in the WHS, on the recommendation of the Scientific Committee.</p>
34.1.27	<p>15. I do not accept HE's assessment that the scheme has been designed to avoid known concentrations of archaeological remains. We are learning from the evaluation that there are known concentrations particularly in the western approach and also the eastern. HE has seriously underestimated the harm caused by the proposal. We now know that the Cultural Value Assessment and the HIA were based on incomplete and flawed information about buried</p>	<p>See response 34.1.8 above with regards to avoiding known concentrations that contribute to the OUV of the WHS and the completeness of the HIA.</p> <p>See our responses to 34.1.2, 34.1.4 and 34.1.7 above regarding ploughzone artefact scatters in the western and eastern portals and OUV.</p>

	remains in the approaches, remains that constitute assets contributing to OUV.	Highways England refutes the suggestion that either the HIA or the contingent valuation of cultural heritage benefits is based on incomplete and flawed information; this has not been demonstrated.
34.1.28	<p>17. We are all familiar with the fact that there is a huge archaeological resource, primarily flints but also worked artefacts, in the WHS ploughsoil. Julian Richards' survey shows us densities, but also shows certain fields with low densities, and indeed from surface collection. More than 90% of remains from Neolithic and early Bronze Age are in the ploughsoil.</p> <p>18. For more than 10 years research excavations have ensured that there is up to 100% retrieval of those finds as part of our investigations. Not simply for the Stonehenge part but also Avebury. Archaeologists researching within the WHS have achieved 100% retrieval by hand-digging and sieving the ploughsoil to recover finds and plot spatial distributions and densities, to reveal how prehistoric people lived and worked in this landscape.</p> <p>19. That is something that has been required by curators from English Heritage and National Trust. My last major intervention here was 10 years ago. In the area we dug which was most comparable to the western approach, we excavated 100 square metres with 100 students for a month. We learned from that there are entire periods, particularly the Neolithic and the period before that – the Mesolithic, represented in the plough soil where there was no remaining evidence beneath it.</p> <p>20. The scientific committee has said there should be equivalent standards from university teams and commercial contractors. What that means is that we pay maximum attention to the ploughsoil within the WHS.</p> <p>21. I am very pleased that contractors did the 1% test pit sample. The difficulty is where we take it from here. If that project is to go ahead, it is no good to do 4%, 10%, 50% or 80%. The reason it is necessary to do 100% is partly because we don't want to be</p>	<p>Regarding points (21 and 22) see Highways England's response as recorded in its written summary of oral submissions made at ISH2 in relation to agenda items 7 (i) and (ii) [REP4-030] regarding the developing sampling strategy for the ploughzone artefact scatters as set-out in the draft DAMS submitted at Deadline 4 [REP4-024] which is being developed in consultation with HMAG and the Scientific Committee. Note that 100% sieving of the ploughsoil within the WHS is currently being discussed by HMAG and the Scientific Committee with a variety of views being expressed.</p> <p>See also Highways England's responses to 34.1.2, 34.1.4 and 34.1.7 above in relation to remains at the western portal.</p>

bulldozing artefacts. On the current draft DAMS and subsequent document prepared on 17 May, if we take the implications of what is in that report we are looking at half a million artefacts being bulldozed without record or recovery by the proposed mitigation strategy within the WHS. That is an unacceptable level of damage to the resource and loss of information about Stonehenge's prehistoric past.

22. The reason that 100% sieving is important is that what is found are largely undiagnostic lithics. Only a tiny proportion constitute tools or artefacts such as axe fragments and arrow heads. Amongst these are diagnostic items. Items we can date to within a particular prehistoric period. The 100% sample gives us some measure of the chronology of an otherwise un-datable scatter.

24. Looking at the Western Approach Flint Distributions plan, which has been made available

– each of the little bubbles represents a certain quantity of lithics.
[Highlighting scales on slide]

25. I haven't been able to get hold of the actual numbers but trying to work from this, within the footprint of the development marked in green one can gauge by taking midpoint of these bubble plots – average number per test pit - and from that we can calculate the distribution. Within the proposed development area something like 7 worked flints per square metre. It varies quite dramatically.

26. When we look at some distributions we see marked drop offs. Big bubbles to small bubbles. If we are looking at well homogenised sample we expect to see fewer sharp contours

27. There are certain key areas – those ringed in black have been identified in the ploughzone document to suggest that maybe we should go beyond 1% to 4%. Whilst that is to be commended to some degree, it is not enough.

28. They have said if they think it's worth it they might get to 10% or possibly 100%. However, we need to treat this assemblage

systematically. Anything less than 100% will see vast destruction of artefacts. That will still lead to the loss of about 0.5 million artefacts.

29. Areas of high concentration – we can compare with the distributions we have been getting from ploughsoil assemblages where we have been doing very high proportions of sieving.

30. In some parts of the western approach somewhere around 30 worked flints per square metre were found – comparable to similar concentrations as found at Durrington Walls.

31. That is not a scatter of casually dropped material. This is the result of concentrated activity, consistent with being the remains of a large settlement. We have sufficient information from some of the diagnostic material and from the trial trenching which uncovered features associated with the early Bronze Age at the time of the Beaker People, 2450- 1800bc. This period spans Copper into early Bronze Age.

32. When we look at that within the larger WHS, this is an area that was identified in a publication in 2017 by Josh Pollard and colleagues. In that they identified not only the area adjacent to the western approach but also a substantial area to the north. You can see from the scale (referring to slide) that this is several km long. A remarkable density of Beaker associated material. I know of no Beaker settlement in Britain or in Europe on that scale.

33. The question is what was it that made this aggregation a site of such significance? Possibly from radio carbon dates and diagnostic ceramics we are looking at an occupation settlement which might go with one of the two later stages of Stonehenge. This is also the time as Paul Garwood explained yesterday that this landscape filled up with cemeteries of round-barrows. The settlement may be associated with that activity as opposed to ceremonial activity.

34. Whether such questions can be answered within the existing project I doubt. We should not go ahead lightly with removing these artefacts. Ideally we ought to be aiming to preserve or no one will

	<p>ever be able to answer these questions. If the project goes ahead, this will not be possible.</p>	
34.1.29	<p>35. The western approach also crosses through an area where we have an unusual concentration of Neolithic longbarrows – first half of 4th millennia BC. 5-600 years before first stage of building Stonehenge.</p> <p>36. Some 9 of them in an area just slightly more than 4 square km. This is unmatched. It is not simply the density. They are not doing what longbarrows normally do - they are all concentrated along top of the Wilsford dry valley. Orientations hint at the sense that they are lying with their sides facing towards the middle. In the middle we have Wilsford G30 (longbarrow) and what is known as Normanton Down Mortuary enclosure. In this upper valley we also have the Wilsford Shaft. At the bottom of it we found Neolithic waterlogged remains. Question whether it might be one of a number of natural or manmade deep shafts that may be part of the landscape.</p> <p>37. This group position immediately to the west of Stonehenge makes me wonder what is in this region that this group may be referencing which may be related to why Stonehenge was placed where it was. There are important research questions which can be asked of this. What is the best means of answering those?</p> <p>38. Turning to the results of the diagnostic material – what we see is that this is an area where a number of flint blades were found from 1% sample sieving, thought to belong to the earlier Neolithic period. Within this transect there is the remains of activity which may relate to the use of those longbarrows. If one simply machines that off one will not find any hints. The evidence is only in the ploughsoil.</p>	<p>See responses to 34.1.24 and 34.1.28 above.</p> <p>The draft DAMS proposes a systematic sampling approach to recover a representative proportion of the artefacts through sieving of the ploughsoil where concentrations of material have been identified: it is not proposed to ‘simply machine [it] off’.</p> <p>The Applicant continues to consult with HMAG members to identify a reasonable and proportionate approach to mitigation, with inputs from the Scientific Committee.</p>
34.1.30	<p>39. Eastern Approach – overall a lower density of artefacts. I haven’t been able to find a plan on which the actual road alignment is marked.</p> <p>40. On same principle of working out average numbers – we are looking around 3.6 worked flints per square metre. About half the</p>	<p>41. See response to 34.1.26, 34.1.28 and 34.1.29 above.</p> <p>42. The percentage of tool types of all dates recovered from the 1% sampling at the eastern portal was 1.45%, compared to 1.16% from the western portal. The concept of ‘zones’ in the Stonehenge landscape – living/dead, funerary/settlement is debatable: while it is possible to read the evidence this</p>

	<p>density found on average in the western approach. First thoughts were that it is a bit low.</p> <p>41. What we were then able to do is see some of the finds that Wessex Archaeology have made. Interestingly here in this part of the landscape small numbers of likely Early Neolithic blades were found. What is important about this area is it offers the chance to ask a question about the relationship of that early Neolithic activity between east and west. There is a general question. Is it a series of small focussed clusters or a general spread across the area? You can only answer that question if you increase the sampling intensity to 100%.</p> <p>42. Are we looking at funerary zone as opposed to where ceramics were found? One has potentially got a distinction between funerary zone and a settlement focus. We suspect from our own research in this area there is a major development. What we are finding from ploughsoil and within buried features is that you get a higher proportion of tool types on this side of the WHS. This is something that ploughsoil analysis if conducted to sufficiently rigorous level will allow us to cast light on.</p>	<p>way, it is not necessarily the case, nor is it the consensus. The Applicant considers that the suggestion of a zone of funerary activity within the Scheme boundary is not demonstrated by the evidence from the evaluation of the eastern portal and its approaches.</p>
34.1.31	<p>43. Document presented to scientific committee set out sampling of features. In the proposal there are percentages of the sample to be taken in each case. Certain ditches not looking at 100%. Similarly for tree hollows, proposed to be sampled at 12.5%. Excavation of all sub-ploughsoil features in the WHS should be at 100%.</p> <p>44. We know that many of these tree hollows have produced significant cultural material. If you only dig 12.5% you are missing a large number.</p> <p>45. These are important features not only because they are repositories of cultural material – comparing hollows will allow us to establish whether the theory fits. Are ceramics confined to settlement zone in the east compared with funerary zone in the west?</p> <p>46. We know from pollen collected from bed of river Avon, and from types of snail found under Neolithic monuments we are looking at a period of woodland clearance in the century leading up to</p>	<p>The Applicant continues to consult with HMAG members to identify a reasonable and proportionate approach to mitigation. This includes consideration of the appropriate sample sizes for excavation of human made features and tree hollows, both inside and outside of the WHS.</p> <p>The Applicant commented on the document that is referred to by the Consortium at the ISH2 as recorded in relation to agenda item 7(i) & (ii) of the written summary of oral submissions [REP4-030]. Under that agenda item the written summary also includes a post hearing note addressing the loss of half a million artefacts.</p>

	<p>construction of Stonehenge. If we can date tree hollows going out of use and hollows being used as traps for artefacts we can build up a picture which fills in the gaps.</p> <p>47. Ploughsoil is one of the most important archaeological resources in the WHS. In it is the residue of most day to day activity of the prehistoric peoples who were involved in using this ceremonial and funerary complex. The site is complex because it is a long term palimpsest, 1000s of years mixed up together. That is why 100% is so important in order to gather sufficient distribution and quantity of diagnostic artefacts to be able to tease out the different layers. These are standards which we have been obliged to work to and are happy to work to, and we would like to see the same rules apply to commercial archaeologists working in the WHS. Otherwise we are looking at perhaps 0.5million artefacts lost forever.</p>	
34.1.32	<p>Response to Inspector’s Question regarding 100% excavation</p> <p>48. We need to be clear about which areas are going to see topsoil destroyed and built upon. Severe compression. Where else is that ploughzone assemblage liable to be damaged? What I have confined my comments to are the areas where the cutting of the road will take place – broadly 40m wide corridor with variations. There could be more areas that are involved – construction of re-routing, compounds, haul roads. The 100% excavation has to apply to where we are seeing the destruction of the relevant deposits. In the main that is going to be within the road-take.</p> <p>49. Having done a lot of this myself it is time-consuming and labour intensive. Given that it took us a month to excavate an area of 700 square metres with a team of 100. My estimate is team of 300 could do it within 2 long annual seasons. It will take at least another year and probably two years.</p> <p>50. If you are dry-sieving there is a point where soil is too wet for the sieve to work. There are other techniques; we can use smaller mesh sizes for wet screening, going down to 2mm mesh to pick up the really small stuff. That helps us identify the Mesolithic period.</p>	<p>See response to 34.1.18 above for areas affected by the Scheme.</p> <p>The Applicant continues to consult with HMAG members to identify a reasonable and proportionate approach to mitigation. This includes consideration of the appropriate sample sizes for excavation of human made features and tree hollows, both inside and outside of the WHS, and proposals to protect remains that will be temporarily or permanently covered during the works. This was noted at the ISH2 as recorded in relation to agenda item 7(i) & (ii) of the written summary of oral submissions [REP4-030]. That summary also records the submission made on behalf of the Applicant, 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.”</p>

	<p>Microliths will drop through standard 10mm mesh – don't find them unless at finer level.</p> <p>51. The Scientific committee advised secondary sieving at 4mm – that produced desired results and Mesolithic microliths were found.</p>	
34.1.33	<p>Response to Inspector's Question regarding types of flints found</p> <p>52. At Durrington Walls we have discovered large scale napping of flint across the settlement. Not primary discard. Not where the flint-napper was making an axe or an arrowhead. Shovelled up and dumped somewhere else. Put on a rubbish heap.</p> <p>53. Within the houses we find material has ended up in the corners of the houses. Most of it is in a secondary discard context. Relates to the organisation of their inhabited space.</p> <p>54. At Durrington Walls – where you get empty gaps we were lucky enough to find the floors of Neolithic houses. We can use that as predictive tool – where we find empty spaces we can speculate that there might have been houses. This gives us a chance of making up for the damage caused by ploughing, using those two dimensional patterns to understand spatial dimension of daily life.</p>	<p>See responses to 34.1.2 and 34.1.4 above. The Applicant respectfully notes that the preservation conditions and artefact scatters at Durrington Walls, a sealed settlement site, are not comparable to the scatters located at the Western or Eastern Portals and their approaches. Durrington Walls is an exceptional site rather than typical. The very fact of 'monumentalising' the place, sealing the 'settlement' activity with the earthworks of a huge ceremonial enclosure, demonstrates that it was not just another part of the landscape, but somewhere special, set aside, marked out, closed off. In our submission, therefore, the spatial arrangements inside Durrington Walls are not useful as a predictive tool for situations that are not of the same type. At the western and eastern portals, we are not dealing with areas containing buildings later monumentalised by a huge ceremonial enclosure, so the comparison is not applicable.</p> <p>At the Western Portal we have a lithic 'assemblage' that consists of a conflated mass of material of different ages, and potentially spanning millennia. Spatial patterns within that will relate to many things – topography, historic land use, prehistoric land use, the actual activities that lead to its deposition in the first place, etc. The patterns of the lithics are not entirely random and will relate to some degree to the activities that lead to their generation in the first place, but in our submission it is simplistic to suggest that the gaps equate with the location of vanished structures. Many distorting factors necessarily need to be taken into account before one can come to conclusions regarding the meaning and interpretation of the spatial distribution of the lithics.</p>
34.1.34	<p>Paul Garwood's comments following those of Mike Parker-Pearson</p> <p>55. Wet sieve techniques are being used as part of the Stonehenge Landscapes EMI project – including sampling of topsoil deposits (a</p>	<p>The Applicant continues to consult with HMAG members to identify a reasonable and proportionate approach to mitigation. Wet-sieving is standard practice for samples taken for environmental analysis. Both wet and dry sieving will be considered for sieving of ploughsoil samples.</p>

	<p>10% sample as an experimental exercise). We are collecting material from the flint knapping process. Wet sieving can be done in a variety of ways – with 4 and 2mm sieves for example – the aim being to wash out very fine sediments in order to collect very fine material such as tiny lithic artefacts, ceramic fragments, bone, and charcoal, some of which will be important for dating and understanding site functions.</p> <p>56. Certainly for excavating features this ought to be standard. It is providing very significant additional and detailed information. There are some periods where very fine lithic material may not be recovered through dry sieve techniques. To undertake wet sieving on an intensive and systematic basis gives us the opportunity to look at the Mesolithic era especially in more detail - something that in the WHS we should be doing.</p>	
34.1.35	<p>c) Evidence of Paul Garwood with regard to the positioning of the western portal and its severing of the relationship between groups of barrows together with harm to the topography and to the visual and spatial relationships</p> <p>57. Again, the panel is referred to Paul Garwood's C.V. and the above comments as regards his expertise. This note should be read together with his Powerpoint presented on 5 June. Notably, his evidence was not contested by HE.</p> <p>58. There are two facets in relation to the Winterbourne Stoke Crossroads barrow group, itself as a heritage asset and its wider context and how it relates to OUV.</p> <p>59. They have been the subject of recent large scale geophysical projects where one deals with the site as an entirety.</p> <p>60. The WSC barrow group is quite unique, the best preserved funerary complex in Europe. It includes all of the types of funerary monuments e.g. longbarrow, bowl, pond, bell, disc, and saucer barrows all located together as part of one complex. It is a fabulous and exceptional site from the Early Bronze Age. One needs to understand it in its context, one group amongst a number of</p>	<p>It is not correct to state that the assertions put by the Consortium are not contested by Highways England.</p> <p>See our response to 34.1.24 above regarding the Longbarrow grouping.</p> <p>The Applicant recognises the significance of the Winterbourne Stoke Crossroads Barrows. Development of the Scheme design has sought to remove the impact of the existing A303 and the Longbarrow roundabout and associated lighting from immediately adjacent to the Winterbourne Stoke long barrow itself, at the southwest end of the group. The new road alignment would be 150m south of the existing alignment and placed in deep cutting to conceal the sight and sound of traffic in views between the Winterbourne Stoke Crossroads Barrows and the Diamond Group, the Wilsford Barrows and the Normanton Down Barrows. The new Longbarrow junction would be 600m west of its current position and would be unlit. The twin dumb bell roundabouts and the connecting Green Bridge No. 3 would be sunk into the landscape to minimise visibility; new planting would help to integrate these elements into the landscape. The A360 would be realigned away from the barrow cemetery and would be sunk into the landscape to minimise visibility, with new hedgerows planted to integrate the link road into the landscape: at its closest point, the A360 link road would be 86m away from the barrow group. These improvements would deliver substantial benefits to the setting</p>

complexes e.g. the New and Old King Barrows, the Cursus, Winterbourne Stoke Crossroads, and Normanton Down groups. All of these groups are intervisible and are located broadly in cardinal points by reference to Stonehenge. They all developed in the period 1900-1600bc. There is a very consistent rule articulated in the landscape. You can't look at these in isolation, you need to understand them one against another.

61. It is striking that chronologically the Cursus group developed east to west, the WSC group from north-east to south-west, and the Normanton Down group from west to east: i.e. all [broadly in an anti-clockwise direction with respect to Stonehenge at the centre].

62. The large-scale spatial distribution of elite funerary monuments across the Early Bronze Age landscape and their physical development over time, both in relation to Stonehenge at the centre and to one another, reveal a highly organised sacred landscape. This articulated - and integrated - deep concerns with celestial cycles embodied in Stonehenge and religious and political ideals expressed through the aristocratic funerary rituals conducted at the funerary monument complexes located at strategic points in the landscape around Stonehenge.

63. The visual relationships are very striking and exceptionally important in thinking about their wider place.

64. The road scheme portal roughly cuts clean through the south western zone of the Early Bronze Age landscape, directly impacting on its totality, the landscape setting of the WSC group, and interfering with views not only between WSC and the Normanton Down and King Barrow ridge barrow groups, but also between WSC and the major outlying Wilsford and Lake barrow groups to the south. It is very difficult to see this as anything other than a profoundly detrimental impact on this unique prehistoric landscape. It is so clear to view today that one is concerned with an articulated whole. The portal interferes with this in a profound way.

65. The laser scan gives a view of the terrain, this is a very intrusive scheme.

of the barrow group. The Applicant therefore strongly disagrees that the Scheme has the detrimental effect asserted by the Consortium.

The benefits of the Scheme are clearly demonstrated by the photomontages and CGIs presented in the ES Chapter 6, Appendix 6.9 [APP-218] (Figure 4, Figure 5 and Figure 7).

Also see Highways England's response to 34.1.6 above in terms of the Winterbourne Stoke Crossroads barrow group and the impacts of the Scheme on it.

With regards to AG13 Diamond Group, the A360 currently bisects the group and the existing A303 additionally severs the group from AG12 Winterbourne Stoke Crossroads Barrows to the north. The scheme design removes traffic and severance from within the asset group by realigning the A360 and Longbarrow junction further to the west. Green Bridge No. 4 maintains visual and physical landscape connectivity with AG12 Winterbourne Stoke Crossroads Barrows to the north and access between the two groups via new NMU routes, and this combined with the essential chalk grassland mitigation, improves the visitor's ability to appreciate the setting, in the context of reduced views and sounds of traffic.

Regarding AG19 Normanton Down Barrows, the scheme would remove the existing A303 surface road to the north of the asset group, which severs its relationship with Stonehenge as well as many other asset groups to the north of the A303. The scheme would restore the setting of much of the AG19 Normanton Down Barrows, its sense of place, and visitor's ability to appreciate them within a seamless landscape, noting that long distance views from the northern end of the asset group will include minor intrusion from the western approach cutting and Green Bridge No. 4. Amongst other benefits of the restored setting of AG19 Normanton Down Barrows would be the enhanced access, enabling an uninterrupted traverse between Stonehenge and the Normanton Down Barrows along Byways 11 and 12. The removal of the visual and audible impacts of traffic on the existing A303 would be beneficial to the setting of the asset group as a whole. Views from numerous individual monuments within the asset group would be improved, and compromised sightlines restored. These include key views, including those between the Sun Barrow and Stonehenge, and between Stonehenge and the

66. We have managed to do a little amount of view-shed work, mapped onto a terrestrial laser scan and this shows what you can see across the landscape. This should have been done as a matter of course for this project, looking at the effect of what can be seen in the landscape from known points. It is easy to do.

67. The claim that the scheme protects OUV is wrong: the scheme is highly intrusive and affects the integrity and wholeness of the prehistoric landscape, which is fundamental to our understanding and appreciation of it, and will create a damaging permanent impact. If the road scheme goes ahead there needs to be a significant shift of the western tunnel portal to a point outside the WHS.

core of the Normanton Down asset group. From the core of the group, views of traffic would not be available, while traffic noise would be inaudible.

Regarding viewshed analysis, the Environmental Statement Appendix 6.9 - Cultural Heritage Setting Assessment [APP-218, paragraphs 3.6.8] sets out why digitally generated viewsheds can be problematic in terms of reliability for setting assessments.

In respect of the setting assessment undertaken for the ES and the HIA, paragraph 3.6.9 states:

“In respect of inter-visibility, the present setting assessment adopts an approach in which it acknowledges where sightlines exist between monuments and Asset Groups in the present day. These are considered a positive attribute of setting for the modern visitor, without prejudice to whether it was a salient factor to those in the past. Retention or re-establishment of sightlines is considered positive; severance is considered negative. The assessment of a given asset does not attempt to consider all visual interconnections, focusing instead on those which are readily apparent and/or most prominent, irrespective of how great the intervening distance. These have been identified from on-site observations, without recourse to existing GIS datasets, which attempt to present a more comprehensive picture of monument inter-visibility, but which are nevertheless still subject to the methodological issues discussed above.” (in paragraph 3.6.8).

The Scheme has been designed throughout in full recognition of the site’s WHS status. The design process has involved extensive consideration of heritage issues, which have influenced the design of the Scheme throughout the development of the DCO design. Heritage partners have attended and input to design team workshops, making sure that the status of the WHS is fully recognised by the integrated, collaborative Project Team, alongside the WHS’s economic value to the surrounding area.

The Scheme design has optimized the positions of the tunnel portals within the landscape at the head of dry valleys, and the road (and traffic on it) has been designed to be hidden within deep retained cuttings that minimise landtake, views, reduces noise and improves the tranquillity of the WHS. The further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal extend the tunnel from 3km to almost 3.3km and aid

		<p>landscape integration. The addition of Green Bridge No. 4 maintains physical and visual connectivity between the Winterbourne Stoke Crossroads Barrows and the Diamond Group and, in particular, the two upstanding long barrows in each group in this western part of the WHS. The retained cutting in the western approaches allows visual connectivity to be maintained between the Winterbourne Stoke Crossroads Barrows, the Diamond Group and the Normanton Down Barrows that contribute to the OUV of the WHS, as agreed with heritage stakeholders. The design of the retained cutting incorporates an upper grassed slope and chalk grassland mitigation to the north and south. This allows the cutting to blend into the surrounding landscape from key views between monument groups. The Scheme seeks to avoid and minimise adverse impacts on the Attributes that convey the Outstanding Universal Value (OUV) of the WHS, its Integrity and Authenticity, wherever possible, and is assessed to have a Slight Beneficial effect on the OUV of the WHS as a whole and to sustain the OUV of the WHS.</p> <p>Regarding longer tunnel options – see Highways England’s response to Written Question AL.1.29 [REP2-024].</p>
34.1.36	<p>Response to Inspector Questions</p> <p>74. With regard to how the proposed road scheme would interfere with the visual relationship</p> <p>–I can comment in broad terms but the view-shed analyses have not been done. Examples are partial, and based on what one can see from one particular barrow group. The line of the road would create the new western approach – this would increase the fissure line already marked by the A303, the landscape imprint of which would not disappear. The new cutting would compound this pre-existing constraint, creating a visual barrier between Winterbourne Stoke and the area across to the East – including Normanton Down. It would intrude into that landscape setting, damaging the Early Bronze Age landscape as a coherent whole, and the visual and spatial relationships of the linear barrow groups. Deliberate attempts were made by Early Bronze Age groups to control that landscape in very particular ways that took account of visual connectivities. To insert a</p>	<p>See responses to 34.1.6 and 34.1.35 above. The benefits of the Scheme are clearly demonstrated by the photomontages and CGIs presented in the ES Chapter 6, Appendix 6.9 [APP-218] (Figure 4, Figure 5 and Figure 7), including the Winterbourne Stoke Crossroads Barrows.</p> <p>The preferred route was carefully chosen to avoid known archaeological remains. A comprehensive programme of archaeological evaluation surveys (see ES Chapter 6 Cultural Heritage, paragraphs 6.6.13 – 6.6.52 and REP1-039 – REP1-056), covering the entire red line boundary of the scheme, has informed the scheme being designed in a way that has limited archaeological impacts where this is practicable. Archaeological remains would be excavated and recorded during the preliminary works phase, in advance of construction, to avoid, as far as is practicable, previously unknown archaeological remains being uncovered during construction. The Detailed Archaeological Mitigation Strategy (DAMS) [REP4-024] submitted at Deadline 4, is being developed in consultation with Wiltshire Council Archaeology Service, Historic England and the Heritage Monitoring Advisory Group (which comprises Wiltshire Council Archaeology Service, Historic England, National Trust, and English Heritage) and with inputs from the Scientific Committee</p>

	<p>massive road cutting in such a blatant way – compromising these visual and spatial relationships - would be extremely damaging.</p> <p>75. The concerns are two-fold with regard to changes in levels, embankments and cuttings:</p> <ul style="list-style-type: none"> • Spatial impact is very great indeed. This is difficult to calculate from the plans, (as the exact extent of cutting, movement of earth and its impact on the road line and roundabouts are not clear), but within those areas there would be total loss of archaeology over extensive areas. • The visual intrusion of what will become a vastly greater road junction just outside the WHS (the Longbarrow Junction) would be very great. This would be visible directly from the Winterbourne Stoke barrows, and although in a cutting the feeder road (and considerable traffic) just to the west would run very close to the barrow group.,. This must affect the setting and OUV attributes. The wider coherence of the landscape within and without the current boundaries will be damaged. 	<p>and is secured by paragraph 5 of Schedule 2 of the draft development consent order [REP4-018]. The archaeological results and the archive of finds and reports would be available for study in the future, enabling knowledge of the ancient landscape to be re-evaluated as knowledge of our past and scientific techniques evolve.</p> <p>The position of the new Longbarrow Junction, which covers approximately 20ha, has been covered by the above archaeological evaluations and the impacts on archaeological remains have been assessed in the Environmental statement Chapter 6 - Cultural Heritage [APP-044]. The assessments do not support the assertion that there would be a “total loss of archaeology over extensive areas”, but in any case the junction area will be the subject of archaeological mitigation and recording in advance of construction, as set out in the draft DAMS as submitted at Deadline 4 [REP4-024], to ensure a suitable record is made prior to their loss.</p> <p>In terms of the purported visual intrusion of the Longbarrow Junction, the Applicant has responded to this point, as recorded in the written summary of oral submissions made at ISH2 [REP4-030] with respect to agenda item 6(ii), and in further detail in response to F and AN above. That summary includes a post hearing note which addresses the purported impact from the feeder road from the visitor centre, and reports the finding of the HIA that the realignment of roads and their placement in cutting will be beneficial to the setting of the monuments within the Winterbourne Stoke Crossroads Barrow Group.</p>
34.1.37	<p>Response to HE’s contention that it will be a benefit to move the junction 600m from the WSC barrow group</p> <p>77. The figure of 600m can only refer to the centre-point of the junction; the nearest point of the groundworks comprising the junction is only about 250 m from the WS Long barrow at the south-east of the WSC barrow group, while the A303 road cutting leading to the junction would only be c.100 m to the south. The junction is something like 20ha in extent, with two roundabouts. It is a massive hole in the landscape within the sight of the linear barrow group.</p> <p>78. The wider setting of the WSC barrow group includes the area outside of the WHS. The lie of the land is such that the barrow group</p>	<p>See response to 34.1.6 and 34.1.35 above. The proposed new Longbarrow junction has been designed carefully to minimise visual intrusion in views from the WHS.</p> <p>The benefits of the Scheme are clearly demonstrated by the photomontages and CGIs presented in the ES Chapter 6, Appendix 6.9 [APP-218] (Figure 4, Figure 5 and Figure 7), including the Winterbourne Stoke Crossroads Barrows.</p>

	<p>is built on a slight slope that runs down to southwest – that is the viewing direction to some respects. It is notable that the chronological development of the barrow group also proceeds towards the long barrow and down to the south west – to the area of the proposed very significant and large-scale junction works. There is no question that the impact will be very considerable however deeply cut the road is.</p>	
34.1.38	<p>Further comments made during discussion</p> <p>79. Despite the suggestion that it will be possible to conceal the cutting and do various landscaping, you can't hide a 1.1km-long, 50m-wide chasm across the landscape, with additional fencing and other kinds of works. As soon as you approach that routeway, at any point close to it, it will be in your face and unmistakable. Concealment and mitigation is illusory, as soon as you approach that part of the WHS, within a few hundred metres it will be very visible.</p>	<p>See our response to 34.1.6 and 34.1.35 above. The Scheme design has been developed to conceal the new road infrastructure in key views between asset groups identified in consultation with HMAG members. The upper 2.5m of the retaining walls of the western portal will be formed of grassed slopes to help conceal the structure within the landscape (see OEMP requirement D-CH5 [REP4-020]). Fencing will be visually recessive and placed below the height of these earthworks so as not to be visible above the western cutting (see OEMP requirement D-CH24 & D-CH25). The Applicant acknowledges that it will be possible to see the cutting when using the Green Bridge No. 4 and in oblique views from the downgraded A303.</p>
34.1.39	<p>d) Additional comments on the DAMS</p> <p>80. The Consortium agrees that HE cannot reserve final authority for itself with regard to matters such as unexpected discoveries. The County Council, in consultation with Historic England, should have detailed oversight of the implementation/operation of the DAMS.</p> <p>81. The proposal that topsoil which has been removed would be stockpiled and stored within the scheme boundaries for the purposes of landscape restoration demonstrates an extraordinary lack of regard for the archaeological significance of the WHS. Such an operation would clearly disrupt the provenance of (or, in other words, contaminate) the existing material in areas where the topsoil had been placed for future research. If this is to occur then there will inevitably be harm to the archaeological resource in those areas beneath the dumped topsoil. This must be factored in as significant harm to the WHS and to the various relevant criteria of OUV.</p>	<p>Regarding point 80, please refer to the Applicant's written summary of its oral submissions at ISH 2 with respect to agenda item 7 (iii) [REP4-030]. The roles of Wiltshire Council and Historic England under the DAMS are also the subject of ongoing discussions with each organisation and with HMAG.</p> <p>Regarding point 81 please refer to the Applicant's written summary of its oral submissions at ISH 2 with respect to agenda item 7 [REP4-030] (in particular pages 2-27 to 2-30), where the Applicant explained that topsoil and its re-deposition would be managed through the soil management strategy, secured in the Outline Environmental Management Plan ("OEMP") (MW-GE03) [REP4-020], and that the soil management strategy would take cognisance of any archaeological considerations, as required by the DAMS. The Applicant continues to consult with HMAG members to identify a reasonable and proportionate approach to mitigation. This includes provision for the management of placed material including use of a permeable high visibility barrier membrane and the mapping of deposited material. The Applicant notes that less than 1000 cubic metres of topsoil is required to be</p>

	<p>82. As emphasised by the CBA on 6 June the ability to record that which has been destroyed is not a factor to be taken into account in the balance of the decision (para 5.139 NPS). The scheme must therefore be weighed against the total loss of the archaeological remains.</p>	<p>placed within the WHS, on the green bridges and portal canopies and along the downgraded sections of the A303 and Stonehenge Road.</p> <p>Regarding point 82, please see Appendix B: Applicant's response to submissions in relation to paragraph 5.139 of the National Policy Statement National Networks (NPSNN) to the Applicant's written summary of its oral submission from ISH2 [REP4-030]. That appendix explains that the effect of paragraph 5.139 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.</p>
34.1.40	<p>e) Blick Mead</p> <p>i. Significance of Blick Mead</p> <p>83. Whilst Blick Mead and other Mesolithic sites/remains do not fall squarely within the criteria for which the WHS was designated, Mesolithic sites/remains (and in particular Blick Mead) are fundamental to the significance of the WHS. As stated by the Council for British Archaeology, the Mesolithic era is clearly fundamental to understanding the context in which many ceremonial sites developed and therefore the attributes of OUV displayed by the WHS. At the hearing on 5 June HE accepted that the Mesolithic remains illuminate consideration of matters which are part of OUV and activities of other civilisations.</p> <p>84. That significance is wider than OUV is clear from the WHS management plan, see for example paragraph 1.3.1.</p> <p>85. As Paul Garwood, Senior Lecturer in Archaeology at Birmingham University and member of the consortium of archaeologists stated, the OUV of the WHS picks out the integrity of its landscape and the interconnectedness of it. It is a huge mistake to approach the whole issue as a collection of heritage assets. The entirety of the WHS from an archaeological point of view is one single site. He stated that there were a number of dimensions to that landscape, one dimension is the topsoil which is choc-a-block with material and to damage part</p>	<p>Refer to the Applicant's written summary of its oral submissions made at ISH 2, with respect to agenda item 4 (i) and item 8 [REP4-030], regarding the significance of Blick Mead and the OUV of the WHS. Highways England agrees with Historic England's comment at ISH 2 item 4 (ii) regarding the significance of Blick Mead and its contribution to the OUV of the WHS. Namely: <i>'[Historic England] 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. [Historic England] 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.'</i> Highways England therefore do not accept that the Mesolithic remains illuminate consideration of matters which are part of OUV. Regarding the significance of Blick Mead, Highways England have always accepted that it is of national (high) value (see Appendix 6.8 – Cultural Heritage - Summary of non-significant effects [APP-217, page 5]) and should be treated as such in terms of the NPSNN The ES reports No change and a Neutral Effect on the Blick Mead archaeological site.</p> <p>See also Highways England's response to 34.1.7 above with regard to integrity. The test of integrity in relation to the WHS relates to the completeness of the attributes that convey OUV, in terms of the adequacy of the boundary of the WHS, and to the intactness of the attributes. Dr Garwood argues that 'the entirety of the WHS from an archaeological point of view is a single site'. The Applicant does not disagree with this concept. In terms of the</p>

of that damages the whole of the landscape. He emphasised that the Mesolithic remains are a clear part of this. He stated that it was already very clear that the landscape is unusual and quite exceptional and that some of these features have been known about for a long time and some are coming to light only very recently. He stated that only 2 years ago the single largest Mesolithic dug feature in north-western Europe was excavated, a large pit feature 3m across 2m deep with an exceptionally fine run of dating evidence back to the 8th millennium BC.

86. The heritage assessments of HE, including the HIA and chapter 6 of the ES, have therefore proceeded on a false basis. The HIA purports to address the significance and impact upon the WHS as a whole, however this is limited largely only to OUV, integrity and authenticity. It does not consider other features of the WHS which also contribute to its significance. The failure to include Mesolithic remains, and in particular the remains at Blick Mead, are one example of failing to understand and assess the significance of the WHS as being broader than simply the OUV criteria, integrity and authenticity (see para

5.10.29 of the HIA for asset groups scoped out of the HIA).

87. Blick Mead's significance must also be understood as a heritage asset in its own right. It is patently a non-designated asset of archaeological interest that is demonstrably of equivalent significance to Scheduled Monuments and therefore should be subjected to NPS policies relating to designated heritage assets (para 5.124 NPS).

88. The significance of Blick Mead as a site of international importance does not appear to be disputed and has been set out in the submission of Professor Jacques to the Inquiry. At the hearing on 5 June the Council described the site as highly significant and exceptionally exciting and hoped that onward investigations would shed even more light on the site. Professor Jacques updated the inquiry with recent finds including animal bones which reveal much about the socio-economic basis and cultural practice of the time. In particular the high proportion of Aurochs. Underscoring the

contention that the loss of archaeological remains in the topsoil amounts to damage to the archaeological landscape of this single site, please see Highways England's response to 34.1.7 above for an explanation of its position in respect of the significance of the remains and their loss in relation to OUV. The Applicant rejects the suggestion that the HIA has proceeded on a false basis in respect of the significance of the WHS. The Applicant considers that the HIA has been carried out accurately, in compliance with ICOMOS guidelines and with a full appreciation and understanding of the importance of the WHS and its OUV, including of the attributes that contribute to its OUV.

Dr Garwood appears to contend that the recognition in the WHS MP of 'other significances' implies some omission in the HIA. Both the HIA and the ES acknowledge the significance of Blick Mead as a site of potentially national importance. The Applicant rejects any suggestion that the site has not been appropriately considered in either the ES or the HIA.

See also the Applicant's response Comments on Written Representations [REP3-013] in response to the Stonehenge Alliance regarding the WHS inscription and the Mesolithic period [REP3-013, paras. 12.3.103–105]; and to the Blick Mead Archaeology Team regarding the significance of Blick Mead as a heritage asset [REP3-013, paras. 60.2.2 & 60.2.7].

	<p>significance of the artefacts Professor Jacques highlighted the latest results on pollen. Now 40 different types of pollen coming from Mesolithic layers around the auroch footprints – c.6500BC. What they show is that grasses are 45% of the assemblage. This points to there being few trees and possibly a clearing of trees. There are 20 types of spores as well which is highly diverse. There is also potentially DNA evidence from Aurochs.</p>	
34.1.41	<p>ii. Extent of Blick Mead</p> <p>89. The extent of the site of Blick Mead is currently unknown. As Professor Jacques stated only 1/3 of a football pitch penalty area has been excavated and therefore it cannot be said how far the site extends. This has to be taken into account in the heritage assessment.</p>	<p>The extent of the heritage asset known as Blick Mead is described in Appendix 11.4, Annex 3 Blick Mead Tiered Assessment, Section 2.2 [APP-282], which was reviewed and accepted by Historic England and Wiltshire Council Archaeological Services.</p>
34.1.42	<p>iii. Harm already caused to Blick Mead</p> <p>90. The proposed scheme has already caused significant harm to Blick Mead through the siting of 2 water meters within the site. One of these is sited in an unexcavated area which lies directly in the path of the Auroch footprints. The other is in another unexcavated area 1m from the most productive trench at the site. These were installed on site by HE, without consent, on 27 November 2018. Contemporary emails regarding the installation can be found at numbered pages 52-55 of APP Rep 2-063. No recovery of artefacts/remains was carried out and the soil was disposed of.</p> <p>91. These installations can be seen as nothing other than substantial harm to Blick Mead, which is to be treated as a designated heritage asset in its own right and also as part of the WHS. This harm must be weighed in the planning balance against the scheme. Notably, it has not been considered by HE in any of its assessments.</p>	<p>The applicant does not accept that installation of the two water meters has caused 'significant harm to Blick Mead'. The installation was attended by an experienced archaeologist, who inspected the arisings for artefacts and recorded the deposit sequence. No artefacts were observed in the arisings.</p> <p>The test of substantial or less than substantial harm hinges on the loss of significance of the asset. The applicant acknowledges that the Blick Mead site contains Mesolithic deposits of national importance. As explained by the Applicant at the ISH2 (see written summary of oral submissions [REP4-030], agenda item 8), the EIA and HIA 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>The preservational environment, which is suggested by the Blick Mead team to be more or less permanently waterlogged, will not, on the evidence of Dr Sladen for Highways England (as recorded in the written summary of oral submissions made at ISH2, in relation to agenda item 8 (ii) [REP4-030]), have been compromised. In any case, the significance of the site as a heritage asset of national importance has not been in any way diminished by these installations.</p>

34.1.43	<p>iv. Harm to the setting of Blick Mead</p> <p>92. It is suggested by HE that the assessment of the setting of Blick Mead was covered by the assessment of the registered park and garden at Amesbury Abbey. This misunderstands how setting is to be assessed. The issue is how the surroundings contribute to the appreciation and understanding of the significance of the asset. Without starting first with an assessment of the significance of the asset (which is clearly different for a Mesolithic archaeological site as opposed a registered park and garden) there has clearly been no adequate assessment of its setting.</p> <p>93. Latterly, in its responses to the Panel’s questions, HE has attempted to remedy the situation by conducting a purported assessment. It argues that due to the tree cover at Blick Mead there will be no impact. This assessment is misconceived for the following reasons:</p> <p>a. the trees which are currently in situ do not screen traffic from the A303 either visually or aurally, they clearly will not do so in relation to the new road and flyover; and, in any event,</p> <p>b. the trees are outwith the control of HE, there is no assessment of how likely they are to be maintained nor is there any assessment of their longevity and as to whether they are likely to survive/or be replaced during the period of the proposal’s operation.</p> <p>94. There is a lack of appropriate evidence (for example photomontages) for any adequate settings assessment to take place in any event. Where photomontages have been provided in the vicinity of Blick Mead these appear to be inaccurate (see photo with commentary provided by Andy Rhind-Tutt in REP 3 089 compared with drawing APP-010 sheet 9 of 24 where the current road and the</p>	<p>With regards to 92, 93 and 94, see Highways England’s response to the CBA in its Comments on submissions received to Deadline 3 [REP4-036, item 13.1.5].</p> <p>As explained by the Applicant at the ISH2 (see written summary of oral submissions [REP4-030], agenda item 8), the EIA and HIA assessed Blick Mead as of national importance, equivalent to it being a designated heritage asset and a scheduled monument.</p> <p>The Applicant would add in respect of submission 93.a, that there is sufficient tree cover at Blick Mead such that the Scheme would not impact the setting of Blick Mead and that for the question to suggest there is no screening of traffic is not supported by the Applicant.</p> <p>The Blick Mead Mesolithic site is located within a woodland clearing in the northern part of Amesbury Park, adjacent to the existing A303. The Blick Mead site is screened from new elements of the proposed Scheme by intervening existing woodland. For this reason, this heritage asset was scoped out of the setting assessment. ES Appendix 6.9 - Cultural Heritage Setting Assessment notes that “The 2km study area contains a very large number of heritage assets, only a proportion of which are potentially affected by the Scheme ... The initial selection of assets for assessment was primarily based upon the Zone of Theoretical Visibility (ZTV) of the Scheme, since visual impacts generally extend more widely than other impact-types. Nevertheless, this was not the sole criterion, since it is recognised that there could be instances of assets whose visual setting might not be altered by the Scheme, but which could be subject to other impacts, for example noise, traffic emissions and vibration.” [APP-218, paras. 3.2.1–3.2.2]. The ZTV is shown on Figure 6.12a Proposed Scheme Zone of Theoretical Visibility (ZTV) in Relation to the Stonehenge World Heritage Site [APP-078]. As noted in the Setting Assessment, “There would be an impact on the northern boundary and part of the eastern boundary of Amesbury Abbey RPG [Registered Park and Garden] as a result of the Scheme. However, that impact would not extend far into the RPG due to screening provided by the dense vegetation</p>

proposed flyover has been drawn too low). This is concerning on two levels:

- a. if this photomontage has been used in assessments of heritage impacts then those assessments are necessarily undermined (no response was given to this by HE); and
- b. this image appears to have been used to try to assuage the fears of objectors to the scheme, in particular the elderly residents of the Amesbury Abbey Care Home; if it is wrong then this calls into question whether there has been adequate consultation.

95. Despite this lack of evidence, given the proximity and extent of the scheme, the likely volumes of traffic, and the construction period, it can reasonably be assumed that the impact on Blick Mead's setting will be negative. This weighs against the scheme in the planning balance.

that covers the majority of the northern part of the asset" [APP-218, para. 3.4.10].

As noted in Highways England's Response to the Examining Authority's Written Question CH.1 [REP2-025], para. 8, "The context of the Blick Mead site is its underlying topography and its relationship to the River Avon [...]. It is part of a wider distribution of Mesolithic sites within the landscape, described in ES Appendix 6.2 Archaeology Baseline Report [APP-211]." As noted above, the EIA and HIA assessed Blick Mead as of national importance and this was taken into account when it was scoped out of the setting assessment alongside other designated assets that were scoped out such as the Grade I listed Amesbury Abbey, and Gay's Cave and Diamond; the Chinese Temple; the Baluster Bridge and Gate Piers and the Ornamental vase, west of west facade of Amesbury Abbey. There would be no change to the current setting of Blick Mead due to the Scheme. The Scheme alignment has been optimised past the Blick Mead archaeological site, to avoid land-take and to keep the road at existing grade. In respect of submission 93b, the trees are part of the Registered Historic Park and Garden and are likely to remain for the foreseeable future and the period of the proposal's operation. This is because the purpose of the Historic England 'Register of Historic Parks and Gardens of special historical interest in England' is to:

"encourage those who own them, or who otherwise have a role in their protection and their future, to treat these special places with due care."

There is no requirement for an assessment of the longevity of these trees as they would not be impacted upon by the Scheme as they were beyond the Arboricultural Impact Assessment study area [APP-230]. As the trees are present now, it is appropriate to consider them as the 'baseline' for the assessment, i.e. the existing situation and their survival and maintenance is for the landowner and their adherence to the requirements of the purposes of the Historic England register.

In terms of the comments about the photomontage made in paragraph 94, these assertions have already been responded to by the Applicant at the ISH2. The response is recorded in the Applicant's written summary of its oral submissions [REP4-030] in relation to Agenda item 6(vii) as follows: "*Reuben Taylor QC on behalf of the Applicant 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.

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.

Mr Taylor QC further confirmed that the photomontage is not one of the agreed viewpoints and so does not appear in the Environmental Statement.

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.”

It is therefore incorrect for the Consortium to continue to assert that there has been any failing in either the assessment or consultation in this respect.

Regarding 95, there is not a lack of evidence; the assessment of Amesbury Abbey RPG is within the Cultural Heritage Setting Assessment [APP-218] and Blick Mead is referred to in Environmental Statement Chapter 6 [APP-044]. Please see the Applicant’s written summary of oral submissions made at ISH2 [REP4-030] in relation to agenda item 6(vii) regarding the approach to the assessment of the setting of Blick Mead.

As stated above, the Applicant considers that the setting of Blick Mead would be unchanged as a result of the Scheme and is, in any event, protected by the natural landform by substantial vegetative screening. Please refer to Highways England’s Comments on Written Representations [REP3-013; paras. 44.2.10; 45.2.26–27; 57.1.7] and Highways England’s response to 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].

34.1.44

iv. Risk to preservation of remains and inadequacy of assessment

96. Below is a summary of the evidence and submissions given at the hearing on 6 June 2019. At the invitation of the Inspectorate Dr Chris Bradley and Professor Tony Brown have produced a separate note (see Part 4 below) which clearly sets out why (i) the scheme risks impacting the water environment at Blick Mead, (ii) why the tiered assessment is inadequate, and (iii) what needs to be understood before it can be said that the scheme will not damage the water environment at Blick Mead. That note demonstrates that HE's impact assessment is entirely inadequate and not compliant with regulation 14 Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Further, the Inspectorate can have no confidence that the proposal will not cause further significant harm to this internationally significant Mesolithic site.

97. It became clear at the hearing on June 6th that Historic England was of the view that the assessment of whether or not the scheme would impact the watery environment of Blick Mead was not within their remit. Therefore, any consultation response by Historic England on this issue has to be regarded with extreme caution. Indeed, when pressed by the Inspector as to the adequacy of the assessment HE responded 'we have not been closely involved in the Blick Mead site itself...'.

98. The Environment Agency was asked to comment. The EA stated that it has its own boreholes nearby Blick Mead and that the data shows that there is upward flow from deep to shallow. The data showed that there could be perched groundwater and that there is a driving head going downwards into the area with Mesolithic remains. The EA stated that it has not been quantified which is the dominant process and that more information on the bore hole would help to clarify that. They agreed that there was potential for the remains to be wetted by groundwater from the chalk.

99. When asked what additional work would be helpful the EA responded that one could monitor boreholes at different levels to

96. A response was provided to the evidence and submissions at the issue specific hearing on 6 June 2019, as recorded in the Applicant's written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019 [REP4-030] with respect to Agenda item 8(iii). In those submissions it was explained that the assessment that has been undertaken was entirely appropriate and adequate, and there is no basis for suggesting it does not comply with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. It was also reiterated at the hearing (as recorded in Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]) that the impact assessment presented in the Environmental statement Chapter 11 - Road Drainage and the Water Environment [APP-049] 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.

97. During the hearing it was confirmed that Highways England has followed the required guidance from Historic England in the production of the Blick Mead assessment, Historic England further confirmed this at the hearing, noting also that the assessment conducted was adequate.

There is no reason why an organisation would have to be closely involved when assessing the adequacy of an assessment. Historic England was not undertaking the assessment but reviewed the assessment for adequacy. The assertion that Historic England's response should be treated with "extreme caution" is unsubstantiated.

Items 98 to 102 refer to Environment Agency comments. The Applicant has responded at this Deadline 5 to the Environment Agency's Deadline 4 questions about Blick Mead [REP4-049].

Specifically:

The Applicant's response at Item T (of the Applicant's response to paragraph 6.4 of the Environment Agency's submission) confirms that the drilling results do not show any evidence of perched water and also that the difference in groundwater levels between certain boreholes is explained by their relative positions and constitute an expression of the natural hydraulic gradient of a

help tell where the water is coming from. Also when boreholes are installed there should be records which show the lithology which they have gone through and which horizons are screened. They also stated that groundwater quality testing would help tell whether it has come from chalk or superficial deposits.

100. The EA stated that with regard to the tunnel the potential is for a tunnel to lower the head in the chalk by dewatering,. If the deposits rely upon being wetted by the chalk then that could have an impact. Whereas, if they are more reliant upon the groundwater infiltrating from the surface from above then lowering waters in the chalk isn't going to have so much of an impact.

101. It was clear that the EA did not display any confidence that HE was correct that the wetting of the deposits was solely reliant upon the presence of a spring which would not be affected by the scheme. Further, whilst the EA referred to the impacts of the tunnel they made no comment with regard to the construction of the road and its operation immediately adjacent to the site and in particular road run-off/drainage patterns.

102. Further, in response to a complaint from HE as to the EA's position the EA replied that the reason they had picked up on the fact that there are different water bodies is because the HE had some monitoring points in deep chalk and those heads recorded in the shallow deposits are higher than the levels in the chalk and this suggests two different water bodies with low permeability horizons holding up the water which was included in the risk assessment. The reason why this didn't form part of a previous comment by the EA was because they haven't commented on this site in the past. The modelling so far suggests minimal impact on groundwater heads in chalk. If Blick Mead is dependent on it remaining unchanged then that suggests minimal risk of any impact. But if through further more detailed risk assessment it appears that changes to groundwater levels are going to be more significant, then there is potential that the scheme could impact the site.

103. The EA therefore appear to be of the view that there is at least a possibility that further modelling in relation to detailed design may

single, connected groundwater body across the site, as suggested by the Environment Agency in REP4-049.

The Applicant's response at Item U (of the Applicant's response to paragraph 6.5 of the Environment Agency's submission) explains that further assessment of the origin of water is not considered to be necessary. The groundwater levels support the conceptual model that 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. Rainfall will also provide a further mechanism for wetting of the Mesolithic deposits. (Section 2.6 of Annex Appendix 11.4 Annex 3 Blick Mead Tiered Assessment [APP-282]. The groundwater levels and rainfall at Blick Mead would not be affected by the Scheme. There are no significant effects predicted at Blick Mead [APP-282]. Therefore further investigations into the detail of Blick Mead would not change the outcome of the assessment.

At Item V (paragraph 6.8 of the Environment Agency's submission) the Environment Agency recognised that the magnitude of any drop in groundwater level due to the tunnel under peak conditions is likely to be insignificant in comparison to the seasonal rise but asked for demonstration of whether any fall that may extend as far as Blick Mead would be significant in comparison to the seasonal rise. The Applicant confirms that the reduction in groundwater levels down gradient (as a result of the presence of the tunnel) that could occur at peak times would be less than 0.02m at Blick Mead. At peak times there is a wetting depth of water of at least 0.35m, and probably more, at Blick Mead so the change in levels down gradient of the tunnel is not significant at Blick Mead.

The submission from the Consortium seeks to attribute views to the Environment Agency which are unsupported by the evidence. There were no further questions from the Environment Agency in its Deadline 4 submission in relation to Blick Mead and therefore the Applicant refutes the suggestion that the EA has no confidence in the conceptual model and refutes the suggestion that there could be a greater impact than currently predicted. The Environment Agency confirmed at issue specific hearing 2 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

reveal a greater impact upon groundwater than is currently predicted. With regard to the perched groundwater, the EA did not make any comment as to the impact of the road construction adjacent to Blick Mead. Further, the EA emphasised that construction methods may cause a change to the groundwater.

104. It is concerning that HE appear to be reluctant to be bound to the use of the particular closed bore tunnelling machine which is the equipment which has been assessed for the purpose of their hydrological modelling. It is understood that this machinery, as opposed to other types, would not require de-watering at the eastern end. If this machinery has formed the basis for the assessments and conclusions then clearly its use must be required within the DCO itself. In this regard the consortium agrees with the concerns expressed by the Council.

105. Before turning to the evidence of Dr Bradley, the Panel are requested to note that the Blick Mead project has engaged on this issue with HE for over a year and a half (see summary at APP-Rep 2-063). Their arguments have been based upon genuine expert opinions from archaeologists and hydrologists and should therefore be considered extremely carefully.

106. Further, HE had previously agreed that a 12 month monitoring period in line with tier 4 of Historic England's Guidance was required. This can be seen explicitly from, for example, the email from Chris Moore dated 2 May 2018 at p33 of APP- Rep 2 -063 and also the minutes of the scientific committee meeting on 10 May 2018, p30 of the same document and the meeting minutes of 3 August on p40. This clearly supports the validity of the consortium's concerns

the tunnel would result in any effect on the Blick Mead site". (Applicant's Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Agenda Item 8.ii) [REP4-030]).

In other words, the detail of the hydrology of the site will not affect the findings of the assessment because none of the sources of water (groundwater, rainfall and drainage) which contribute to and maintain the hydrology of Blick Mead will be affected by the Scheme and it therefore follows that the hydrology of Blick Mead will not be affected by the Scheme. Further detail on this point is provided in response to paragraph 34.1.263.

103. The OEMP (MW-WAT10) sets out a commitment to update the Groundwater Risk Assessment for the final design and construction plan. Therefore, if there are refinements to the Scheme as a result of detailed design or construction methods these changes will be addressed. However, please see the response to paragraphs 98 to 102 of the Consortium's submission above. As the Applicant has made clear, the Consortium seeks to present the views of the Environment Agency in a way that is not supported by the evidence. It is clear from the above response that the outstanding questions from the Environment Agency are limited to specific points of clarification and that it does not have significant concerns regarding the assessment of hydrological impacts at Blick Mead. As noted in response to CA point a) below, the Environment Agency stated the model was a good representation of the Chalk aquifer and shows no change in groundwater levels in the Blick Mead area.

104. It is incorrect that Highways England is reluctant to be bound to the use of the closed face tunnel boring machine (TBM). The use of a closed-face TBM for the main bored tunnels has been confirmed in the revised OEMP as submitted at Deadline 4 item D-CH-32 [REP4-020]. 105. Highways England met with Professor Brown on 16 April 2018 who stated that he does not have experience of the Avon valley geology at Blick Mead. Prior to the meeting we were led to believe this was the case and expected to be provided with data for use in the assessment. Professor Brown and Dr Bradley's submissions refer to Star Carr which is not comparable. We have had several meetings with Blick Mead representatives and have taken their views on board. Their focus on comparison with Star Carr is not appropriate (at the ISH2 Highways England explained that Star Carr was hydrologically not similar to Blick Mead,

and Dr Bradley agreed with this – see agenda item 8(iii) in the written summary of oral submissions [REP4-030]) and suggests that they do not have specific expertise in the hydrology at Blick Mead.

106. It is not correct to assert that HE had previously agreed to a 12 month monitoring period. On page 4 of APP-REP2-063 it is recorded that Highways England responded on 26.2.19 [83], denying any agreement to monitor the water table at Blick Mead over 12 months; he maintained the only agreement was to conduct the tiered assessment and to carry out monitoring in accordance with that. On page 11 Chris Moore confirms on behalf of Highways England that “the intention is to commence monitoring at the earliest opportunity, the monitoring will extend beyond 12 months and continue into the construction phase”. This *ongoing* monitoring is being discussed and agreed as part of ongoing monitoring for the Scheme. It is not however required to support the Environmental Statement which has been assessed for a range of hydrological conditions that exceeds those that might be recorded on site.

By way of further explanation see paragraph 26.3.8 of Deadline 3 Submission - 8.18 - Comments on Written Representations [REP3-013] which states that a twelve-month period is commonly used to define a hydrological baseline because it covers the seasonal lows and highs. A low water level and high-water level period have already been recorded (autumn 2018 and spring 2019) at Blick Mead [AS-022] and span the extremes of a typical twelve-month period. This is sufficient as a baseline and for correlation with long term records. There is no guarantee that conditions recorded over a typical twelve months will be representative of extremes. Therefore, the effects of the Scheme were assessed under a wider range of conditions than those likely to be experienced in a single year and include data from the drought of 1976 and floods of 2014.

The extent of monitoring and the scenarios under which the effects of the Scheme have been assessed are appropriate and acceptable for EIA and for the consideration and determination of the application.

34.1.45	EH’s Guidance	Please see the written summary of Highways England’s oral submissions made at ISH2 in relation to Agenda Item 8 (iii) [REP4-030] with respect to the Tiered Assessment and how the appropriate level is determined. The
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107. The relevant guidance is 'Preserving Archaeological Remains' (Historic England) and in particular appendix 3 'Water Environment Assessment Techniques'. [...]

108. It is concerning that on 6 June HE and Historic England stated that the test for moving up the tiers in the guidance was whether significant effects were established at each level. That test appears nowhere in the guidance. As the excerpt on p19 states, tier 4 may be required where 'there are concerns of water environment responses to development'. That is exactly the case here.

109. Further, the EA's representations to the examination demonstrate that there can be absolutely no certainty with regard to how the water environment at Blick Mead operates. This makes clear that HE's assessment is inadequate.

110. Finally, given the significance of Blick Mead and the potential for interruption in its water environment to lead to substantial harm, this is patently a case where a plan of mitigation is required in order to ensure that the scheme mitigates any impacts. That plan, which may include re-watering the site, requires a tier 4 assessment to have been undertaken so as to inform this mitigation (see p.19 of the guidance).

assessment, Appendix 11.4, Annex 3 Blick Mead Tiered Assessment [APP-282] was reviewed and accepted by Historic England's Senior Science Advisor and Wiltshire Council Archaeological Services' County Archaeologist.

108. The assertion from the Consortium misrepresents the Applicant's position. As recorded in the written summary of oral submissions made at the ISH2 [REP4-030] with respect to agenda item 8(iii), "*Dr Sladen [on behalf of Highways England] 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*". The reliability of the conceptual model has reached an acceptable level and has been verified by monitoring. A Tier 4 assessment is only required where mitigation is considered necessary to facilitate long-term preservation. As no significant effects were identified, no mitigation is necessary and therefore additional tiers of investigation and modelling are not required.

It is of note that the first page of the guidance (Historic England 2016 Preserving archaeological remains: Decision-taking for sites under development. Swindon. Historic England) states: "The emphasis throughout is on the benefits gained, both to sustainable development and the archaeological resource from understanding:

- the significance and current state of preservation of the archaeological material
- the potential development impacts of the proposed scheme"

It is therefore important to assess the significance of effects.

109. It is not correct to assert that there is no certainty as to how the water environment at Blick Mead operates in light of the Environment Agency's representations, nor that the Applicant's assessment is inadequate. A response to assertions about the Environment Agency's submissions is provided above in response to paragraphs 98 to 103 of the Consortium's submission. The Environment Agency has been provided with a response to questions on Blick Mead (paragraphs 33.2.6, 33.2.7 and 33.2.8 in the Environment Agency Deadline 4 comments). These responses confirm that groundwater level monitoring at Blick Mead supports the conceptual model i.e. the groundwater level in the underlying aquifer is such that there will

		<p>normally be upward pressure that assists in maintaining the wet conditions in the Mesolithic deposits. Rainfall will also provide a further mechanism for wetting of the Mesolithic deposits (Section 2.6 of Annex Appendix 11.4 Annex 3 Blick Mead Tiered Assessment [APP-282]). In terms of paragraph 110, this comment is addressed in response to paragraph 108 above. The assessment has not identified any likely significant effects for Blick Mead and as a result no mitigation plan is required.</p>
34.1.46	<p>Note of Dr Chris Bradley's evidence</p> <p>113. We are asking about the baseline – I completely concur with comments of EA – there is a possibility for movements down or up. Depending on water levels or the hydraulic head. The key thing is then how that translates to understanding the water table. The local boreholes that we have just heard about – there are two monitoring points. They are at depths of 3m. My understanding of the archaeology is that it is significantly closer to the surface where the water table regime will be influenced by clay and putty chalk. We were talking this morning about geological processes. Conditions through ice age - the chalk can be heavily weathered or it can be impermeable. What we can see in some areas is that the water table is isolated in some instances from the underlying groundwater. We don't know how particular the areas of clay are. They can be very spatially diverse.</p> <p>114. We don't know about the near surface stratigraphy and alluvial gravels.</p> <p>115. 3m boreholes are problematic because they are going into the chalk at 3m, from the exposed archaeology/deposits it is possible to identify areas of clay that look like putty chalk. Whilst I wouldn't expect that to be completely uniform across the whole surface it leads to a situation where the shallow water table may be isolated. There is a need for a four dimensional picture. Our proposal 18months ago would have been to investigate the local water table relationship to chalk groundwaters, model the buried archaeology, and the isotopic composition to see if it is precipitation or groundwater. If there were areas of groundwater close to surface</p>	<p>113. The groundwater levels support the conceptual model which shows that 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. Rainfall will also provide a further mechanism for wetting of the Mesolithic deposits (Section 2.6 of Appendix 11.4, Annex 3, Blick Mead Tiered Assessment [APP-282]). Vertical flow components can therefore be up or down depending on the hydrological conditions and the degree of interconnection between layers.</p> <p>114. Near surface stratigraphy and the geological setting is provided in the Blick Mead Tiered assessment (Annex 2 of the Groundwater Risk Assessment [App-282]).</p> <p>115. Groundwater levels are provided in AS-015 and do not demonstrate the presence of a permanent isolated shallow water table. The levels are consistent with the conceptual model of an upward head gradient with the saturated deposits at Blick Mead being fed from the Chalk aquifer beneath. The drilling results do not show any evidence of perched water or of a difference in groundwater level in different strata, and these results 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. Rainfall will also provide a further mechanism for wetting of the Mesolithic deposits. (Section 2.6 of Appendix 11.4, Annex 3, Blick Mead Tiered Assessment [APP-282]).</p> <p>116. The data is available. Groundwater level monitoring results are presented in the Blick Mead monitoring report [AS-015]. Groundwater levels in WS09 are generally higher than those in the shallower WS10. This does not demonstrate perched water but does verify the conceptual model of an upward head gradient with the saturated deposits at Blick Mead being fed</p>

then if rainwater was substituting that – change in pH which may affect preservation.

116. The focus of this is not on groundwaters, it is where the archaeology is. The point that the EA was making, in some cases the groundwater is coming up to the surface but at other times of year it may not be. At the moment we don't have the data to characterise what is happening.

117. Any change in water quality could be quite significant to the archaeology. For example, the substitution of rainwater for groundwater. We need to know much more about what is happening at a local site. The putty chalk could be of significance.

118. Where we have dry valleys we could have enhanced permeability and subsurface flow could be quite important in maintaining subsurface conditions.

119. If a 12 month monitoring program were undertaken we would develop a local numerical model which predicts what the water table would be. Local fieldwork through geophysical survey would help to look at how the water level would respond through hypothetical extreme events and how it responds to changes in rainfall. Therefore, the fact that a 12 month period might not pick up extremes would not limit the effectiveness of the monitoring.

120. In order to properly monitor and assess the potential impact upon Blick Mead there is a need for:

- a. shallow piezometers in areas which have been excavated,
- b. a model of flownet,
- c. geophysics to look at extent of weathered clay,
- d. look at the soil moisture characteristics, peaty or organic substrate,
- e. look at drought patterns.

121. Tony Brown sent a basis for monitoring/modelling water environment at Blick Mead in 2018.

from the Chalk aquifer beneath. In February 2019 the heads reversed as would be expected at times when rainfall recharge is occurring.

117. The Scheme will not affect the ground surface or infiltration characteristics at Blick Mead. Groundwater in the Chalk aquifer is recharged by rain. No effect on groundwater quality is expected.

118. It is generally accepted that dry valleys are associated with enhanced permeability. The chalk groundwater contours indicate the catchment to Blick Mead is from a dry valley to the north which may be as a result of typical enhanced permeability seen in dry valleys. The tunnel is to the west in a separate groundwater catchment outside this dry valley.

119. A local groundwater model would have boundary conditions of chalk groundwater inflows and runoff inflows from the A303. Neither of these will change under the scheme and therefore the predictive model would have no changes from baseline conditions. Therefore, a local model would provide no additional insights relevant to the scheme impacts.

120. There are no significant effects predicted at Blick Mead [APP-282]. Therefore, detailed investigations into the detail of Blick Mead would not change the outcome of the assessment.

121. See Deadline 1 Submission - Blick Mead - Note regarding proposals for additional monitoring [REP1-007] which explains why additional monitoring is not required to inform or confirm the assessment of the effects of the Scheme.

122. See response to 120 above.

123. The effects of the Scheme do not extend to the area identified in the assessment as Blick Mead.

124. The Blick Mead site assessed in the Environmental Statement is close to the low-lying area and intermittent spring.

125. It is unclear how the 'edge of the dry' is being defined. Groundwater levels will fall during drought conditions and will continue to do so. A cycle of drying and wetting currently takes place so the concept of protection by 10cm of water is not necessarily correct. Whether this is the case or not, nothing that supports the water environment at Blick Mead is being altered by the

	<p>122. The key points are that if we don't understand the hydrology of the site, without sufficient monitoring in place then we are unable to say whether any subsequent remedial work can be fit for purpose. One of the points of doing the tier 4 assessment would be to have confidence so that we can understand the hydrology at a sub 10m resolution. This is one of the issues of the catchment approach. The regional model of the EA is working in 200mx200m grid. Areas of archaeological interest are at sub-meter resolution. How you translate this?</p> <p>123. We don't know enough about spatial extent of Blick Mead - if the site extends across the floodplain then there may be other areas of significance or concern.</p> <p>124. Professor Jacques responded to the Inspector's questions regarding the impact of variations in the past and whether there are any implications for what that might mean in the future. He stated that the character and extent of the site is not very well known. This works in its favour. What can be seen is that peat levels have shrunk considerably along the line of the A303 – this might be for various reasons. It might be because it was upgraded in the late 1960s.</p> <p>125. The site is protected by about 10cm of water. We know that the Auroch footprints date before 6500 BC because we have secured dates from a layer immediately over them. We have to assume that they have been in permanently saturated conditions. They are right on the edge of the dry, they would be particularly delicate site artefacts. In any event we have only opened up the Auroch footprints to a tiny extent. We know that the laid surface extends for 30m there may well be other animal prints and ecological artefacts below it.</p>	<p>Scheme and therefore no effect on water levels is predicted as a result of the Scheme.</p>
<p>34.1.47</p>	<p>3. Article 31 of the Vienna Convention on the Law of Treaties 1969 requires a treaty to be interpreted in good faith and in accordance with the ordinary meaning of the words in their context and in light of the treaty's object and purpose. One can see that the duties are clear. Any harm to a World Heritage Site ('WHS') has the potential to breach either or both of these Articles. There is no support for a cost-benefit horse-trade approach in the WHC itself.</p>	<p>The Applicant has previously set out its position in relation to compliance with the World Heritage Convention, and the balancing approach that is to be adopted in determining whether the Convention is complied with and whether the Scheme conserves and protects the OUV of the WHS. The Applicant has also responded to the points raised by the Consortium in this respect at the ISH 2 and in its written summary (including post hearing notes) of the oral submissions made at that hearing. In particular the Applicant draws the</p>

Examining Authority's attention to the Applicant's written summary of oral submissions made at ISH2 [REP4-030] on pages 2-6, 2-8 and 2-9 and to Appendix A to that summary (which specifically addresses the assertions from the Consortium in paragraph 4 of its submission relating to the Australian Tasmanian Dam Case), and to the Applicant's response to first written question G.1.1 [REP2-021].

As set out in Appendix A to REP4-030, "[k]ey 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

		<p><i>under the World Heritage Convention, although Ms Hutton has not made that submission.”</i></p>
34.1.48	<p>4. Although it is not understood that there is any dispute that articles 4 and 5 lead to international obligations upon the United Kingdom³ it is worth highlighting the majority decision of Australia’s High Court in the Tasmanian Dam⁴ case which found the articles to amount to international obligations on Australia which is a signatory to the WHC. As to the strength of the obligation and the level of discretion it is worth noting the judgment of Brennan J at para.41:</p> <p>‘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 <i>Meehan v. Jones</i> [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:</p> <p>"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 <i>Placer Development Ltd.</i> (at p531)’</p>	<p>See Highways England response to paragraph 34.1.47.</p>

34.1.49	5. In this case the British Government has not made any representation or produced any evidence that it is unable to comply with its obligations under the WHC due to its having allocated resources elsewhere.	See Highways England response to paragraph 34.1.47.
34.1.50	<p>6. The Operational Guidelines of the WHC ('OGs') shed further light upon this issue. Paragraph 49 defines OUV as:</p> <p>'49. Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The Committee defines the criteria for the inscription of properties on the World Heritage List.' (emphasis added).</p>	<p>The Consortium asserts that, based on what it has set out in paragraphs 7 and 8 of its submission that it "is clear that harm to any of the criteria making up its OUV will breach the Convention", and that "harm to integrity ... will breach the Convention".</p> <p>In terms of "harm to any criteria", it is not apparent to the Applicant where in paragraphs 96 and 112 of the Operation Guidelines it is said that harm to any of the criteria making up the OUV will breach the Convention. Paragraph 96 states that "<i>Protection and management of World Heritage properties should ensure that their Outstanding Universal Value, including the conditions of integrity and/or authenticity at the time of inscription, are sustained or enhanced over time</i>". The HIA demonstrates that the Scheme will sustain the OUV of the WHS, have a slight beneficial effect on the WHS overall, and have a slight beneficial effect on its Integrity and Authenticity.</p> <p>Other paragraphs from the section of the Operational Guidelines referred to by the Consortium are consistent with this overarching intention of the guidelines to protect the OUV, integrity and authenticity of the WHS. For example:</p> <p><i>"98. Legislative and regulatory measures at national and local levels should assure the protection of the property from social, economic and other pressures or changes that might negatively impact the Outstanding Universal Value, including the integrity and/or authenticity of the property.</i></p> <p>...</p> <p><i>108. Each nominated property should have an appropriate management plan or other documented management system which must specify how the Outstanding Universal Value of a property should be preserved, preferably through participatory means."</i></p> <p>In terms of integrity of the WHS and paragraph 10 of the submission (below), as noted above, the Scheme is assessed to have a slight beneficial effect on</p>

		<p>the integrity of the WHS (this is to be compared with the existing A303 which is assessed to have a large adverse effect). There is no basis to suggest that <i>any</i> harm to the wholeness or intactness of the WHS will breach the Convention.</p> <p>In terms of the Operational Guidelines, the Consortium does not offer any authority for its assertion that they are the “sole authoritative guidance” on the Convention. The Applicant is not aware of any authority establishing them as such.</p>
<p>34.1.51</p>	<p>8. In order to qualify as having OUV potential WHSs need to display one or more of certain criteria (listed in pra.77) together with meeting conditions of integrity and/or authenticity. It can be noted that integrity is a measure of wholeness or intactness (para 88). The OG is absolutely clear that the protection and management of WH properties means ensuring that all aspects of the OUV including conditions of integrity and authenticity at the time of inscription are sustained and enhanced over time. Paragraphs 96 and 112 are highly relevant:</p> <p>‘96. Protection and management of World Heritage properties should ensure that their Outstanding Universal Value, including the conditions of integrity and/or authenticity at the time of inscription, are sustained or enhanced over time. A regular review of the general state of conservation of properties, and thus also their Outstanding Universal Value, shall be done within a framework of monitoring processes for World Heritage properties, as specified within the Operational Guidelines’</p> <p>112. Effective management involves a cycle of short, medium and long-term actions to ‘protect, conserve and present the nominated property. An integrated approach to planning and management is essential to guide the evolution of properties over time and to ensure maintenance of all aspects of their Outstanding Universal Value. This approach goes beyond the property to include any buffer zone(s), as well as the broader setting. The broader setting, may relate to the property’s topography, natural and built environment, and other elements such as infrastructure, land use patterns, spatial</p>	<p>See Highways England Response to paragraph 34.1.50.</p>

	organization, and visual relationships. It may also include related social and cultural practices, economic processes and other intangible dimensions of heritage such as perceptions and associations. Management of the broader setting is related to its role in supporting the Outstanding Universal Value.’ (emphasis added).	
34.1.52	<p>9. Therefore the OG is clear that:</p> <p>a. harm to any of the criteria making up its OUV will breach the Convention; and</p> <p>b. harm to integrity – i.e. to the wholeness or intactness of the WHS will breach the Convention.</p>	See Highways England Response to paragraph 34.1.50.
34.1.53	<p>10. These harms cannot be balanced/traded off against benefits to other criteria or benefits to other parts of the WHS. With regards to the latter, ‘integrity’, it is clear that there cannot be a geographical trade off i.e. harm to one area and benefit to another. Harm to the wholeness or intactness of one area of the WHS will cause harm to the entirety of the WHS. Interestingly on 5 June during discussions regarding the significance of Blick Mead, HE expressed the view that if one were to harm the Stonehenge component of the WHS that would amount to harm to the whole (including Avebury), the phrase used was ‘harm to one component is harm to all’. We entirely agree.</p>	<p>The comments attributed to “HE” were made by Historic England at ISH 2, where Mr Owen John of Historic England explained (in response to comments that the impact on Avebury had not been considered) that:</p> <p><i>“In relation to the relationship between Stonehenge and Avebury, the key point there is if you have “serial world heritage properties” with more than one geographical component it is a requirement of the Operational Guidelines that each component has to be able to make a substantial contribution to the OUV of the property as a whole, and clearly in the case of Stonehenge and Avebury that is the case. What that means in terms of the heritage impact assessment is that the heritage impact assessment in this case rightly focusses on the impact on the Stonehenge component, and any potential harm to the Stonehenge component would constitute harm to the OUV of the property as a whole including Avebury. What is not required is a separate heritage impact assessment for the impacts on Avebury itself some kilometres away.</i></p> <p><i>[Mr Owen John then gave examples of other serial properties in Cornwall and West Devon and at Hadrian’s Wall]</i></p> <p><i>... harm to one component part is harm to all”.</i></p> <p>The Deadline 4 submission from Historic England also summarised its submissions [REP4-085] as follows:</p>

“3.1.1 The Stonehenge, Avebury and Associated Sites World Heritage Site is a serial WHS property in that there is a direct relationship between “Stonehenge” and “Avebury”. The Operational Guidelines for the Implementation of the World Heritage Convention (2017)² require that each component makes a substantial contribution to the OUV as a whole. Here the focus is on the Stonehenge component as any particular harm to the Stonehenge component would represent harm to the OUV as a whole and consequently also to Avebury. A separate assessment of what impact there is on Avebury is therefore not required.

3.1.2. In our oral submissions we provided the example from Cornwall which is mentioned in our Written Representation (Section 6.9.4, fn. 36) by way of explanation. The Cornwall and West Devon World Heritage Site is also a serial property made up of 10 component parts and the proposal we described at Hayle affected only one component. It was taken that the impact of the proposal on this one component would result in harm to the whole WHS, as the part affected makes a substantial contribution to the OUV for the site as a whole.

3.1.3. The World Heritage List also includes a number of serial transnational World Heritage Sites. We provided the example of the Frontiers of the Roman Empire, currently comprising Hadrian’s Wall in England, the Antonine Wall in Scotland and part of the Roman Frontier in Germany. In dealing with a proposal on Hadrian’s Wall, with potential for development to impact on OUV, then the transnational nature of the WHS would result in an expectation for liaison between the UK Government with counterparts in Scotland and Germany. However, this would not require consideration of how the development would impact on the WHS components in either Germany or Scotland, other than through the fact that harm to the OUV on Hadrian’s Wall would represent harm to the whole of the WHS property.”

From the context of the submissions made by Historic England, it is clear the point was that by not carrying out a heritage impact assessment for Avebury, it could not be said that the whole WHS had not been considered. This is because for a serial WHS, it was acceptable to assess the impact on the component that would be affected. Because that component must contribute substantially to the OUV of the WHS, harm to that component that would constitute harm to the OUV would have the effect of harming the WHS

		<p>overall. Highways England does not understand Historic England to be saying that <i>any</i> harm to <i>any</i> part of the WHS constitutes harm to its OUV or to the WHS as a whole. That interpretation would be inconsistent with other submissions put by Historic England at the hearings, for example in relation to agenda item 3(vi) at ISH2 (see the Applicant’s summary of oral submissions [REP4-030]):</p> <p><i>“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 benefits (both heritage and wider benefits, including economic and social benefits to local communities).”</i></p>
34.1.54	<p>11. At the hearing on 5 June ICOMOS UK clearly expressed why the site must be considered as a whole. Ms Denyer stressed that the Stonehenge WHS is one single entity not just the main monument, which is the ‘icing on the cake’, which was in fact constructed much later than the earlier monuments and within which it forms a network of sites. She stressed that this landscape is not just a landscape of random sites but a landscape of sites that have planned interrelationships of various sorts which are both visual and spatial. This was emphasised by Paul Garwood, senior lecturer in Archaeology at Birmingham University and member of the consortium of archaeologists.</p>	<p>The submission of ICOMOS UK was responded to at the Issue Specific Hearing, as recorded on page 2-9 in relation to agenda item 4(i), (ii) and (iii) of the written summary of oral submissions from ISH2 [REP4-030] as follows:</p> <p><i>“Consideration on asset by asset basis – 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]).”</i></p>
34.1.55	<p>12. That this is the correct interpretation of the application of Articles 4 and 5 of the WHC is strongly supported by the continuing objection of the World Heritage Committee and also ICOMOS which acts as an adviser to the committee. The repeated and explicit submissions of ICOMOS in relation to how the WHC is to be applied are forceful and should be given full weight.</p>	<p>The Applicant’s submissions with respect to the interpretation of the application of Articles 4 and 5 are set out above in response to paragraphs 3-5 of Part 3 of the Consortium’s submission. The assertion from the Consortium appears to equate the submissions made by ICOMOS UK during the course of the Examination with the views of ICOMOS, the adviser to the UNESCO World Heritage Committee. The Applicant’s understanding is that ICOMOS UK is an independent charity and the UK national committee of ICOMOS (ICOMOS having a special role as official adviser to UNESCO on</p>

		<p>cultural World Heritage Sites). The Applicant does not understand that ICOMOS UK's involvement and submissions during the course of the Examination are on behalf of or are directly informed by ICOMOS itself. Whilst the Applicant acknowledges the role of ICOMOS UK, the distinction is important to bear in mind. ICOMOS UK is not the authoritative source of interpretation of the WHC – ultimately that lies with the courts. Weight should therefore be given to submissions on interpretation of the WHC according to the strength of their argument and reasoning, not who made them.</p> <p>It is also noted that the submissions made by ICOMOS UK as to the interpretation of the World Heritage Convention are at odds with the views of Historic England, Wiltshire Council and the National Trust as recorded in the written summary of oral submissions from ISH2 with respect to Agenda item 3(vi) [REP4-030].</p>
34.1.56	<p>13. At the hearing on 5 June, HE sought to place weight on ICOMOS' 'Guidance on Heritage Impact Assessments for Cultural World Heritage Properties' (January 2011). This guidance concerns methodology of impact assessments and, contrary to the OGs, is not authoritative guidance with regards to the implementation of the WHC. In any event nowhere in that guidance is it stated that one can trade off harm to one criterion of OUV against purported benefit to another nor does it state that one can trade off harm to one area of a WHS against purported benefit to another. The fact that ICOMOS UK has repeatedly stated to this examination that HE's approach is incorrect clearly indicates that HE's interpretation of this guidance is wrong.</p>	<p>The Applicant has not stated that the ICOMOS HIA Guidance expressly addresses how the World Heritage Convention is to be interpreted. However, the guidance has clearly been prepared in the context of heritage impact assessments being undertaken in order to assess the impact of development on a World Heritage Site and its OUV, for the clear purpose of establishing whether a development maintains the protection and conservation of a WHS required by the Convention. It would be remarkable if the ICOMOS Guidance advocated an approach which was inconsistent with the World Heritage Convention. Rather, the guidance should be approached on the basis that it is consistent with the requirements of the Convention, since it advocates a balanced approach to decision-taking that is strong support for the Applicant's interpretation of the Convention. This also indicates that the position of ICOMOS UK is inconsistent with the ICOMOS Guidance and is thus wrong in law.</p> <p>The ICOMOS HIA Guidance is therefore important and relevant to the Examining Authority's and Secretary of State's decision. This is reflected by section 2.1 of the guidance which states (under the heading "Suggested procedures for heritage impact assessment"):</p> <p><i>"2-1-1 This section is intended to help to States Parties, heritage managers and decision-makers or others in managing their WH properties in circumstances where some form of change may affect the Outstanding</i></p>

		<p><i>Universal Value (OUV) of those sites. Change may be adverse or beneficial, but both need to be assessed as objectively as possible, against the stated OUV as reference point.</i></p> <p><i>2-1-2 The guidance is a tool to encourage managers and decision-makers to think about key aspects of heritage management and to make decisions based on evidence within the framework of the 1972 World Heritage Convention.”</i></p> <p>With reference to the final sentence and to the extent the Consortium seeks to imply that ICOMOS UK is the author or owner of the ICOMOS HIA Guidance, the Applicant refers the Examining Authority to its response to paragraph 12 of the Consortium’s submission.</p>
<p>34.1.57</p>	<p>14. Turning to national policy. There is no provision in the NPPF, NPS, PPG or the World Heritage Site Management Plan 2015 (the latter of which the HIA states is part of the Government’s implementation of the WHC p.32) which supports the view that one can:</p> <p>a. balance harm to a criterion of OUV against benefit to another criterion to arrive at a neutral or net positive impact and thereby avoid breaching the convention; or</p> <p>b. that, similarly, one can balance harm to part of the WHS against benefit to another part.</p>	<p>The Applicant disagrees with this assertion for the reasons set out in the Applicant’s response to the Consortium’s submissions at paragraph 3-5 above and paragraphs 15 and 16 below.</p>
<p>34.1.58</p>	<p>15. Rather, the Management Plan which is the most detailed and relevant document in terms of the application of the WHC to the WHS, clearly indicates that such an approach is not permissible. Paragraph 1.3.1 states that: ‘To sustain the OUV, it is necessary to protect and manage all the attributes of OUV which contribute towards it.’ Further the policies within the Management Plan indicate that the trade-off approach is inappropriate:</p> <p>a. policy 1d states ‘Development which would impact adversely on the WHS, its setting and its attributes of OUV should not be permitted.’</p>	<p>There is no requirement in the WHS Management Plan to avoid <i>all</i> adverse impacts on the OUV of the WHS. Nothing in the policies quoted states such a requirement. The emphasis in the Management Plan is very much on protecting the WHS through the maintenance of its OUV; and the Scheme achieves this primary aim.</p> <p>The Management Plan does not advocate total protection of the WHS but acknowledges that management of the WHS should be sustainable (i.e. reflecting that there are economic, social and environmental factors to be balanced) and will need to balance other considerations. The Management Plan provides:</p>

	<p>b. policy 3a states 'Manage the WHS to protect the physical remains which contribute to its attributes of OUV and improve their conditions'</p> <p>c. policy 3e states 'Conserve and/or make more visible buried, degraded or obscured archaeological features within the WHS without detracting from their intrinsic form and character'</p>	<p><i>"The ongoing and overarching priority of the Management Plan is to encourage the sustainable management of the WHS, balancing its needs with those of the farming community, nature conservation, access, landowners and the local community" (Under the heading Priorities for 2015-2021 on page 11).</i></p> <p><i>"1.1.7 It is essential that all change is carefully planned and that competing uses are reconciled without compromising the overriding commitment to protect the Site and maintain its OUV. WHS Management Plans are intended to resolve such potential conflicts and to achieve the appropriate balance between conservation, access and interpretation, the interests of the local community, and the sustainable economic use of the Site. They must also be capable of being implemented within the means available to achieve this."</i></p> <p>The Consortium asserts that the Management Plan is the most relevant document in terms of application of the World Heritage Convention to the WHS. As set out above in response to the Consortium's points at paragraphs 3-5, the World Heritage Convention's requirements are implemented through the NPSNN, NPPF (as acknowledged by the Management Plan itself and recorded below in response to paragraph 17 of the Consortium's submission) and Planning Act 2008 provision.</p>
34.1.59	16. There is no suggestion throughout the entirety of the Management Plan that a trade-off approach is acceptable under the terms of the WHC obligations.	Please see Highways England response to paragraph 34.1.58
34.1.60	<p>17. Any contention that the NPS implements the WHC and therefore if the terms of the NPS are complied with then so too is the convention is fundamentally flawed for the following reasons:</p> <p>a. First, there is no statement in the NPS or outwith the NPS that states that it is the Government's view that it complies with the WHC/represents the transposition of the WHC into UK policy;</p> <p>b. the NPS, like the NPPF, applies the same policy restriction to WHS' as it does to other designated heritage assets (see para</p>	Please see the Applicant's response to the Consortium's paragraphs 3-5 above, which demonstrates how the NPSNN implements the World Heritage Convention, incorporates the balancing exercise and also considers the implications of the Consortium's contention, which is that if the NPSNN does not implement the World Heritage Convention nor reflect the protection given to World Heritage Sites, the NPSNN has been adopted unlawfully, as the policy would be inconsistent with the UK's international obligations. The Applicant is not aware of any suggestion at consultation or since its adoption that the approach to WHSs in the NPSNN is unlawful. As noted by the

5.131) there is no indication that their international status and protection by the WHC has appropriately been recognised/taken into account;

c. there is no recognition of the OGs which state that all criteria of OUV must be maintained;

d. The relevant provisions of the NPS do not, in any event, support the trade-off approach.

Applicant at the ISH2, one of the consultees to the NPSNN was ICOMOS UK, and there has been no suggestion by ICOMOS UK that the approach to WHSs in the NPSNN is unlawful.

The same applies with respect to the NPPF, given the similar approach it takes to protection of heritage assets and the balancing of harm. The Consortium's position would presumably result in the UK failing to have implemented its obligations under the World Heritage Convention, although the Consortium has not made that submission.

The Applicant's position is consistent with the WHS Management Plan 2015 which provides at paragraph 1.1.1:

"World Heritage Sites are recognised as places of Outstanding Universal Value under the terms of the 1972 UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention). By signing the Convention, the United Kingdom Government has undertaken to identify, protect, conserve, present and transmit such Sites to future generations (UNESCO 1972, Article 4). It is for each government to decide how to fulfil these commitments. In England, this is done through the statutory spatial planning system, designation of specific assets and the development of WHS Management Plans."

And at paragraphs 4.2.9 and 4.2.10:

"4.2.9 ... The NPPF encompasses the protection of the WHS and its attributes and components as defined for each WHS. At paragraph 029 it confirms that Statements of OUV are 'key reference documents for the protection and management of each Site and can only be amended by the World Heritage Committee'.

4.2.10 Notably the NPPF PPG underlines the principles that need to be satisfied by policy frameworks at all levels including Local Plan policies and in any decisions including: protecting the WHS and its setting from inappropriate development; striking a balance between the various other values associated with the WHS including its sustainable economic use; protecting the WHS from the cumulative impacts of minor changes; enhancing the WHS and its setting through positive management; and protecting the WHS from climate

		<p><i>change but ensuring mitigation measures do not harm its integrity or authenticity.”</i></p>
34.1.61	<p>18. Finally, common sense militates against a trade-off approach to the convention for the following reasons:</p> <ul style="list-style-type: none"> a. the WHS has been deliberately designated in its entirety and the protections of the WHC apply to the whole area; b. the operational development relating to the road scheme will result in the permanent and irreversible destruction and sterilisation (in archaeological terms) of approximately 10ha [HE has been asked to confirm the exact area] area of the WHS; c. if HE’s position is to be accepted then the larger the WHS the more scope there would be for harm to certain areas so long as other areas were improved; that is nonsensical; d. further, the more attributes of OUV which a WHS possesses the more harm could potentially be done so long as other of the attributes were benefitted. Again, that would be nonsensical; e. the result of HE’s argument is to state that it is permissible to wipe out the heritage significance of one area of the WHS and concentrate the benefits elsewhere. This fundamentally misunderstands the point that the entirety of the WHS benefits from protection and that one of the reasons it is designated is its integrity (or its wholeness or intactness). It is no answer to this point to state that because the existing A303 would be removed the impact of the operational development would be counterbalanced. The removal of the A303 does not replace the artefacts which were once in the ground in the scheme footprint, indeed it cannot; and f. HE’s approach leads to the very real potential for a ‘death by 1000 cuts’ with development permissibly destroying physical elements within the WHS and purporting to balance this against the improvement of the setting/experience of other parts. This 	<p>The Applicant has set out (with reference to the WHC and case law) why a balancing approach is both acceptable and necessary in a decision maker’s assessment of the effect of the Scheme on the WHS and its OUV, in line with the NPSNN. This is above in response to paragraphs 3-5 of the Consortium’s submission and in the documents to which that response directs the Examining Authority. Integrity of the WHS is specifically considered in the HIA, which concludes that the scheme has a slight beneficial effect upon it. The various other points made in this submission are also dealt with in the above responses to Part 3 of the Consortium’s submission.</p> <p>The assertion that Highways England has underestimated the harm caused by the Scheme and overstated its benefits has been repeatedly addressed by the Applicant, including in earlier responses to this submission.</p>

	approach is antithetical to the designation of the site as a whole on the basis of specific and fixed criteria.	
34.1.62	<p>19. In conclusion, it is clear that the cost-benefit approach of HE to the attributes, integrity and authenticity of the WHS is unlawful under the WHC. Therefore, notwithstanding the fact that HE has underestimated the harm caused by the scheme and overstated the benefits, even on its own analysis it is in breach of the WHC due to its reporting of harm to the following elements of OUV:</p> <ul style="list-style-type: none"> a. the physical remains of the Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to the landscape (pp32 and 24 HIA); b. the siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to the landscape (pp24 and 25 HIA) c. the siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to each other (p.27 HIA) d. the disposition, physical remains and settings of the key Neolithic and Bronze Age funerary, ceremonial and other monuments and sites of the period, which together form a landscape without parallel (p.27 HIA); e. integrity (see p.29 HIA); and f. authenticity (p.30 HIA). 	Please see Highways England response to paragraph 34.1.61.
34.1.63	<p>Part 4 Note from Dr Chris Bradley and Professor Tony Brown on adequacy of the tiered assessment and potential impacts of the scheme</p> <p>Submission regarding the Hydrology of Blick Mead prepared following oral evidence presented at the hearing</p>	<p>The Applicant disagrees. There has been sufficient evaluation of the hydrology of Blick Mead (including the interaction between surface water and groundwater). Details are set out in the Tiered Assessment (Annex 3 [APP-282]) and followed up in the Issue Specific Hearing (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]).</p> <p>None of the sources of water (groundwater, rainfall and drainage) which contribute to and maintain the hydrology of Blick Mead will be affected by the</p>

	<p>We believe that there has been insufficient evaluation of the interaction between groundwater and surface water at Blick Mead [...]</p>	<p>Scheme and it therefore follows that the hydrology of Blick Mead will not be affected by the Scheme.</p> <p>Regarding groundwater, in the ISH point 8 iii [REP4-030] the Environment Agency was satisfied that there is no change in groundwater levels in the Blick Mead area and Historic England confirmed that they were satisfied with the Tiered assessment on the basis of the conceptual model.</p> <p>Regarding rainfall, the Tiered Assessment states that rainfall will also provide a further mechanism for wetting of the Mesolithic deposits (Section 2.6 of Annex, Appendix 11.4 Annex 3 Blick Mead Tiered Assessment [APP-282]). Rainfall at Blick Mead will not be affected by the Scheme.</p> <p>Regarding drainage, this will not be changed at Blick Mead. Figure 5.2, Blick Mead Drainage Catchment Comparison in ES, Appendix 11.3 Road Drainage Strategy [APP-281], illustrates the catchment areas contributing to the surface water discharge from the existing highway and post construction of the scheme at location identified as “A” on the existing highway boundary ditch at Blick Mead. Furthermore, paragraph 5.2.5 of the strategy commits to a design which will maintain similar flows in the proposed and current situations at this location (compliance with which is secured through Requirement 10 of the dDCO). Drainage at Blick Mead will not be affected by the Scheme.</p> <p>The evaluation of the hydrology of Blick Mead (including the interaction between surface water and groundwater) is appropriate and acceptable for EIA and for the consideration and determination of the application.</p>
<p>34.1.64</p>	<p>Hydrology of Blick Mead</p> <p>Our understanding is that all parties accept the importance and significance of the Mesolithic site, Blick Mead, which is situated on the northern margin of the River Avon floodplain and which extends to within metres of the A303. It is very rare to find settlement sites of this nature within the World Heritage Site, and the buried archaeology has enormous research potential (see archaeological submission).</p>	<p>The Applicant does not dispute the significance of Blick Mead as a site of potentially national importance (the Applicant has responded above to submissions in relation to the site’s significance). The Applicant’s position regarding the effects of the Scheme on the hydrology of the site is discussed above. The Scheme will not result in any direct loss of archaeological remains at Blick Mead.</p>

34.1.65	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>The nature of the archaeology, which includes bone and plant remains, at Blick Mead is such that its preservation over the past 7,000 years is quite remarkable in that it indicates the maintenance of saturated conditions throughout this period of time. By inference this suggests that there has been a lack of effective drainage in the vicinity of the site, and a relatively stable hydrological regime (Brown 1995). The latter suggests that the acknowledged seasonal fluctuations in chalk groundwater levels, and in surface saturation, are not evident at depths of ~1m below the surface where the archaeology is found.</p>	<p>Groundwater levels are being recorded at Blick Mead and fell to less than 67.8m aOD in the autumn of 2018. Depending on the depth of artefacts and the severity of a drought it is possible that groundwater levels have fallen below the level of the archaeological and ecological artefacts found between 67.85m OD and 66m OD and that saturated conditions have not always been maintained. As stated in Annex 3 of the Groundwater Risk Assessment [APP-282] paragraph 3.1.1; Groundwater levels in the underlying aquifer are generally above 68m aOD, although could potentially drop below the upper level of the Mesolithic deposits layer towards 67.5m aOD for a number of months in a natural drought.</p>
34.1.66	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>Despite the acknowledged importance of Blick Mead, we believe that at present there is insufficient understanding of the hydrology of the site given that opportunities to implement an effective hydrological monitoring regime, under a tier 4 assessment (Historic England 2016) have not been pursued. With this caveat, however, it is possible to infer the likely patterns of water movement to, and through, Blick Mead in the context of the surrounding groundwater catchment as summarised in the following paragraphs.</p>	<p>Please also see response to paragraph 34.1.63. The Applicant disagrees. There is sufficient understanding of the hydrology of Blick Mead to be able to demonstrate that the hydrology of Blick Mead will not be affected by the Scheme and for the consideration and determination of the application.</p> <p>Monitoring of surface water and groundwater in and around Blick Mead has taken place and is continuing (see AS-015 Additional Submission accepted at the discretion of the Examining Authority - Blick Mead monitoring to March 2019). Additional monitoring is not required to inform or confirm the assessment of the effects of the Scheme. See Deadline 1 Submission - Blick Mead - Note regarding proposals for additional monitoring [REP1-007]. As stated at 1.4.2 of that report, “additional piezometers to infill the existing array will not add significantly to the conceptual model of the groundwater flow which is supporting the wetting of the site. The Scheme will have a negligible effect on groundwater levels at the site so there is no mechanism for impacts. As such, this additional monitoring is not required to inform or confirm the assessment of the effects of the scheme”.</p>
34.1.67	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>The water-table regime in Blick Mead will be strongly influenced by the extent to which water is able to move from the site, across the</p>	<p>It is agreed that the hydrogeological regime is influenced by regional groundwater flow and baseflow to the River Avon as set out in the conceptual model in the Groundwater Risk Tiered Assessment [APP-282]. Local monitoring is in place with piezometers at different levels; these are more reliable than piezometer nests. The monitoring also includes the River Avon</p>

	<p>floodplain to the River Avon. The alluvial deposits of the floodplain will be moderately to highly permeable, although without a local monitoring network (e.g. shallow piezometer nests), the rate and direction of water movement is unclear. For example, previous work on the floodplain of the River Lambourn (a chalk catchment in the Berkshire Downs) identified a range of processes that controlled the shallow groundwater table and the direction of groundwater movement through the Chalk was found to differ from that through the alluvial aquifer (Grapes et al. 2006). A comparable situation is likely to exist on the Avon floodplain near Blick Mead.</p>	<p>(see AS-015 Additional Submission accepted at the discretion of the Examining Authority - Blick Mead monitoring to March 2019). The existing monitoring array is 'triangulated' so that the direction of water movement can be assessed.</p> <p>It is unclear why the River Lambourn catchment study would be needed to explain the setting at Blick Mead. They are in different locations and there is nothing to support the assertion that they are comparable. The relevant hydrological processes at Blick Mead are referred to in the Tiered Assessment (Annex 3 [APP-282]) and Comments on Written Representations paragraphs 60.3.7 to 60.3.13 [REP3-013] and followed up in the Issue Specific Hearing (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]). There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement or examine and determine the application.</p>
34.1.68	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>Further complexity is introduced at Blick Mead by the stratigraphy of the site, and particularly the distribution of horizons of markedly varying permeability, which are likely to include weathered chalk (highly permeable where fractured); alluvial sands and gravels (highly permeable); putty chalk (Younger 1989; see Annex); head deposits (variable permeability). As discussed in Dr Chris Bradley's oral evidence, the patchy distribution of putty chalk at Blick Mead may impede drainage locally, and reduce some of the water-table variability at points of significant archaeological interest.</p>	<p>It is agreed that the stratigraphy at the Blick Mead site is complex but the key hydrological processes at the site have been explained and a conservative approach taken. There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the stratigraphy, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement. The conceptual model provided in the Environmental Statement still stands (Highways England - Blick Mead - Note regarding proposals for additional monitoring [REP1-007]).</p>
34.1.69	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>In summary, the hydrology of Blick Mead is significantly more complex than presented in the documentation by Highways England</p>	<p>The Applicant disagrees. There has been sufficient evaluation of the hydrology of Blick Mead to understand the key processes. Details are set out in the Tiered Assessment (Annex 3, APP-282] and Comments on Written Representations paragraphs 60.3.7 to 60.3.13 [REP3-013] and followed up in the Issue Specific Hearing (Deadline 4 Submission - 8.30.2 Written</p>

	<p>(11.4 Annex 3 Blick Mead). The water table regime in the vicinity of the buried archaeology is likely to be maintained by waters that have followed a variety of flow pathways including deep and shallow groundwater, drainage, and local precipitation. The importance of these distinct water sources to the total water budget of Blick Mead will vary seasonally, but there are also likely to be marked spatial variations in patterns of saturation (reflecting differences in water inflow, and the distribution of relatively impermeable units such as the putty chalk). Consequently, in some places groundwater may be 'perched' above the regional water-table, while elsewhere, the different water types may be well mixed.</p>	<p>summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]).</p> <p>None of the sources of water (groundwater, rainfall and drainage) which contribute to and maintain the hydrology of Blick Mead will be affected by the Scheme and it therefore follows that the hydrology of Blick Mead will not be affected by the Scheme. Please also see the response in paragraph 34.1.63 which outlines the key processes.</p> <p>Regarding perched water, the Applicant agrees with the comment from the Environment Agency 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" (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.ii) [REP4-030]).</p> <p>There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the Environmental Statement, and examine and determine the application.</p>
34.1.70	<p>Hydrology of Blick Mead</p> <p>1. Conceptual understanding</p> <p>It is pertinent to point out that, for the reasons outlined above, an offer was made to Highways England, with the support of Historic England, first in February of 2018 and repeated in April 2018 that a site-specific monitoring programme be instigated, which could by now have gathered at least 12 months of valuable data.</p>	<p>The response to the request from Professor Jacques for further monitoring is set out in the Deadline 1 Submission - Blick Mead - Note regarding proposals for additional monitoring [REP1-007]. Further monitoring installations are not required to support the Environmental Statement.</p>
34.1.71	<p>Hydrology of Blick Mead</p> <p>2. Implications of the A303 development.</p> <p>[...] We believe that there has been insufficient evaluation of the interaction between groundwater and surface water at Blick Mead</p>	<p>There is site-specific monitoring at Bick Mead which covers the hydrological low of 2018 and the water table rise of 2019 as described in the monitoring report AS-015. The monitoring is ongoing.</p> <p>See response to paragraph 34.1.63. The Applicant disagrees. There has been sufficient evaluation of the hydrology of Blick Mead (including the</p>

and this section builds upon the conceptual understanding of the site (presented above) to outline a number of areas of concern:

i. Evaluation of groundwater flow to Blick Mead.

Highways England suggest that there will be no impact on groundwater flow following construction of the tunnel. However, there are several shortcomings with the modelling work that is used to support this conclusion:

a. Individual model cells have dimensions of 250 x 250 m and at this scale, the model is unable to replicate the observed patterns of groundwater flow to Blick Mead (e.g. the effects of water flow from a dry valley to the north). For comparison this cell size is far larger than the entire archaeological site at Blick Mead.

b. The groundwater model considers the chalk and surficial deposits to comprise one hydrogeological layer. Hence it is not possible to distinguish between deep groundwater flow (through the chalk matrix) and shallow groundwater flow (through near-surface fractures). Moreover it is not possible to represent the effects of the putty chalk on the hydrology of Blick Mead (and hence investigate the hydrology of any areas of perched groundwater). Coring by members of the Blick Mead team from the University of Southampton and previously by the University of Reading have shown there are at least three sedimentary units underlying the site which have variable permeability.

c. Given the scale, the representation of the valley bottom / floodplain hydrogeology will be inadequate. This limits the utility of the model to replicate spring flow, and quantify the effects of any changes in base flow (which affects drainage from Blick Mead).

d. There is insufficient field data to evaluate model results: as noted below, at present there is only one monitoring point at Blick Mead, and no information is provided on the accuracy of model output.

In earlier discussions with Highways England we indicated the importance of understanding the hydrology of Blick Mead at a sub

interaction between surface water and groundwater). Details are set out in the Tiered Assessment (Annex 3, [APP-282]) and followed up in the Issue Specific Hearing (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii [REP4-030]). There are no shortcomings to the modelling work. Explanations are as follows:

- a) It is confirmed that the model cell dimensions are 250 m x 250 m. The model is assessing regional flow and not the detail of flow processes at Blick Mead. The adequacy of the groundwater model was discussed in ISH 5 Item 5.1. i). It is an Environment Agency model and is an accepted method for simulating groundwater flow at a regional scale. At ISH 8 the Environment Agency stated the model was a good representation of the Chalk aquifer and shows no change in groundwater levels in the Blick Mead area (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 5.1 i) and 8.iii) [REP4-030]).
- b) The groundwater model is a single layer which simulates regional flow. There is no evidence of shallow and deep flow horizons which would need to be modelled separately. Moreover the comment that deep groundwater flows through the chalk matrix is questionable. The Chalk is a dual porosity medium with groundwater flow principally through fractures and fissures (Paragraph 3.6.2 of Appendix 11.4 Groundwater Risk Assessment [APP-282]). It is agreed that, at the local scale, there are different units with variable permeability at Blick Mead but this level of detail is not necessary to assess the effects of the Scheme.
- c) The model is adequate to simulate valleys and interfluves between valleys (see Section 2.2.11 of Appendix 11.4 [APP-282]). The model also simulates baseflow; see 2.4.5 [APP-282] which states that in the study area the groundwater flow pattern is well calibrated, showing groundwater flow south into the Stonehenge Bottom valley area from the north, with flow to the west to discharge to the River Till and flow east to the River Avon. The model is therefore adequate to assess changes in baseflow.

10m2 scale: this requires a modelling approach that is an order of magnitude more detailed than that currently available.

The model also simulates spring flow. This is the appearance of water at surface when the water table is high enough to intersect ground level (as noted at 60.3.11 in Deadline 3 Submission - 8.18 - Comments on Written Representations [REP3-013]). An assessment of the effects of the Scheme on spring flow is included in Appendix 11.4 [APP-282] in Table 4.4: Predicted range of groundwater level change at springs during drought. The predicted change in level at Amesbury Abbey spring close to Blick Mead is negligible (0.001m). During drought periods there is no spring flow at Blick Mead because groundwater levels are too low.

d) The groundwater model is simulating regional flow and the effects of the Scheme. There is sufficient field data to evaluate results and the model has been calibrated as described in Appendix 11.4 Annex 1 Numerical Model report. It is not necessary to simulate the detail of all processes at Blick Mead in order to assess the effects of the Scheme. At ISH 8 the Environment Agency stated the model was a good representation of the Chalk aquifer and shows no change in groundwater levels in the Blick Mead area. (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]). The Environment Agency also stated 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” (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.ii) [REP4-030]).

In other words, the detail of the hydrology of the site will not affect the findings of the assessment because none of the sources of water (groundwater, rainfall and drainage) which contribute to and maintain the hydrology of Blick Mead will be affected by the Scheme and it therefore follows that the hydrology of Blick Mead will not be affected by the Scheme. Further detail on this point is provided in response to paragraph 34.1.63.

<p>34.1.73</p>	<p>Hydrology of Blick Mead</p> <p>2. Implications of the A303 development.</p> <p>iii. Effects of road construction on shallow groundwater flow.</p> <p>The extent of any substantive engineering works (e.g. road realignment) in the immediate vicinity of Blick Mead is unclear. This is potentially important as the site most probably relies upon shallow groundwater flow along an axis of higher permeability in the Chalk in the dry valley to the North (which the current line of the A303 transects). A full Tier 4 assessment of Blick Mead could have established the importance of water flow via this pathway (e.g. using stable isotopes to distinguish between shallow and deep groundwater flow paths, as was done at Star Carr). In the absence of this assessment, a full evaluation of the effects of any ground engineering work on shallow groundwater flow should be completed as we believe that losing this water would lead to a lowering of the water table, particularly in areas where the putty chalk prevents the upward movement of 'deeper' chalk groundwater.</p> <p>There is a further concern with respect to the possible dewatering in the vicinity of the eastern portal to enable access for the tunnel boring machine. Our understanding is that it is at present unclear whether drainage will be required, but given the proximity of Blick Mead, the potential for water table drawdown at the site should not be discounted.</p>	<p>There would be no ground engineering work which could interfere with groundwater flow at Blick Mead. The road alignment and cross sections of the existing and proposed A303 where it is closest to Blick Mead are provided in the Blick Mead Tiered Assessment [APP-282]. The conceptual model and the monitoring [AS-015] show groundwater levels to be below the road and will therefore be unaffected by engineering works. There is therefore no requirement to carry out an evaluation of the effects of engineering work.</p> <p>Furthermore, there is no geological or hydrogeological information to substantiate the assertion that there is a shallow groundwater flow along an axis of higher permeability in the Chalk in the dry valley to the North which is separate from a deeper flow path.</p> <p>With regard to dewatering, the OEMP, item MW-WAT10 [REP4-020] sets out a commitment to update the Groundwater Risk Assessment for the final design and construction plan. Therefore, if there are refinements to the Scheme as a result of detailed design or construction methods these refinements will be assessed.</p>
<p>34.1.74</p>	<p>Hydrology of Blick Mead</p> <p>3. Current monitoring.</p> <p>To-date, there has been no hydrological monitoring in the areas of greatest archaeological interest at Blick Mead (while one borehole has been installed to a depth of 5m, this is 4m below the area of archaeological interest, and the value of this data from this observation point is limited by the putty chalk which significantly limits groundwater interaction in this area).</p>	<p>There is local monitoring at Bick Mead as described in the monitoring report AS-015. Piezometers are installed at different depths in the key area of interest. Further monitoring is not required to support the Environmental Statement as explained in the Deadline 1 Submission - Blick Mead - Note regarding proposals for additional monitoring [REP1-007].</p> <p>These comments on monitoring are factually incorrect. Reference to REP1-007 TR010025-000646-Highways England - Blick Mead - Note regarding proposals for additional monitoring shows the depth of piezometers at 1.2m and 3 m in the area of interest together with surface water monitoring using a staff gauge. These installations are being used to demonstrate the hydrology</p>

We believe that monitoring of the site should include the installation of shallow piezometer nests (to quantify water movement in the area of archaeological interest), monthly sampling to determination isotopic composition of shallow groundwater (to indicate the seasonal interaction between deep and shallow groundwater), and the development of a local groundwater model (at 10m2). We successfully used monitoring of this nature in our investigation of Star Carr (Brown et al. 2011).

In the absence of appropriate monitoring information, some of the points raised here are inevitably speculative, but equally we believe that it is impossible to suggest that the A303 development will have no impact on the hydrology of Blick Mead given the lack of this information (which would form part of a Tier 4 assessment).

of the Blick Mead area as set out in the Groundwater Risk Tiered Assessment [APP-282].

There is no evidence of separate deep and shallow groundwater. Even if there was, the Applicant is in agreement with the Environment Agency 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” (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.ii) [REP4-030]).

It has already been established and agreed that Star Carr is not relevant. At the ISH2 Highways England explained that Star Carr was hydrologically not similar to Blick Mead, and Dr Bradley agreed with this (see agenda item 8(iii) in the written summary of oral submissions [REP4-030]). There is no reason why the approach to monitoring at Star Carr should be adopted at Blick Mead.

There is not an absence of monitoring data and the Applicant has used available information to develop the conceptual model of the hydrology at Blick Mead. The basis of the Highways England assessment is not speculative but founded on good science. 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. At the ISH2 Highways England confirmed that the assessment had been undertaken carefully and fully (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]).

The relevant hydrological processes are referred to in the Tiered Assessment (Annex 3 [APP-282]) and Comments on Written Representations paragraphs 60.3.7 to 60.3.13 [REP3-013] and followed up in the Issue Specific Hearing (Deadline 4 Submission - 8.30.2 Written summaries of oral submissions put at Cultural Heritage hearings on 5th and 6th June 2019, Item 8.iii) [REP4-030]). There will be no significant effect on the sources of water contributing to Blick Mead as a result of the Scheme and therefore the detail of the

		hydrology, whilst of interest to those studying Blick Mead, is not necessary to support the ES.
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35 Avebury Parish Council (REP4-096)

35.1	Comments on Written Representations Report	
	Matter Raised	Highways England's Response
35.1.1	<p>To suggest that Avebury attracts independently travelling amateur archaeologists who are British nationals whilst visitors to Stonehenge are packaged citizens from countries other than the UK touring from one iconic attraction to the next is to mislead. We believe that, so far as visits are concerned, Avebury and Stonehenge are much more readily substitutable than Highways England avers. APC is concerned that Highways England has presented no evidence to show that substitution will not occur and accordingly that it has devised no plan to mitigate impact.</p>	<p>The differences in the types of visitors to both of the separate parts of the WHS (Stonehenge and Avebury) are set out in the WHS Management Plan 2015 (WHSMP). Paragraph 2.8.1 of the WHSMP states '<i>Stonehenge is perceived internationally as a 'must see' attraction and around half of its visitors come from abroad. It is one of the most popular sites in Britain for visitors; indeed it is the most visited archaeological site in Britain.</i>' Whilst paragraph 9.1.3 of the WHSMP states '<i>Both parts of the WHS appeal to many different types of visitor. Stonehenge is a popular destination for coach tours. Over 60% of paying visitors travel to Stonehenge as part of a group. Avebury is less well-known by overseas visitors but receives a number of groups. However, in contrast to Stonehenge in 2012, 94% of visitors travelled independently to the site by car or on public transport.</i>' The 'Facts and Figures' section of the WHSMP (page 321, compiled by the WHS Coordination Unit) also further illustrates this point. Highways England therefore does not mislead by the statements it has already made to the Examining Authority; they are backed up by this evidence.</p> <p>As stated previously in Highways England's Deadline 3 Submission - 8.18 - Comments on Written Representations [REP3-013 paragraph 46.1.3- 46.1.4], as the existing A303 will remain open throughout construction, and because of the predominantly different nature of visitor each site attracts, it is not anticipated that visitors and tour operators will change their tour schedule to visit Avebury rather than Stonehenge during construction, or following Scheme opening and in the operational phase. It is therefore expected that the construction or operation of the Scheme will not have an indirect impact on Avebury. There is also no planned closure of access to either site as a</p>

		<p>result of the Scheme. Socio-economic impacts will therefore be minimal on Avebury from the construction of the Scheme.</p>
<p>35.1.2</p>	<p>It is clear that Highways England’s design revisions in response to criticisms from UNESCO-ICOMOS have not yet been found to be sufficient. APC remains concerned for the fragility of the WHS status of which Avebury is a constituent part and the significant consequences for the village and its associated sites were that status to be lost.</p>	<p>Highways England notes Avebury Parish Council’s concerns, however considers that with regards to recommendations of UNESCO / ICOMOS and the World Heritage Committee, Highways England has previously fully considered these in relation to the Scheme, which includes various features and controls that have been put in place in response to those recommendations (for example, the route alignment selected as the preferred route avoiding the winter solstice sunset alignment and the bisecting of the Diamond Group; setting the road in deep retained cuttings to minimise landtake; determining the length of the tunnel to avoid the Scheduled Monument known as the Avenue (NHLE 1010140) at its eastern end and a Bowl barrow south of the A303 and north west of Normanton Gorse (NHLE 1010832) at its western end – the tunnel length has been extended to 2 miles (or 3km) in length; the further addition of 200m of canopy at the western portal and 85m of canopy at the eastern portal to further extend the tunnel (to almost 3.3km) to aid landscape integration; the optimization of the positions of the tunnel portals at the head of dry valleys in the landscape; in order to reduce the length of cutting (and minimise the length of the culvert part of the tunnel in the western approaches) the addition of the 150m long land bridge to maintain physical and visual connectivity between the Winterbourne Stoke Crossroads Barrows and the Diamond Group; the removal of the surface A303 into a tunnel and approach cuttings to reduce noise and improve the tranquillity of the WHS; in order to minimise light spill measures have included no lighting of the new Longbarrow Junction or the approach cuttings, new directional lighting at Countess Junction replacing the existing non-directional lighting, lighting of the portals would be designed to minimise light spill out in to the WHS landscape and lighting under the land bridge will only operate during daylight hours; and to minimise the visibility of new infrastructure within the WHS signage and other highways installations will sit completely within the approach cuttings and not extend above them). Highways England (and DCMS in its State of Conservation Report submitted to the World Heritage Centre in February 2019) has explained why the proposed Scheme offers an</p>

		<p>optimal solution both to the transport problems on the A303 and to delivering benefits for the World Heritage Site, and has set out why a longer tunnel is not a feasible alternative and cannot therefore be justified (see [REP1-015]). Highways England continues to work closely with heritage stakeholders, and will continue to report to and engage with UNESCO / ICOMOS and the World Heritage Committee through DCMS.</p> <p>With respect to the decision formally adopted by the World Heritage Committee in July 2019, as recorded with respect to Agenda Item 3(v) in the Written Summary of oral submissions from the hearing [REP4-030], Mr Nichol of DCMS reported at the hearing that the view of DCMS was that the then draft decision amplifies the perceived negative impacts of the Scheme and does not adequately reflect the extent to which the World Heritage Committee's 2018 decision has been taken into account by DCMS as the State Party and Highways England.</p> <p>Heritage has been a key consideration during route selection and consultation, being one of the Scheme's objectives to help conserve and enhance the WHS. <i>"The HIA has been prepared in tandem with the development of the Scheme to inform the road improvement proposals as an integral part of the iterative design process. This has enabled the development of a final Scheme which aims to assure the protection of the Outstanding Universal Value (OUV) of the WHS."</i> [APP-195, para. 3.1.5].</p> <p>The HIA [APP-195] considers the risk to the inscription of the site as a World Heritage property and concludes that the Scheme would not impact upon the continuing relevance and application of the WHS inscription criteria, and that the Scheme will bring extensive benefits to the WHS.</p> <p>Overall, the Scheme is assessed to have a Slight Beneficial effect on the OUV of the WHS as a whole and the OUV of the WHS would be sustained.</p>
<p>35.1.3</p>	<p>We welcome the fact that Highways England commits "to work collaboratively with the World Heritage Site Partnership Panel to plan for the post-scheme future" (46-695). In particular we are pleased to see that money from Designated Funds has been allocated to three of the WHS 2015 Management Plan objectives, namely for strategies concerned with land access, sustainable tourism, and sustainable</p>	<p>Highways England respectfully notes this comment and acknowledges that Avebury Parish Council has shared the Transport Strategy with us. Unfortunately, and as we have previously advised Avebury Parish Council, Avebury is too remote from the Strategic Road Network (which Highways England manages) to be likely to meet the funding criteria for a Designated Funds application.</p>

transport. These are important but APC is concerned that practical progress must also be made on the ground. We note that the Avebury WHS Transport Strategy 2015 exists and that it has been endorsed by all WHS stakeholders. It identifies many transport schemes for the benefit of road users and the WHS alike that are ready for or close to implementation. We therefore urge that in addition the Designated Fund allocates money for implementation of schemes set out in the Transport Strategy, especially but not only in relation to road safety on the A4 (see The Strategy, pages 37 to 41). These will enhance appreciation of the WHS and improve road safety on a key route in the northern part of the site, thereby helping to compensate for adverse impacts from the A303 scheme.

The Designated Funds are not, however, the only source of funding. Therefore, the ideas put forward in the Avebury Transport Strategy can remain open for discussion with the World Heritage Site Partnership Panel and the potential for other sources of funding to be found.

We also note that Highways England disagrees that the Scheme will have direct or indirect adverse impacts on Avebury either during the construction or operation of the Scheme as set out in Highways England's response to Written Representations [REP3-013] and at paragraph 35.1.1 above.

36 Historic England (REP4-085)

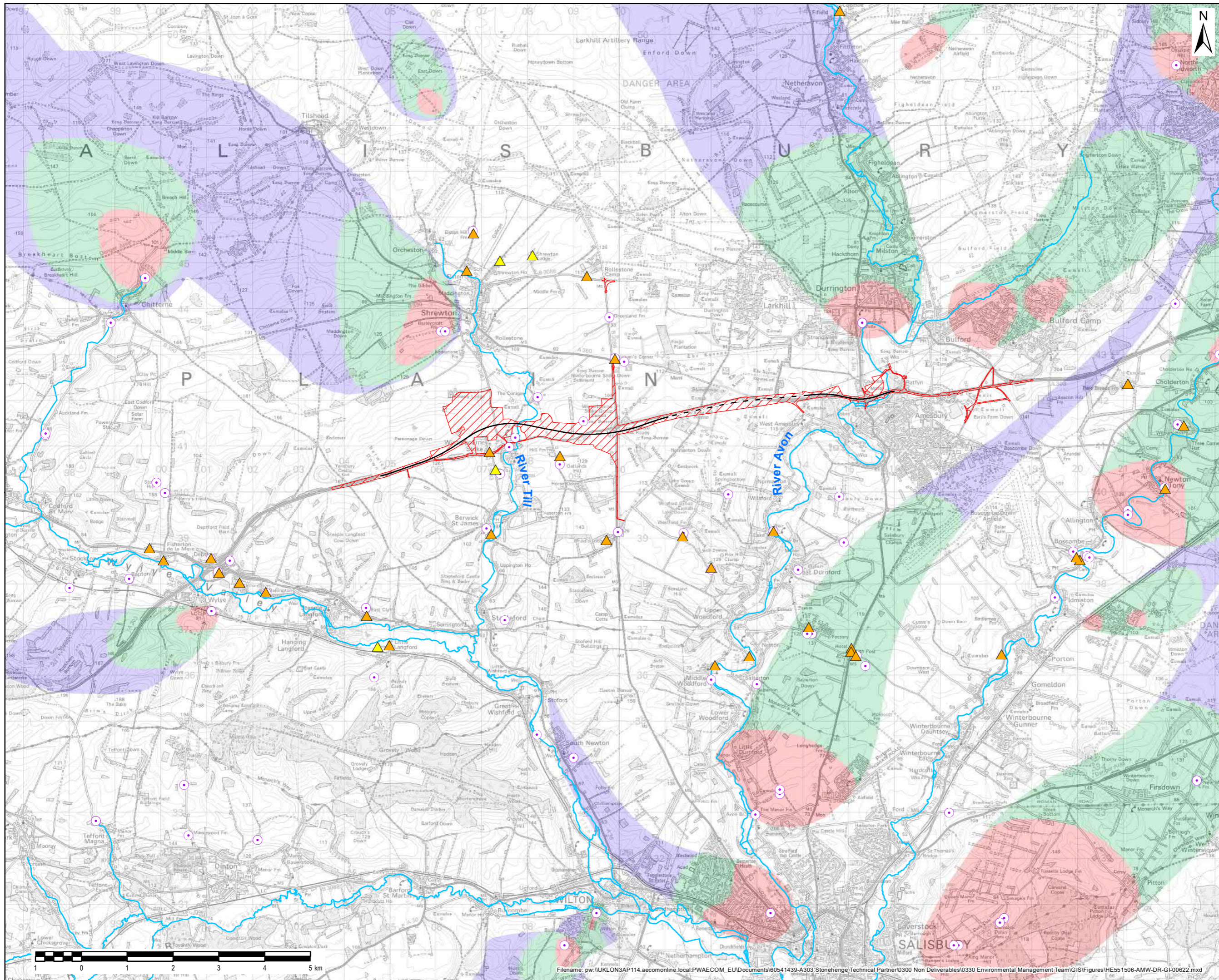
36.1

Oral Submission

The Applicant's written oral submissions for ISH2 [REP4-030] respond to Historic England's comments received at Deadline 4.

Appendix A

FIGURE 11.4 GROUNDWATER ABSTRACTION AND SOURCE PROTECTION ZONES



- NOTES / LEGEND
- Indicative
 - ▨ Proposed scheme
 - Licenced EA Groundwater
 - ▲ Wiltshire Council Private Water Supplies
 - ▲ Other Private Water
 - WFD River Waterbody
 - Zone I - Inner Protection
 - Zone II - Outer Protection
 - Zone III - Total

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Revision Details	By	Check	Date	Suffix

Purpose of Issue: FINAL

Client: Highways England
 Working on behalf of:

Project Title: A303 AMESBURY TO BERWICK DOWN

FIGURE 11.4
 GROUNDWATER ABSTRACTION AND SOURCE PROTECTION ZONES

Designed	Drawn	Checked	Approved	Date
AB	CC	HC	CC	10/07/19

Internal Project No: 60541200
 Scale @ A3: 1:75,000 Zone: SW

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