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# World Heritage Patrimoine mondial

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POUR L'EDUCATION, LA SCIENCE ET LA CULTURE

CONVENTION CONCERNING THE PROTECTION OF THE WORLD  
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CONVENTION CONCERNANT LA PROTECTION DU PATRIMOINE  
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**Item 7 of the Provisional Agenda: State of conservation of properties inscribed on the World Heritage List and/or on the List of World Heritage in Danger**

**Point 7 de l'Ordre du jour provisoire: Etat de conservation de biens inscrits sur la Liste du patrimoine mondial et/ou sur la Liste du patrimoine mondial en péril**

MISSION REPORT / RAPPORT DE MISSION

Stonehenge, Avebury and Associated Sites (United Kingdom of Great Britain and Northern Ireland) (373bis)

Stonehenge, Avebury et sites associés (Royaume-Uni de Grande-Bretagne et d'Irlande du Nord) (373bis)

31 January – 3 February 2017

# Report on the joint World Heritage Centre / ICOMOS Advisory Mission to Stonehenge, Avebury and Associated sites

31 January – 3 February 2017



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## **Executive summary**

A joint ICOMOS/UNESCO advisory Mission was undertaken from 31 January to 3 February 2017 to the Stonehenge component of the "Stonehenge, Avebury and Associated Sites", inscribed on the World Heritage List in 1986 (WH property). This advisory Mission, conducted at the invitation of the State Party (SP, signatory to the 1972 World Heritage Convention, namely the United Kingdom of Great Britain and Northern Ireland), concerned the proposed A303 Amesbury to Berwick Down road Scheme and its potential impacts on the Stonehenge World Heritage property and its Outstanding Universal Value (OUV). This Mission followed a previous Mission carried out in October 2015 and whose report, released in April 2016, has served the SP in its planning and decision making process in relation to this scheme. Both Missions are part of an ongoing process of consultation with international advisors, to ensure that any scheme advanced by the SP would, besides addressing the traffic issues raised:

- contribute to the conservation and enhancement of the WH property by improving access both within and to the site; and
- contribute to the enhancement of the historic landscape within the WH property, to improve biodiversity along the route, and to provide a positive legacy to communities adjoining the road.

The intention is that these objectives would be achieved in a manner which does not negatively affect or compromise the OUV of the WH property.

The Mission has responded in the following ways to the aims and objectives of the Terms of Reference set to the Mission by the SP (reproduced in full in Annex 1).

### **Terms of Reference**

On the basis of briefings on the following, the complete package of which will be made available to the WHC and ICOMOS by Tuesday 20<sup>th</sup> December at the latest, the mission will consider:

- Progress by the UK State Party, Highways England and heritage partner organisations on the implementation of the recommendations of the April 2016 Mission report, responding to all points raised in that document.

The Mission considers that the SP and its organisations have been responsive to most recommendations of the first Mission. This successful implementation is manifest with regards to decisions concerning the emplacement of the Eastern Portal (to the east of the 'Avenue'). As for the organisation of the heritage bodies (HE, NT, EHT and WCAS) into a Heritage Monitoring and Advisory Group (HMAG), the implementation is only partial, pending the creation, as recommended and expected by the Mission, of a proactive "scientific committee" including academics and representation from learned societies.

- The results of archaeological assessment and evaluation of possible route alignments, potential tunnel portal locations and possible associated new surface road within the WH property.

The Mission took note of archaeological assessments, both intrusive and non-intrusive, carried out at the corner of A303 / A360, as well as on the A303 in the area of the 'Avenue'. In terms of heritage protection, these assessments have been successful in identifying further monuments on the west of the WH property and in confirming the attributes of OUV of the area, as an aid to design decisions on the possible placement of the Western portal, should a tunnel option proceed.

The Mission understands that archaeological work to inform the developing scheme route has been undertaken by Wessex Archaeology, commissioned by Arup Atkins Joint Venture (AAJV) for Highways England and that Historic England's research within the WH

property has not been undertaken to inform road proposals, but that the results of Historic England's research have been made available to Highways England to inform their archaeological strategy. Some operational questions remain on the connections and calibration of these two inter-related research streams. There are also some problems with access to the terrain, which is apparently withheld by some landowners and which disrupts the sequence and planning of operations.

- The likely effects upon the attributes OUV of the WH property of potential tunnel portal sites and possible associated new surface road in the various options being considered, and as articulated in HIAs.

The HIAs undertaken for the State Party and considered by the Mission were: *Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS - Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" - Iteration 1 Report*; and *Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS - Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" - Iteration 2 Report*.

The Mission considers that the evaluations and assessments in these HIAs and the preliminary HIAs undertaken for Historic England and the National Trust by Snashall & Young (2014, 2017) identify that an alternative route (the F010) would have a lesser impact on the OUV of the WH property than the tunnel options currently under consideration and that the currently-proposed placement (option D061-62) would cause considerable damage to the OUV of the WH property, through adverse effects on the archaeological remains, on their landscape attributes, and on setting and visibility.

The re-positioning of the eastern tunnel portal to the east of the 'Avenue', on-line on the current path of the A303 road but still within the World Heritage property, will bring some benefits to the Stonehenge landscape. Further refinements in the position are needed to ensure that impacts on OUV are avoided or mitigated. A location closer to the Countess roundabout should be considered, especially with regards to approach routes and infrastructure during construction, (bearing in mind other archaeological features in the vicinity, including the Mesolithic Blick Mead and the Iron Age Vespasian's Camp).

The Mission notes that the governance and decision making processes carried on by the SP (the developer Highways England and its commercial entity AAJV) is sophisticated, but has concluded that the manner in which the criteria are being applied do not give enough weight to the heritage priority required for a WH property, and specifically the preservation of its OUV, as required by the obligations of the State Party under the World Heritage Convention. The Highways England territorial planning process for the removal of the A303 aims at a major priority: to benefit traffic and development to the Southwest of the country, leading to the currently proposed Stonehenge traffic solutions (tunnel D061 and D062, or surface route F010). The design of the scheme within the WH property and road network development must however reconcile this target with avoiding adverse impact on the OUV of the World Heritage property in all its components.

The SP should therefore be encouraged to further explore the F010 route option, as an alternative that will bring significant benefits to the whole WH property and the wider Stonehenge Landscape.

- Feedback on what kind of heritage-centred steering mechanism to ensure quality control at all stages of decision making is being set up or can be set up.
- The potential benefits to the WHS made by any archaeology identified during archaeological assessment and evaluation of potential tunnel portal sites and associated new surface road within its boundary and to wider research in the property on an ongoing basis

The Mission took note of the creation of the HMAG and the MOU between the official heritage bodies (following the recommendations of the first Mission published in April 2016). The Mission regrets that these steps have not been conducted to completion. The mission recommends that to ensure the participation of academics and representatives from learned societies in the HMAG, the proposed “scientific committee” should be established as previously proposed. This will also help in ensuring a wider perception that the World Heritage property is not receiving the best possible attention, in terms of heritage enhancement and protection. A stronger mechanism, drawing notably on international expertise, should be established, and be in a position, for example, to counter the fixation of the length of the tunnel to 2.9 km only, as proposed by AAJV in options D61-62.

The recommendation of the first Mission regarding the HMAG scientific committee should therefore be fully implemented by the SP, especially in relation to its upstream role.

- The whole asset life design of the proposed options within the WH property and road network development and longer term impact on the region.

The Mission remarked that engineering and design questions were still at an initial stage, and that clarifications were requested upstream. This is for example the case with the length of the proposed tunnel, which involved not only heritage issues and costs, but also technical considerations such as ventilation shafts. Regarding the long term impacts, the Mission noted that the SP has not yet undertaken thorough studies in anticipation of “the day after”, when (and if) a tunnel or bypass is operational and the Stonehenge landscape is reunited.

The Terms of Reference further indicates that the Mission shall provide advice on a number of specific matters, as follows:

- The measures that the UK State Party, Highways England and heritage partner organisations have taken, or have in progress, to respond to and implement the recommendations of the April 2016 Mission report

A number of priority recommendations have been implemented by the SP, such as 4.1.1 & 4.1.3. However, the second Mission considers that the order of priority of the recommendations implemented by the SP was inadequate and did not ensure an appropriate upstream process to fully protect the WH property and its OUV.

- The impact of the emerging scheme proposals on the OUV of the WH Property based upon the partial information available at the time of the mission in the design process, which comprises:

- The results of archaeological and other assessments and evaluation of potential tunnel portal sites and possible associated new surface road within the WH property in relation to the attributes of OUV

- The draft route of a potential tunnel schemes and associated new surface road within and adjacent to the WH property

- Initial computer-generated visualisations of aspects of potential new infrastructure, including tunnel portals, vertical alignment, cuttings and embankments

- Available Cultural Heritage Impact Assessments

The Mission extensively discussed the scheme proposals including those (F010) The results of those discussions are outlined in this report.

- Relevant technical and engineering aspects of the potential scheme as available at this stage of development

This matter was not addressed by the Mission, in view of the current status of the potential schemes and focus on potential impact on the OUV of the WH property.

- Relevant technical and planning aspects regarding the whole asset life design of the scheme within the WH property and road network development and longer term impact on the region.

This matter was not addressed by the Mission, in view of the current status of the potential schemes and focus on potential impact on the OUV of the World Heritage property.

- Evaluate additional expertise, consultation, desk review, TOR evaluation, skills assessment, advisory mission, technical assistance if need be.
- How best the World Heritage Centre and its Advisory Bodies can offer advice on the impact on the OUV of the WH property in light of the reporting process to the annual World Heritage Committee and statutory timescales of the Development Consent Order (DCO) application, as the plans to address the problems caused by the existing A303 trunk road traffic are further developed over the coming years

The Mission urged the SP to work further in order to identify satisfactory solutions to the A303 traffic issues that would not compromise the OUV of the WH property, and that would abide by the SP's international obligations in these matters. To this end, the joint ICOMOS/UNESCO advisory Mission readily endorses the SP's request to ensure the further engagement and availability of international advisors in subsequent Missions, with terms of references and a calendar to be jointly fixed. ICOMOS and UNESCO stand by the SP in this challenging and complicated process of ensuring that solutions to the A303 traffic issues are done in full respect of the WH property and its OUV.

Section 9 of this Mission report provides detailed recommendations and associated commentary. The following items are the key recommendations.

1. The Mission recommends that the F010 option be further explored as an alternative for further studies as it would have a significantly lesser impact on the OUV of the WH property than the tunnel options currently under consideration.
2. The Mission recommends that if the D061/D062 were still to be pursued as an option:
  - a) an extension of the tunnel should be considered so that the Western portal would be located outside the WH property to avoid its negative impacts on the OUV of the property, its landscape, monuments and archeological richness, and the Western portal and associated approach road are located so that they would not pose any threat to the property or its setting;
  - b) if a longer tunnel is considered, the SP should undertake a comprehensive Heritage Impact Assessment, which addresses all attributes of OUV, including archaeological and landscape integrity, visibility and noise factors, and incorporating a landscape impact study focusing on the inter-visibility and visual envelopes (viewshed) of the Western portal and highway locations to determine the necessary length of the tunnel that will not harm the OUV of the property and its setting.
  - c) the location of the Eastern portal which is to be repositioned, on-line on the current path of the A303 road but to the east of the important prehistoric feature known as the 'Avenue', linking the Stonehenge monument to the river Avon, be

further refined in order to ensure that potential impacts on OUV are avoided. A location closer to the Countess roundabout should be considered, especially with regards to approach routes and infrastructure during construction, (bearing in mind other archaeological features in the vicinity, including the Mesolithic Blick Mead and the Iron Age Vespasian's Camp).

3. The Mission recommends that the already constituted Heritage Monitoring Advisory Group, be immediately completed and strengthened with a fully operational "Scientific Committee".
4. The Mission recommends that a sustainable tourism strategy of presentation and promotion of the WH property be developed as soon as possible with the view 1) to frame the mitigation measures, such as the loss of direct visual access of Stonehenge Monument, into a wider context; 2) to ensure that the economic benefits related to the WH property are spread to the community and the wider county and 3) to ensure the lasting conservation of the site.
5. The Mission recommends that the SP and bodies involved agree to set up an open forum, gathering stakeholders, local communities, civil society representatives, citizens and all interested parties, as a place to engage into a constructive dialogue driven by the overarching strategy of the Management Plan, i.e. "achieving the correct balance between conservation, access, the interest of the local community and the sustainable use of the Site".
6. The Mission recommends that the project programme and the expectations of all major participants should be adjusted to align with the World Heritage Committee timeframe and process, through careful attention to the 'triggers' which instigate statutory timeframes and deadlines.

# **1. Introductory statements**

## **1.1 Acknowledgments**

The ICOMOS/UNESCO Advisory Mission – henceforth the Mission – wishes to express its gratitude to the State Party (The United Kingdom of Great Britain and Northern Ireland, henceforth the SP), and more specifically to the Department of Culture, Media and Sports (DCMS) and Historic England (HE), as well as to the National Trust (NT), English Heritage Trust (EHT) and Wiltshire County Archaeology Service (WCAS), for their excellent preparatory work, for the provision of ample documentation, and for enabling the Mission to be carried out in optimal conditions. Without mentioning all the individuals concerned (see list below) special thanks are due to Phil McMahon (HE) and to Nicola (Nick) Snashall (NT) for their coordination and responsiveness. As well, the SP and the various organisations involved are to be commended for the serious and wholehearted attention they have given to the first Mission report. While some of the initial recommendations were not fully followed through, or were only partially responded to, the clear willingness exhibited by the SP to respond, rely on and take on board the ICOMOS/UNESCO advice deserves special mention. In this respect, this could well provide an exemplary model of an interactive consultation process between State Parties and ICOMOS/UNESCO.

## **1.2 Aims and Mandate of the February 2017 Mission**

**1.2.1** The role and objective of this second "advisory" Mission, undertaken at the request of the SP, is to comment and provide advice on the ongoing process by which proposals are implemented and eventually promoted with regards to the A303 ABD scheme, as they relate to the OUV of the WH property.

More specifically, the SP has indicated (in its TOR document, PM, dated 13 January 2017, see Annex 1), that it sees the aim of this Mission to reach or address the following objectives:

- To feed back to the WHC and ICOMOS on the measures taken, planned, or in progress, to implement the recommendations of the April 2016 Mission report on archaeological heritage management, governance and decision making processes, territorial planning process and benefits, and long term traffic prediction and on the whole asset life design of the scheme within the WH property and road network development.
- To seek the advice of the WHC and ICOMOS on current progress with the emerging scheme proposal within and adjacent to the WH property based on work undertaken to inform its potential heritage impacts, including upon its OUV;
- To brief the Mission on the nature, timetable and phasing of the UK statutory planning process for nationally significant infrastructure projects and specifically the Development Consent Order (DCO) process under which the detailed scheme proposal would be put out for consultation and considered by the UK Planning Inspectorate;

- Examine what kind of heritage-centred steering mechanism will be put in place to ensure quality control at all stages of decision making.
- To agree on effective means of future engagement with ICOMOS (need for additional expertise, consultation, desk reviews, TOR evaluation, skills assessment, advisory mission, technical assistance) within the DCO consultation and examination process and, and to agree on a feasible timetable for such engagement, taking account of the fixed, statutory timeframe within which the DCO must work and of the fixed cycle of World Heritage Committee meetings. These are important considerations, as the DCO statutory process cannot be paused or halted to allow for additional consultation and the World Heritage Committee must also have the opportunity to consider the scheme, albeit outside of the UK statutory planning process.

The same document further states that the Mission shall provide advice on:

- The measures that the UK State Party, Highways England and heritage partner organisations have taken, or have in progress, to respond to and implement the recommendations of the April 2016 Mission report
- The impact of the emerging scheme proposals on the OUV of the WH property based upon the partial information available at the time of the mission in the design process, which comprises:
  - The results of archaeological and other assessments and evaluation of potential tunnel portal sites and possible associated new surface road within the WH property in relation to the attributes of OUV
  - The draft route of a potential tunnel schemes and associated new surface road within and adjacent to the WH property
  - Initial computer-generated visualisations of aspects of potential new infrastructure, including tunnel portals, vertical alignment, cuttings and embankments
  - Available Cultural Heritage Impact Assessments
- Relevant technical and engineering aspects of the potential scheme as available at this stage of development
- Relevant technical and planning aspects regarding the whole asset life design of the scheme within the WH property and road network development and longer term impact on the region.
- Evaluate additional expertise, consultation, desk review, TOR evaluation, skills assessment, advisory mission, technical assistance if need be.
- How best the World Heritage Centre and its Advisory Bodies can offer advice on the impact on the OUV of the WH property in light of the reporting process to the annual World Heritage Committee and statutory timescales of the Development Consent Order (DCO) application, as the plans to address the problems caused by the existing A303 trunk road traffic are further developed over the coming years

### **1.2.2 Disclaimer on the Advisory nature of the Mission**

It is important to state outright – in view notably of various comments made following the publication of the first Mission report in April 2016 – that the Mission's remit is not to approve or endorse any proposal, let alone to speak authoritatively on behalf of ICOMOS/UNESCO or to anticipate in any way the official responses of these organisations, including the decisions of World Heritage Committee in this matter. The

comments and recommendations made by the Mission in this report aim to provide advice, highlight considerations, assess potential impacts and processes, and advance proposals relating to heritage management on possible routes and options that might be taken by the SP regarding the A303 Amesbury to Berwick Down scheme.

Even if the comments provided here appear to reach a level of detail commensurable with specific design scheme, these comments should not be taken in any way to indicate any endorsement or support for a particular proposal.

The advisory nature of the Mission is reinforced by the express indication by the SP in the 2017 Briefing Pack and during the Mission that the A303 ABD scheme is currently only at its outline stage, with no fully designed proposals. These will be completed following an announcement by the SP Government on the choice of preferred route in mid-2017, leading to the statutory public consultation planned for late 2017. Opportunities for changes and refinements of the scheme and its detail do therefore exist in the framework of this process.

### **1.2.3 The 'Non-Statutory Public Consultation Exercise' (12.01-05.03.2017)**

The ICOMOS/UNESCO Mission unfolded (31.01- 3.02.2017) in parallel with an exercise of non-statutory public consultation launched by the SP, lasting from 12 January to 5 March 2017 (see <https://highwaysengland.citizenspace.com/cip/a303-stonehenge/>, and <https://www.gov.uk/government/consultations/a303-stonehenge>). The consultation put forward one proposed option (option 1), a 2.9km tunnel with two alternative approach roads D061 and D062 (North or south of Winterbourne Stoke at the Western exit of the tunnel). It also set out information on why other options had not been taken forward, including a bypass route to the south (option 2).

Results of this consultation are being analysed by the SP and will be made available soon.

This non-statutory public consultation exercise was mentioned in the SP Terms of references, and its contents and process were presented by the SP (notably on Day 2) and commented on during the Mission. Since the timing of the Mission coincided with that of the public consultation, it was not able to provide its views upstream; likewise, since the public responses received are still being processed, the Mission cannot comment on any results of this consultation.

It should however be noted that the procedures and contents of this non-statutory public consultation exercise – including the presentation of the route options D061 and D062 (North or south of Winterbourne Stoke at the Western exit of the tunnel), and the mention a tunnel 2.9km long (not "at least") – have obviously shaped the public responses, many of which were transmitted or copied to UNESCO, ICOMOS and members of the Mission (see sections 2.3 and 2.4 below).

Put otherwise, public response and reactions to the A303 ABD scheme are largely dependent on the information made available in this non-statutory public consultation exercise. This was not necessarily the case with responses from academics who had worked at Stonehenge and with heritage organisations with members who had worked at Stonehenge. However, so far as the proposed emplacements of the tunnel portals are

concerned, specific discussions and comments depend on the information made available in the non-statutory public consultation.

The SP may require some further comments and feedback on the consultation process, especially in view of the statutory consultation that is required as part of the DCO process. This could be an item for any further ICOMOS/UNESCO Mission.

#### **1.2.4 Purpose of the Advisory Mission Report**

The main purpose of the Mission has been defined in the Terms of Reference which focused on “the proposed dualling and tunnelling of the A303 within the World Heritage Property, between Amesbury and Berwick Down”. However, consideration of all possible corridors and routes and their respective comparative advantages or impacts (including Heritage Impact Assessment) occurred *after* the first Mission took place and the results of these considerations and assessments formed part of the Mission briefing. The current Mission has therefore been mindful of broader options, as well as the current tunnel proposal, with a view to facilitating an outcome which provides significant benefits to the Stonehenge landscape and/or removes impact on the OUV of the WH property.

The Mission wishes to clarify what is exactly at stake in considering the impact on the OUV of the proposed scheme routes project. The position along which the tunneling will restore the visual integrity of one part of the Stonehenge WH property should be considered along with the consequential loss of physical integrity of the archaeological layers of the property which will be caused by the tunnel approach roads, as well as the loss by the public of direct visual access to Stonehenge, which might be perceived as a value for sharing this heritage, although not overtly part of its OUV. These are the issues that need to be assessed by HIAs, prepared in accordance with the applicable ICOMOS Guidance, and based on the best possible knowledge of the overall property in relation to its OUV, so that any impact on OUV can be clearly understood and assessed before any decisions are taken.

## **2. Context and background**

### **2.1 - Statement of OUV:**

#### **The World Heritage Property: Stonehenge, Avebury and Associated Sites**

The World Heritage property Stonehenge, Avebury and Associated Sites was inscribed on the World Heritage List in 1986. It is amongst the earliest properties inscribed on the List and the site reflects the changing history of conservation and interpretation approaches as well as World Heritage criteria and procedures. The site spreads out on a very large area, mainly agricultural land, a vast hilly landscape punctuated with a few settlements, and a series of main roads, secondary roads and earth roads.

#### *Brief synthesis:*

*Stonehenge, Avebury and Associated Sites<sup>2</sup> is internationally important for its complexes of outstanding prehistoric monuments. Stonehenge is the most architecturally sophisticated prehistoric stone circle in the world, while Avebury is the largest. Together with inter-related monuments and their associated landscapes, they demonstrate Neolithic and Bronze Age ceremonial and mortuary practices resulting from around 2000 years of continuous use and monument building between circa 3700 and 1600 BC. As such they represent a unique embodiment of our collective heritage.*

*The World Heritage property comprises two areas of Chalkland in southern Britain within which complexes of Neolithic and Bronze Age ceremonial and funerary monuments and associated sites were built. Each area contains a focal stone circle and henge and many other major monuments. At Stonehenge these include the Avenue, the Cursuses, Durrington Walls, Woodhenge, and the densest concentration of burial mounds in Britain. At Avebury they include Windmill Hill, the West Kennet Long Barrow, the Sanctuary, Silbury Hill, the West Kennet and Beckhampton Avenues, the West Kennet Palisaded Enclosures, and important barrows.*

*Stonehenge is one of the most impressive prehistoric megalithic monuments in the world on account of the sheer size of its megaliths, the sophistication of its concentric plan and architectural design, the shaping of the stones - uniquely using both Wiltshire Sarsen sandstone and Pembroke Bluestone - and the precision with which it was built.*

*At Avebury, the massive Henge, containing the largest prehistoric stone circle in the world, and Silbury Hill, the largest prehistoric mound in Europe, demonstrate the outstanding engineering skills which were used to create masterpieces of earthen and megalithic architecture.*

*There is an exceptional survival of prehistoric monuments and sites within the World Heritage property including settlements, burial grounds, and large constructions of earth and stone. Today, together with their settings, they form landscapes without parallel. These complexes would have been of major significance to those who created them, as is apparent by the huge investment of time and effort they represent. They provide an insight into the mortuary and ceremonial practices of the period, and are evidence of prehistoric technology, architecture and astronomy. The careful siting of monuments in relation to the landscape helps us to further understand the Neolithic and Bronze Age.*

*Criterion (i):*

*The monuments of the Stonehenge, Avebury and Associated Sites demonstrate outstanding creative and technological achievements in prehistoric times.*

*Stonehenge is the most architecturally sophisticated prehistoric stone circle in the world. It is unrivalled in its design and unique engineering, featuring huge horizontal stone lintels capping the outer circle and the trilithons, locked together by carefully shaped joints. It is distinguished by the unique use of two different kinds of stones (Bluestones and Sarsens), their size (the largest weighing over 40 t) and the distance they were transported (up to 240*

*km). The sheer scale of some of the surrounding monuments is also remarkable: the Stonehenge Cursus and the Avenue are both about 3 km long, while Durrington Walls is the largest known henge in Britain, around 500 m in diameter, demonstrating the ability of prehistoric peoples to conceive, design and construct features of great size and complexity.*

*Avebury prehistoric stone circle is the largest in the world. The encircling henge consists of a huge bank and ditch 1.3 km in circumference, within which 180 local, unshaped standing stones formed the large outer and two smaller inner circles. Leading from two of its four entrances, the West Kennet and Beckhampton Avenues of parallel standing stones still connect it with other monuments in the landscape. Another outstanding monument, Silbury Hill, is the largest prehistoric mound in Europe. Built around 2400 BC, it stands 39.5 m high and comprises half a million tonnes of chalk. The purpose of this imposing, skilfully engineered monument remains obscure.*

*Criterion (ii):*

*The World Heritage property provides an outstanding illustration of the evolution of monument construction and of the continual use and shaping of the landscape over more than 2000 years, from the early Neolithic to the Bronze Age. The monuments and landscape have had an unwavering influence on architects, artists, historians and archaeologists, and still retain a huge potential for future research.*

*The megalithic and earthen monuments of the World Heritage property demonstrate the shaping of the landscape through monument building for around 2000 years from circa 3700 BC, reflecting the importance and wide influence of both areas.*

*Since the 12th century when Stonehenge was considered one of the wonders of the world by the chroniclers Henry de Huntington and Geoffrey de Monmouth, the Stonehenge and Avebury Sites have excited curiosity and been the subject of study and speculation. Since early investigations by John Aubrey (1626-1697), Inigo Jones (1573-1652), and William Stukeley (1687-1765), they have had an unwavering influence on architects, archaeologists, artists and historians. The two parts of the World Heritage property provide an excellent opportunity for further research.*

*Today, the property has spiritual associations for some.*

*Criterion (iii):*

*The complexes of monuments at Stonehenge and Avebury provide an exceptional insight into the funerary and ceremonial practices in Britain in the Neolithic and Bronze Age. Together with their settings and associated sites, they form landscapes without parallel.*

*The design, position and interrelationship of the monuments and sites are evidence of a wealthy and highly organised prehistoric society able to impose its concepts on the environment. An outstanding example is the alignment of the Stonehenge Avenue (probably a processional route) and Stonehenge stone circle on the axis of the*

*midsummer sunrise and midwinter sunset, indicating their ceremonial and astronomical character. At Avebury the length and size of some of the features such as the West Kennet Avenue, which connects the Henge to the Sanctuary over 2 km away, are further evidence of this.*

*A profound insight into the changing mortuary culture of the periods is provided by the use of Stonehenge as a cremation cemetery, by the West Kennet Long Barrow, the largest known Neolithic stone-chambered collective tomb in southern England, and by the hundreds of other burial sites illustrating evolving funerary rites.*

### **Integrity**

*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.*

*At Avebury the boundary was extended in 2008 to include East Kennet Long Barrow and Fyfield Down with its extensive Bronze Age field system and naturally occurring Sarsen Stones. At Stonehenge the boundary will be reviewed to consider the possible inclusion of related, significant monuments nearby such as Robin Hood's Ball, a Neolithic causewayed enclosure.*

*The setting of some key monuments extends beyond the boundary. Provision of buffer zones or planning guidance based on a comprehensive setting study should be considered to protect the setting of both individual monuments and the overall setting of the property.*

*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. The roads sever the relationship between Stonehenge and its surrounding monuments, notably the A344 which separates the Stone Circle from the Avenue. At Avebury, roads cut through some key monuments including the Henge and the West Kennet Avenue. The A4 separates the Sanctuary from its barrow group at Overton Hill. Roads and vehicles also cause damage to the fabric of some monuments while traffic noise and visual intrusion have a negative impact on their settings. The incremental impact of highway-related clutter needs to be carefully managed.*

*Development pressures are present and require careful management. Impacts from existing intrusive development should be mitigated where possible.*

### **Authenticity**

*Interventions have been limited mainly to excavations and the re-erection of some fallen or buried stones to their known positions in the early and mid-twentieth century in order to improve understanding. Ploughing, burrowing animals and early excavation have resulted in some losses but what remains is remarkable in its completeness and concentration. The materials and substance of the archaeology supported by the archaeological archives continue to provide an authentic testimony to prehistoric technological and creative achievement.*

*This survival and the huge potential of buried archaeology make the property an extremely important resource for archaeological research, which continues to uncover new evidence and expand our understanding of prehistory. Present day research has enormously improved our understanding of the property.*

*The known principal monuments largely remain in situ and many are still dominant features in the rural landscape. Their form and design are well-preserved and visitors are easily able to appreciate their location, setting and interrelationships which in combination represent landscapes without parallel.*

*At Stonehenge several monuments have retained their alignment on the Solstice sunrise and sunset, including the Stone Circle, the Avenue, Woodhenge, and the Durrington Walls Southern Circle and its Avenue.*

*Although the original ceremonial use of the monuments is not known, they retain spiritual significance for some people, and many still gather at both stone circles to celebrate the Solstice and other observations. Stonehenge is known and valued by many more as the most famous prehistoric monument in the world.*

*There is a need to strengthen understanding of the overall relationship between remains, both buried and standing, at Stonehenge and at Avebury.*

### ***Protection and management requirements***

*The UK Government protects World Heritage properties in England in two ways: firstly, individual buildings, monuments and landscapes are designated under the Planning (Listed Buildings and Conservation Areas) Act 1990 and the 1979 Ancient Monuments and Archaeological Areas Act, and secondly through the UK Spatial Planning system under the provisions of the Town and Country Planning Acts. The individual sites within the property are protected through the Government's designation of individual buildings, monuments, gardens and landscapes.*

*Government guidance on protecting the Historic Environment and World Heritage is set out in National Planning Policy Framework and Circular 07/09. Policies to protect, promote, conserve and enhance World Heritage properties, their settings and buffer zones are also found in statutory planning documents. The protection of the property and its setting from inappropriate development could be further strengthened through the adoption of a specific Supplementary Planning Document.*

*At a local level, the property is protected by the legal designation of all its principal monuments. There is a specific policy in the Local Development Framework to protect the Outstanding Universal Value of the property from inappropriate development, along with adequate references in relevant strategies and plans at all levels. The Wiltshire Core Strategy includes a specific World Heritage Property policy. This policy states that additional planning guidance will be produced to ensure its effective implementation and thereby the protection of the World Heritage property from inappropriate development. The policy also recognises the need to produce a setting study to enable this. Once the review of the Stonehenge boundary is completed, work on the setting study shall begin.*

*The Local Planning Authority is responsible for continued protection through policy development and its effective implementation in deciding planning applications with the management plans for Stonehenge and Avebury as a key material consideration. These plans also take into account the range of other values relevant to the site in addition to Outstanding Universal Value. Avebury lies within the North Wessex Downs Area of Outstanding Natural Beauty, a national statutory designation to ensure the conservation and enhancement of the natural beauty of the landscape.*

*About a third of the property at both Stonehenge and Avebury is owned and managed by conservation bodies: English Heritage, a non-departmental government body, and the National Trust and the Royal Society for the Protection of Birds which are both charities. Agri-environment schemes, an example of partnership working between private landowners and Natural England (a non-departmental government body), are very important for protecting and enhancing the setting of prehistoric monuments through measures such as grass restoration and scrub control. Much of the property can be accessed through public rights of way as well as permissive paths and open access provided by some agri-*

*environment schemes. Managed open access is provided at Solstice. There are a significant number of private households within the property and local residents therefore have an important role in its stewardship*

*The property has effective management plans, coordinators and steering groups at both Stonehenge and Avebury. There is a need for an overall integrated management system for the property which will be addressed by the establishment of a coordinating Stonehenge and Avebury Partnership Panel whilst retaining the Stonehenge and Avebury steering groups to enable specific local issues to be addressed and to maintain the meaningful engagement of the community. A single property management plan will replace the two separate management plans.*

*An overall visitor management and interpretation strategy, together with a landscape strategy needs to be put in place to optimise access to and understanding of the property. This should include improved interpretation for visitors and the local community both on site and in local museums, holding collections excavated from the property as well as through publications and the web. These objectives are being addressed at Stonehenge through the development of a visitor centre and the Interpretation, Learning and Participation Strategy. The updated Management Plan will include a similar strategy for Avebury. Visitor management and sustainable tourism challenges and opportunities are addressed by specific objectives in both the Stonehenge and Avebury Management Plans.*

*An understanding of the overall relationship between buried and standing remains continues to be developed through research projects such as the “Between the Monuments” project and extensive geophysical surveys. Research Frameworks have been published for the Site and are regularly reviewed. These encourage further relevant research. The Woodland Strategy, an example of a landscape level management project, once complete, can be built on to include other elements of landscape scale planning.*

*It is important to maintain and enhance the improvements to monuments achieved through grass restoration and to avoid erosion of earthen monuments and buried archaeology through visitor pressure and burrowing animals.*

*At the time of inscription the State Party agreed to remove the A344 road to reunite Stonehenge and its Avenue and improve the setting of the Stone Circle. Work to deliver the closure of the A344 will be complete in 2013. The project also includes a new Stonehenge visitor centre. This will provide world class visitor facilities including interpretation of the wider World Heritage property landscape and the removal of modern clutter from the setting of the Stone Circle. Although substantial progress is being made, the impact of roads and traffic remains a major challenge in both parts of the World Heritage property. The A303 continues to have a negative impact on the setting of Stonehenge, the integrity of the property and visitor access to some parts of the wider landscape. A long-term solution remains to be found. At Avebury, a World Heritage Site Traffic Strategy will be developed to establish guidance and identify a holistic set of actions to address the negative impacts that the dominance of roads, traffic and related clutter has on integrity, the condition and setting of monuments and the ease and confidence with which visitors and the local community are able to explore the wider property.*

The wider landscape of the WH property as a whole should be considered when addressing the potential impact on OUV and not only the Scheduled monuments as specific concerned components of the OUV, *a.i.* Stonehenge monuments and surroundings monuments. Likewise, the integrity of the wider landscape of the WH property is to be considered and not only the Scheduled monuments. Consequently, the *Vision for the Stonehenge and Avebury World Heritage Site*, as defined in the Management Plan, which has clearly set out the full range of attributes of OUV, should be the guiding document for ensuring the OUV of the whole property is sustained.

## 2.2 Summary of the First Mission Recommendations (October 2015 – Report April 2016)

A first ICOMOS/UNESCO Advisory Mission took place on 27-30 October 2015, at the request and invitation of the SP, following the December 2014 announcement by the UK Government that as part of its attempts to solve the long-running traffic problems along the A303 ABD trunk road it explored several options, including that of investing in a bored tunnel "at least 2.9 km" long. The report of the Mission was subsequently released to the SP, and made available in April 2016 on the UNESCO website as a downloadable PDF file (<http://whc.unesco.org/en/documents/141037/>, and <http://whc.unesco.org/en/list/373/documents>).

At the time of the first Mission, no precise plans existed regarding roads or tunnel portals, and the only relatively specific data provided was the notion of a tunnel "at least 2.9 km long". This notion was reached on the basis of potential portal placements (A1 and E) as suggested on predominantly heritage grounds by English Heritage (now English Heritage and Historic England) and the National Trust; (see comments in section 6.2 in the present report). Moreover, other options than a bored tunnel had clearly been explored, including different corridor routes that would bypass the WH property.

The aim of that first Mission was to familiarise the international advisors with the WH property, and with the scope and challenges presented the Scheme, including its potential impact on the WH property's OUV. As the Mission report indicated,

*What is at stake here is not a technical issue in terms of either engineering or archaeology. Technically speaking the situation is fairly standard. The challenge is the process, the setting up of governance, monitoring systems and operational mechanisms, which will allow for high quality results and international standards to ensure an outcome that respects OUV.*

The first Mission did provide some comments on the proposed or hypothetical placement of the portals, and made the case that the OUV of the WH property would be better served and enhanced by placing the eastern portal (if at all a tunnel was to be bored) to the east of the Avenue – a proposition that was subsequently endorsed by the SP (see section 6.2, 6.3 below). The first Mission Report also indicated its concerns regarding the western portal and its potential adverse impact.

Given however the initial and preliminary nature of the scheme, more attention was dedicated by the first Mission to issues of process, standards, governance, operations and monitoring surrounding the WH property and its OUV – issues involving the State Party, the developer Highways England (a state owned company) a range of heritage bodies as well as local residents, interest groups, academics and other stakeholders.

The first Mission concluded that:

*The mission considers that the project for the relocation of the existing road underground into a "tunnel of at least 2.9k" could readily adopt appropriate well-established construction methods and spatial planning approaches. Hence, with good design and construction controls, and respecting essential archaeological and heritage management measures, the tunnelled length of the road would be expected to have a beneficial impact on the attributes of Outstanding Universal Value (OUV). However, the siting and design of the tunnel portals, approach cuttings/embankments, entry/exit ramps, mitigation measures and the temporary*

*construction works have the potential to adversely impact OUV. These latter aspects of the scheme, in particular, will require rigorous investigation, evaluation, iterative design and assessment if they are to protect the attributes of OUV within the World Heritage site.*

In addition, the Mission made a range of recommendations. The main ones are listed here:

- 1) Establish a heritage-centred steering mechanism between the Heritage bodies and including scientific experts, dealing with monitoring and MOU.
- 2) Set up a role for further joint UNESCO /ICOMOS missions to advise on OUV protection and enhancement.
- 3) Provide organogram of the SP actors involved.
- 4) Include of best practices in technology for BIM and virtual visualisation.
- 5) Ensure the involvement of Landscape architect.
- 6) Align Heritage Impact Assessment (HIA) with the Development Consent Order (DCO) process.
- 7) Undertake studies on visitor changes in numbers and behaviour.
- 8) Review and implement international best practice for highway and tunnel design.
- 9) Address issues of temporary construction and efficiency in logistics.
- 10) Clarify and formalise relations between heritage bodies, as well as interactions between the developer and archaeological management. Ensure that heritage bodies are as vigorous and proactive as possible in defending heritage ad OUV, including in the context of commercial archaeology.
- 11) Review elements of communication strategy.

These first Mission recommendations were addressed by the SP in the time stretch between the missions, though not all the responses were fully addressed. A discussion of the SP responses is provided in section 3 below.

### **2.3 Reactions by the civil society**

In the weeks before the Mission took place, before and after the non-statutory public consultation exercise was launched (see section 1.4.3 above), the World Heritage Centre was the destination of a strong campaign from the civil society, including associations such as the *Stonehenge Alliance*.

While some elements of the public have expressed strong support for the project, and for the concept of a tunnel, strong opposition has also been expressed. The main claim was against the road scheme proposals to replace the current A303 “by a twin bore tunnels with long and deep tunnels entrance cuttings and up to 1.6 Km of new 4-lane dual carriageway at surface level within the World Heritage Site, along with huge new grade-separated junctions either side of it”. The majority of the emails used standard text. However, some messages were more detailed especially on a) the potential impact of the proposed south route option D 062 on the solstice alignment; b) the methods and techniques used to conduct archaeological surveys at the proposed location of the tunnels entrance points; c) the public consultation on the tunnel route within the WH property only; d) the impact on the night sky landscape of streetlights; e) potential conflicts of interests of members of the Heritage Monument Advisory Group; f) knock-on effects on Avebury of the loss of visibility of Stonehenge from the road.

The Mission raised these issues openly during its meetings, notably with the developers Highway Highland and with the Heritage bodies (HE, NT, EHT, WCAS). Some specific

responses, such as those related to the quality and the location of the archaeological excavations surveys or the alignment of the proposed western portal on the winter solstice are addressed further in the report.

The overall impression of the Mission is that the (as yet informal) response provided by the State Party to the public consultation and campaign is not yet fully satisfactory, as although the State Party treats all representations seriously, the objections to the project were characterized as coming exclusively from activists, who have sustained ‘in principle’ objects to the project. While it is acknowledged that engagement with representatives from civil society about the project extends back for years, it appeared to the Mission members who met with some of these civil society groups, that more transparency including for a more encompassing, better informed public consultation on all route options would have been beneficial to the reception by the public and by academics. The strong, continuing campaign underlines the lack of inclusion in the decision process of representatives from civil society, especially of informed movements of *amateurs* or of learned societies and academics.

#### **2.4 Governance and consensus building among stakeholders (Historic England, National Trust, English Heritage, Highways England, Wiltshire Council,)**

They are at least seven bodies involved: DCMS, HE, NT, EHT, WC, HiE and AAJV. All these bodies were represented and the Mission had opportunities to discuss extensively formally and informally with each of them. However, in accordance with the Terms of Reference for the Mission, no exchange occurred with representatives of the civil society, despite the strong campaign and by contrast with the previous Mission, when an extensive and useful process of such encounters occurred. This approach was adopted on the basis that full stakeholder consultation was taking place as part of Highways England’s public consultation exercise. However, the Mission concluded that future advisory missions by ICOMOS/UNESCO should adopt an open and inclusive process and therefore should include structured meetings on the latest development of the scheme with civil society, professional archaeologist experts, local communities and other stakeholders.

The good governance system is a crucial aspect of the development project and was a priority recommendation of the first advisory Mission. Since then, the A303 Amesbury to Berwick Down *Heritage Monitoring & Advisory Group (HMAG)* has only been partially constituted (see section 3.2 and 4.2, 4.3 below). The membership and the terms of reference of this board of experts have been provided in the 2017 Briefing Pack for the second advisory Mission, including representatives of HE, NT, EHT and WCAS. All of those members were present during the meetings of the first day of the Mission. The situation of the HMAG was presented by the Cultural Heritage work stream Leader of AAJV and Historic England. The SP is to be commended for setting up this Group. Although it was indicated during the Mission that the Group had weight, that relevant discipline specialists were involved and that individual positions are made public, the Group has limitations. Although it was requested that the mechanism be heritage-centred, its membership should not be limited to official heritage bodies, but should include also independent professionals and academics. The role of the HMAG includes advice and setting the standards and approving the scope of archaeological work associated with the scheme, but not broader decision making. The HMAG, including the proposed “scientific committee’ can provide a very valuable heritage-centred steering mechanism which can also contribute to ensuring transparency in a highly sensitive and symbolic context. The role of the scientific

committee whose membership and role was unclear before the Mission remains somewhat unclear.

Consequently, the Mission concluded that the SP should review the membership and the mandate of the current HMAG to include academic archaeologists, representatives of learned archaeological societies, or groups such as ASAHRG. Also, it should be clarified again that the ultimate mandate of such mechanism is not limited to managing aspects *for the benefit* of the OUV of the WH property, but to ensure that the OUV of the property **is fully maintained particularly including its integrity and authenticity**.

Furthermore, and considering the strong campaign from civil society, the Mission recommends that the SP and bodies involved agree to set up a consultative arrangement such as an open forum, gathering stakeholders, local communities, civil society representatives, citizens and all interested parties, as a place to present the communities concerns and engage into a constructive dialogue driven by the overarching strategy of the Management Plan, i.e. “achieving the correct balance between conservation, access, the interest of the local community and the sustainable use of the Site”.

### **3. Responses by the SP to the recommendations of the first Mission (April 2016 report)**

3.1 As already indicated, the SP and its agencies addressed some of the ICOMOS/UNESCO recommendations following the first Mission. Many of the responses given in the 2017 Briefing Pack can be taken as such, and do not require much in the way of comments (see section 2.2. above for the main recommendations). There are however aspects that need to be reconsidered or that do not appear to have been addressed, notably concerning the following two points – "Issues of archaeological organisation and quality control" (point 3.2 below), "Visitor Numbers and behaviour" (point 3.3 below). Relevant aspects, alongside of course other issues emerging from the second Mission, will be presented in section 4, 5 and 6 below

#### **3.2 On "Issues of archaeological organisation and quality control".**

(Recommendations 1.1, 3.2, 3.3 and 3.1 of the first Mission, responded to in points 5.2 and 5.14 of the 2017 Briefing Pack).

3.2.1 The SP and its agencies have taken a series of measures to ensure that proper oversight and control is exercised on archaeological and heritage operations within the WH PROPERTY and the A303 ABD scheme. The creation of a "A303 ABD Heritage Monitoring and Advisory Group" – henceforth HMAG – is a welcome step, as is the Memorandum of Understanding proposed between the main heritage bodies.

3.2.2 Some issues remain to be address or considered. These include (a) the decisional and control capacity of the HMAG, especially in relation to the archaeological operators on the ground and (b) the composition of the HMAG

3.2.3 The following are quotes from the 2017 Briefing Pack (p.16).

#### **HMAG (Board of Experts)**

5.2.2 HMAG (Board of Experts) will provide **advice and support** with regard to the archaeological and wider heritage impacts of the project's design, assessment, implementation and mitigation. Where **supplementary advice and expertise** are required HMAG will request additional advice from members of the Scientific Committee (see below).

#### **Scientific Committee**

##### **Membership**

5.2.6 Membership of the Scientific Committee comprises the following:

- Heritage Monitoring & Advisory Group; and
  - Additional subject matter experts in the archaeology of the Stonehenge landscape.
- Membership **to be** confirmed separately. CVs **will be** made available.

##### **Purpose**

5.2.7 At the request of HMAG (Board of Experts) members of the Scientific Committee **will be** invited to **provide additional subject matter advice** and expertise **on particular issues relating to the archaeological and wider heritage impacts** of the project's design and implementation in relation to the Neolithic & Bronze Age of the Stonehenge landscape and the consequent impact on the OUV of the WHS.

3.2.4 It was reiterated orally during the Mission – by WCAS in particular, as well as HE and NT – that decision-making role and capacity to impose requirements by HMAG are

actually stronger than the wording of "advice and support" might imply. Nevertheless, and although it is acknowledged that the initiators and decision-takers are the curatorial bodies: Historic England, Wiltshire Council and additionally for their own land, the National Trust, the archaeological reports of the operations already carried out (and annexed to the 2017 Briefing Pack) are regularly couched in terms that suggest influence is also exerted by the developers – Highways England – or on their behalf AAJV, who tender and contract archaeological work, both non-intrusive and intrusive, to commercial companies such as Wessex Archaeology.

This question of the initiation, oversight and planning of archaeological work on the A303 ABD scheme will be returned to in sections 4.2 and 4.3 below.

3.2.5 As it is presented, the HMAG is composed of four national and local official heritage bodies (EH, NT, EHT and WCAS), and a "scientific committee". Two issues remain unclear: (a) at present, the "scientific committee" does not exist, and its members have apparently **not yet** been identified, contacted or confirmed, (b) the actual circumstances in which their "supplementary advice and expertise" will be called for are not specified. This results in a major problem of timing and sequencing, insofar as decisions are in the process of being taken and works have commenced, without the benefit of input from the scientific committee.

As further dealt with in sections 4.2 and 4.3 below, this situation is of concern in several respects. The archaeological component of the project may not enjoy the full benefit of all available guidance and advice. There is also a risk to perceptions of the reliability of the heritage assessment process, and also the overall confidence of both the professional archaeological community and the wider public. In this respect, archaeological operations undertaken as part of the project should benefit from guidance from an HMAG which is fully established as proposed, including a functional scientific committee.

### 3.3 – Issue of visitor numbers and behaviour

(Recommendation 2.3 of the first Mission, responded to in point 5.9 of the "2017 Briefing pack").

3.3.1 The initial recommendation was to study and understand the potential changes in visitor numbers and behaviour that may occur upon the opening up of the landscape with a tunnel scheme, and the impacts of these changes on OUV.

3.3.2 The following are quotes from the 2017 Briefing Pack (p. 27-28).

5.9.1 English Heritage (EH) and National Trust (NT) **will work** together to establish potential changes in visitor numbers and behaviour that may occur by opening up the landscape with a tunnel scheme. **Once the likely impact has been established**, EH and NT will work together to understand the impact this might have on current visitor operations, the need for new forms of access and interpretation and both organisations will need to identify measures to mitigate negative impacts on OUV and in the environs of the WH PROPERTY.

Timescales

5.9.7 It is expected that this work would take **12-18 months to complete** but this will be an iterative process and reviewed against the progress of the Highways England project development. Implementation of access and interpretation outcomes would follow.

Funding

5.9.8 **The cost and funding of this work is to be established.** The expertise and in-house resources of EH and NT will be utilised where possible and discussions are underway with Highways England and AAJV to establish what information or resources they could provide.

3.3.3 It may be that the initial recommendation was not clearly formulated, but the Mission considers that the responses given here are inadequate, notably with regards to the proposed timing of the study and its as yet undecided funding. The SP appears not to have sufficiently measured the importance and urgency of:

- (a) an adequate preparedness to the eventuality, in less than 10 years from now, that a tunnel or a bypass opens and operates in a reconfigured Stonehenge landscape; or
- (b) the ability to demonstrate already now, to official bodies and agencies, to academics, stakeholders and the wider public (including opponents of the scheme), that the SP is actually anticipating and planning ahead on this matter. This will be further addressed below.

## **4 – Assessing Impacts on OUV and Attributes of OUV**

The OUV of the WH property and its attributes are clearly set out in Section 2 above and relate to the idea of an archaeological landscape that is more than a random assembly of sites but is seen increasingly to be a landscape of organised or related sites – both spatially and visually.

As any potential projects should be considered for their impact on this landscape, through HIAs, it is essential that such assessments are based on the best possible data related to knowledge of the archaeological landscape.

As a general initial comment, it must be stressed and acknowledged that the assessment of the archaeological landscape, as well as its individual components, as part of a Heritage Impact assessment (HIA) represents a major and indeed crucial challenge in the A303 scheme, relating both directly and indirectly to impact on OUV, including integrity and authenticity. This is a matter about which the SP is indeed well aware.

It is also acknowledged that approach roads at the end of any proposed tunnels will irreversibly impact on the integrity of the complexes of monuments at Stonehenge as an exceptional insight into the funerary and ceremonial practices in Britain in the Neolithic and Bronze Age. The shaping of the landscape through monument building for around 2000 years demonstrated the importance of the intangible and spiritual links of monuments, such as the alignment of the Stonehenge Avenue and the Stonehenge stone circle on the midsummer sunrise and midwinter sunset.

Far from impacting on the integrity, the A303 scheme should aim to restore the integrity of the landscape.

### **4.1 Preliminary Archaeological Assessment**

#### **4.1.1**

As a further initial comment, it is worth recalling here the disclaimer made above (section 1.2.2) regarding the advisory nature of the Mission: as indicated there " Even if the comments provided here appear to reach a level of detail commensurable with specific design scheme, these comments should not be taken in any way to indicate any endorsement or support for a particular proposal". This is all the more the case that no decisions have yet been made by the SP, and neither route nor specific design are yet determined, let alone any DCO.

A range of archaeological operations, both non-intrusive and intrusive, have been carried out in relation to the currently proposed A303 tunnel option (as discussed below, section 4.2.2). The results of these investigations have been incorporated into the Heritage Impact Assessments undertaken for the scheme, on behalf of the State Party: "*Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS - Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" - Iteration 1 Report*", and "*Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS - Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" - Iteration 2 Report*". The archaeological investigation results also informed the preliminary Heritage Impact Assessment study, "Stonehenge A303 improvements: outline

assessment of the impacts on the OUV of the WH property of potential route options presented by Highways England for January 2017" carried out by N. Snashall & C. Young (Snashall & Young 2017) as a follow-up of their 2014 report (Snashall & Young 2014), which informed Historic England's and the National Trust's own position in relation to options under consideration.

These archaeological assessments and undertakings can be considered in two complementary ways (a) their contribution to heritage impact assessments with regards to the WH property' OUV, and heritage management, and (b) their contribution to scientific knowledge.

4.1.2 So far as heritage management is concerned, the archaeological work already carried out seems to be making a contribution to towards the overall impact assessment process.

The Heritage Impact Assessments undertaken for the scheme, on behalf of the State Party initially considered seven options (iteration 1), then a refined selection of three options (iteration 2), including the F010 option. Although the F010 option was identified as having the least potential impact on the OUV of the WH property, the alternative tunnel options were put forward for public consultation. Nevertheless, the archaeological investigation and HIA process have resulted in some concept and design changes.

This is the case with the proposed emplacement of the Eastern Portal, which, following the first Mission report, has been relocated to the east of the "Avenue" in order to reduce heritage impacts on the WH property' OUV (Route D061-62 in Figure 4.1- 4.3).

This may also become the case with propositions regarding the Western Portal emplacement, where archaeological and heritage considerations may influence forthcoming revised propositions and decisions.

4.1.3 Archaeological works commissioned by Highways England to inform scheme proposals have been undertaken in accordance with specifications agreed with, and signed off by, Historic England, Wiltshire Council Archaeological Service, and where it affects their land, the National Trust. The archaeological work has been undertaken following methodologies, with aims and oversight being clearly set out and followed through.

What appears less well established is the capacity of these archaeological undertakings to build on academic work already undertaken. One of the main challenges that should be addressed further is the need for the highest possible standards of archaeological operations on the WH property. This is also important for the wider A303 ABD project. No decisions have yet been made on the final route and no road building, tunnelling or engineering activity has occurred – except for archaeological investigations and evaluations. Besides reinforcing the actual archaeological activities, resulting from intrusive and non-intrusive investigations (on site and in the lab), it is essential to ensure that no archaeological work on the WH property, its setting and the A303 ABD road scheme could be perceived as being potentially sub-standard.

4.1.4 Such perceptions about archaeological operations and standards have featured among a wider range of issues raised by members of the public, civil society and other stakeholders to ICOMOS and to the WHC and UNESCO concerning the Stonehenge tunnel project.

Several of these comments represent highly knowledgeable queries and concerns about field procedures, sampling and recording. Further comments have expressed concern over the access, perusal and good use actually made by the operators involved of previously generated information (be it the HER managed by WCAS, national databases, publications in regional, national or international academic venues, or in the 'grey literature' available locally or through ADS).

It is important that the archaeological work undertaken as part of the project continue to occur in accordance with the code of conduct and standards of Chartered Institute of Archaeologists and be transparently demonstrated to meet or exceed standards for academic archaeological work. This objective may be assisted by:

- a) recruiting the HMAG scientific committee, as soon as possible with both ASAHRG and academic researchers fully involved; and
- b) ensuring that the standard of archaeological work at the WH property meets the standards demanded of research excavations, and not those, necessarily different in their aims, practice and yes, costs, that apply in some areas of commercial archaeology. This would also mean to follow and implement the recent report published for the WHS management by Wessex Archaeology "A Research Framework for the Stonehenge, Avebury and Associated Sites World Heritage Site: Research Agenda and Strategy" (Leivers & Powell 2016):

<http://www.stonehengeandaveburywhs.org/assets/Research-Agenda-and-Strategy-1.pdf>

## **4.2 Process and structure**

### **4.2.1 On the operators on the ground**

As reported in the 2017 Briefing Pack and presented during the Mission, a range of archaeological operations, both non-intrusive and intrusive, have recently been carried out in relation to the A303 ABD Scheme by two operators, HiE-AAJV-WE, and HE.

One is the Highways England commissioned AAJV, through their contractors Wessex Archaeology, who have been working in the South-East corner of the A303 / A360 and to the East of the Stonehenge monument (SW1, SW2, SE1 and NE1, NE2 in Figure 1a).

The geophysical (non-intrusive) work by Wessex Archaeology for AAJV is detailed in their report "A303 Amesbury to Berwick Down. A303 Geophysical Survey Report. Interim Draft. Arup Atkins Joint Venture. HE551506-AA-EHR-SWI-RP-YE-000006, P02, S4, 20/12/2016" (pp. 446 ff. in the Complete Briefing Pack).

The trial excavations (intrusive evaluation) undertaken by Wessex Archaeology for AAJV were undertaken within area SW1 and SW2 – see "A303 Amesbury to Berwick Down. A303 Archaeological Evaluation. Report Interim Draft. Arup Atkins Joint Venture, HE551506-AA-EHR-SWI-RP-YE-000005, P01.2, Interim Draft" (pp. 581 ff. in the Complete Briefing Pack). It is indicated there that anticipated evaluation (intrusive) could not be carried out in some areas because access was denied (see section 4.4. below).

The other entity engaged in archaeological operations within the WH property in relation to the A303 ABD scheme is Historic England, through its own archaeology excavation and Analysis team – see "Historic England. Excavation and Analysis. HE7238 - Stonehenge Southern WH property Survey Assessment Report" (pp. 66 ff. in the Complete Briefing

Pack). Although HE's archaeological research has not been undertaken to inform Highways England's route selection and design work, The HE team has been undertaking non-intrusive survey and intrusive evaluations in two adjacent areas to South-East corner of the A303 / A360 (Diamond Field Borland's farm and Diamond Field Druid's Lodge) as well as West Amesbury Farm (see Figure 1b) (see figures in p. 339 and 366 of the Complete Briefing Pack). This work has been carried out as part of and in continuation of the Stonehenge Southern WHS Survey project (HE7238), a research project led and funded by HE to explore and better understand the archaeological resources of the Stonehenge WH property that lie south of the current A303 road.

Notwithstanding the coordinating role of the HMAG, and that Historic England's archaeological team and Highways England's archaeological consultants and contractors were well aware and informed of each other's operations, no comprehensive map of archaeological operations related to the A303 ABD scheme undertaken so far has been provided to the Mission – a map that would include both intrusive and non-intrusive work by ALL operators. The Mission reiterates the importance of calibrating and harmonising the work and results of ALL operators involved in the A303 ABD scheme, to ensure that both heritage and research needs are best served.

#### **4.2.2 Availability of information on archaeological operations and results.**

Every effort should be made to make as much information on archaeological operations and results available as speedily and readily as possible for academic researchers and for the general public. This includes interim and technical reports of various non-intrusive and intrusive evaluation activities, as well as excavations. The Mission has been advised that all reports on archaeological works undertaken as part of the scheme will be released to the public at the point they have been reviewed and signed off by both the contracting body and HMAG. The survey and investigation reports belong to Highways England and will be made fully and publicly available without restriction on their use. When these documents are released, the information within them will feed into the HER (Historic Environment Record, SMR), by whom, at whose financial costs and responsibility?

#### **4.3 Heritage Impact Assessments standards**

However good the archaeological survey work is, it still needs to be used effectively in HIAs and thus related to OUV and attributes of OUV.

The Mission considers that the evaluations and assessments in both HIAs undertaken for the State Party (Iterations 1 and 2) and the preliminary HIAs undertaken for Historic England and the National Trust by Snashall & Young (2014, 2017) identify that an alternative route (the F010) would have a lesser impact on the OUV of the WH property than the tunnel options currently under consideration and that the currently-proposed placement (option D061-62) would cause considerable damage to the OUV of the WH property, through adverse effects on the archaeological remains, on their landscape attributes, and on setting and visibility.

The Mission considers that the preliminary HIA by Snashall & Young (2014, 2017) makes it clear that, so far as the proposed Western portal is concerned, the currently-proposed placement (option D061-62) would cause considerable damage to the OUV of the WH

property, through adverse effects on the archaeological remains, on their landscape attributes, and on setting and visibility.

The Mission notes that the Governance and decision making processes carried on by the SP (the developer Highways England and its commercial entity AAJV) is sophisticated, but has concluded that the manner in which the criteria are being applied does not give enough weight to the heritage priority required for a WH property, and specifically to sustaining OUV, an obligations of the State Party under the World Heritage Convention. The Highways England territorial planning process for the removal of the A303 aims at a major priority; to benefit traffic and development to the Southwest of the country, leading to the proposed Stonehenge traffic solutions (tunnel D061 and D062). The design of the scheme within the WH property and road network development must however reconcile this operational objective with avoiding adverse impact on the OUV of the WH property and it is therefore not appropriate for the F010 option to have been discounted prior to the public consultation held on the scheme proposals. The Mission has consciously and appropriately considered and made comment on the F010 option, notwithstanding that this option was not overtly included as part of the Advisory Mission's Terms of Reference.

The Mission notes that all HIAs undertaken for the project should comply with the requirements and procedures set in the ICOMOS 2011 Heritage Impact Assessment Guidance and should also engage with the specific obligations of the SP under the World Heritage Convention. In particular it should be noted that benefits arising from changes in some parts of the property cannot outweigh negative impacts on OUV arising from impacts elsewhere.

#### **4.4 Access and ownership**

4.4.1 In the course of the Mission, it has become clear that some archaeological and heritage assessment related works could not be carried out at present, owing to the continuing lack of consent from the private landowner concerned, especially to the south of the A303 (see David Roberts, Andrew Valdez-Tullett and Alice Forward, "HE7238 - Stonehenge Southern WHS Survey Assessment Report", Historic England Excavation and Analysis (p. 76 of the Briefing Pack, as well as p. 266). Other archaeological reports provide further evidence of this, when for example it is stated that "The proposed evaluation of part of NE2 did not go ahead at this stage due to access constraints" in AAJV, A303 Archaeological Evaluation Report Interim Draft, HE551506-AA-EHR-SWI-RP-YE-000005 P01.2, Interim Draft, joined in the Complete Briefing pack, p. 581) and see Figure 1a).

Unlike the central area of the WH property (owned by HE, NT, EHT), both the proposed portal locations (East and West) are situated on privately owned land. The Mission considers that this state of affairs (which includes uncertain access to land for archaeological evaluation purposes) is detrimental to well-informed heritage impact assessment, because archaeological information that can inform decisions on tunnel routes, portal placements, access road and infrastructure hubs, is not available at an appropriate juncture of the decision-making process.

Indeed, the Mission considers that the implications of these access issues could have a flow-on impact on the credibility of existing and future HIAs if it were to transpire that access for thorough archaeological evaluation in the framework of HIAs may be secured too late for informed and impartial decision making processes.



## **5 - Corridor selection and route options around the World Heritage property**

The following text is a summary of the process set out by Highways England (HiE) and reflect their views and what the State Party has set out as of January 2017 and it follows the Technical Appraisal Report (on line) prepared by AAJV to serve as public information. It is a synthesis made by the mission from a larger text which is presented in annex 4.

This section summarizes the existing problems and constraints in the study area of the existing A303 between Amesbury and Berwick Down, including the long lasting problems created by the existing A303 road passing through the heart of the Stonehenge, Avebury and Associated Sites World Heritage property (WH property), within 165 meters of the ancient stone circle and is based on the Report which details the identification, sifting and appraisal of 8 corridors, then 7 route options considered, and finally 3 options. The procedures to determine the advantages and disadvantages of each route selected is also explained here.

A Power Point was also presented by the Highways England and AAJV, (Feb 2<sup>nd</sup> 2017) focusing on the development and appraisal of options for the many solutions that have been put forward to solve the A303 route. This with the Technical Appraisal Report are the two sources used in this section to explain the corridor selection and route options that led to the three alternatives presently under public consultation in January/ February 2017, in order to reach a final choice as an alternative to A303.

The Mission's opinions comments are only presented in 5.6 where a diagnosis of the problem of route selection from the Stonehenge OUV point of view as the State Party selection process was based on weighing up many parameters of which OUV was only one aspect.

### **5.1-The Highways England (HiE) Scheme Requirements**

The Technical Report and the power point which summarized it was presented by AAJV and both started by announcing the Highways England requirements for the traffic solution. Highways England had the following objectives for the new road:

- Transport: to create a high quality route that resolves current and predicted traffic problems and contributes towards the creation of an Expressway between London and the South West;
- Economic growth: in combination with other schemes on the route, to enable growth in jobs and housing by providing a free flowing and reliable connection between the East and the South West peninsula;
- Cultural heritage: to contribute to the conservation and enhancement of the WH property by improving access both within and to the site; and
- Environment and community: to contribute to the enhancement of the historic landscape within the WH property, to improve biodiversity along the route, and to provide a positive legacy to communities adjoining the road.

Other concerns were also stated by HiE for the future road from which the mission underlines:

The strategic route will be redirected so as to reduce its site and sound impacts on the WH PROPERTY. *The redirected route will treat archaeological features with sensitivity and*

*will protect the Outstanding Universal Value (OUV) of the WH PROPERTY. It will seek to minimise any damage to or loss of archaeology.*

These intentions are important because they present clear principles serving as the basis for the selected road and the impact on the landscape around the iconic stone circle and the landscape belonging to the WH property which the mission had to analyse.

## **5.2 - Route Selection process**

For the route selection process an identification of earlier corridor options was done where a wide range of proposed solutions to traffic problems on the A303 at Stonehenge over many years was identified. A review was undertaken of some 60 route options that have been proposed by Government, stakeholders and the public in the past. These options were grouped into a series of corridors which contained route options with similar characteristics. This resulted in eight corridors, representing the groups of route options.

The objective of this phase of the selection process (Design Fix A) was to undertake a multi- criteria assessment of the eight corridors and ultimately to recommend corridor(s) to be taken forward for further consideration.

The assessment and appraisal methodology used the following three criteria:

- a) Highways England Requirements.
- b) Web-based Transport Appraisal Guidance's (WebTAG) Early Assessment and Sifting Tool (EAST).
- c) National Policy Statement for National Networks (NPSNN) environmental aspects.

And the outcomes of the appraisal are resumed in four major comments of interest for the Mission:

- A) Surface route options within the WH property (Corridors B, C and E)
- B) Tunnelled Routes within the WH property (Corridor D)  
A tunnelled route through the WH property would reduce severance within the WH property and improve the setting of key assets such as Stonehenge. The surface elements may cause adverse effects on the character of the WH property but it is considered that substantial harm can be avoided by locating the tunnel portals far away from the WH property core.
- C) Surface Routes outside the WH property (Corridors A, F (north and south) and G)  
On balance, the harmful impacts would outweigh the benefits associated with the removal of the A303 through the WH property.
- D) Corridor F surface route options to the south of the WH property would remove the A303 from the WH property in its entirety. Surface route options to the south of the WH property would also offer a less direct route for through traffic and would therefore offer reduced transport benefits. More traffic would also remain or divert onto local roads (rat running), giving rise to adverse impacts on local villages and communities.

On the basis of the initial assessments, as summarised above the better performing corridor options were identified. Corridors A, B, C, E and G were not taken forward for further consideration. This left tunnel options within Corridor D and surface options within Corridor F (north) and Corridor F (south) being taken forward for further consideration in Design Fix B. Ultimately, a single Option 1 tunnel route running from the east past Stonehenge was selected, which then divided into Option 1N and Option 1S to offer a choice of northern or southern bypass for the village of Winterbourne Stoke.

At this point discussion with the Highways England representative and AAJV clarified that other projects in the South area of the WH property dealing with the military airport and new location for a major industrial investments were being considered and the possibility of Corridor F (south) had for that reason to take a longer route.

The procedure for the selection of the routes included an assessment of the seven options corridors against the National Policy Statement for National Networks and this considered the necessary areas of assessment as pointed below:

- Air quality.
- Carbon emissions.
- Biodiversity.
- Waste management.
- Civil and military aviation and defence interests.
- Coastal change.
- Dust, odour, artificial light, smoke, steam.
- Flood risk.
- Land instability.
- The historic environment (this includes impacts on WH PROPERTY).
- Land use including open space, green infrastructure, and greenbelt.
- Noise and vibration.
- Impacts on transport networks.
- Water quality and resources.

### **5.3- Commentary on Impacts**

Tunnel based routes within Corridor D would still include portals and a section of above ground dual carriageway within the WH property which impacts on the landscape. Highways England consider that it would nevertheless bring substantial benefits for the WH property arising from the closure of the A303 to the south of Stonehenge, reducing severance within the WH property and the impact of traffic in the WH property. Overall, it is considered that the potential exists for the benefits to outweigh the harm.

As far as the impact on the landscape, at grade routes within Corridors A, B, C, and D have the potential to impact on the high quality landscape surrounding the circles, rings, avenue and cursus and a number of visual receptors in local communities such as Durrington, Shrewton Amesbury, Larkhill, and Winterbourne Stoke.

In summary according to HiE all corridors scored poorly when assessed against the Landscape criteria, with Corridors E, F (south), and G performing the worst due to the high quality landscape of the AONB and a high number of sensitive visual receptors

Corridor D, which includes tunnel sections within the WH property, scored best when assessed against the noise criteria, with corridors A and E performing the worst due to communities experiencing increases in noise levels.

Corridor D would reduce transport costs, improve regional connectivity, support the visitor economy and provide journey time savings compared to the existing situation. Corridor D had a good fit against the CSRs, particularly economic growth and transport, with the best overall fit of all the corridors. Similarly, the corridor scored the best of all corridors against environmental criteria and EAST. This corridor offers reduced severance

and potential to enhance the WH property and is the best performing corridor of all that were assessed. It was therefore recommended that Corridor D was taken forward for further consideration.

Corridor F (North) has a good fit with the CSR for cultural heritage and offers reduced severance and potential enhancement within the WH property by avoiding direct impact upon it. It was recommended that Corridor F (north) was taken forward for further consideration.

In terms of landscape both D061 and D062 would have a moderate adverse effect with scope for further mitigation during design development. For F010 the magnitude of change and the sensitivity of the high quality rural landscape along the approximate 21.5 km length and the visual impacts of the highly intrusive crossings of the Upper Avon Valley and River Till, would result in a substantive adverse effect on the landscape with limited scope for mitigation.

For the historic environment, both route options D061 and D062 would result in an overall neutral score compared with a large beneficial effect for F010. In terms of the WH property, F010 would also result in a large beneficial effect, whilst D061 would result in a slight/moderate beneficial effect and D062 a slightly greater moderate beneficial effect. These differences arise from the routing of D062 west of the western portal where it avoids important archaeological remains and uses local topography to better fit into the landscape of the WH.

The following table provides the results of the assessment of the seven option corridors for each of the route options.

*Fig 5.1- Client ( HiE) Scheme Requirements summary table (Source: Technical Appraisal Report, Atkins Arup 2016 )*

Document	Client Scheme Requirements	D061	D062	F010
Client ( HiE) Scheme Requirements	Transport: to create a high quality route that resolves current and predicted traffic problems and contributes towards the creation of an Expressway between London and the South West	3	3	2
	Economic growth: in combination with other schemes on the route, to enable growth in jobs and housing by providing a free flowing and reliable connection between the East and the South West peninsula	3	3	2
	Cultural heritage: to contribute to the conservation and enhancement of the WH property by improving access both within and to the site	2	2	3
	Environment and community: to contribute to the enhancement of the historic landscape within the WH property, to improve biodiversity along the route, and to provide a positive legacy to communities adjoining the road	3	3	2

All route options would improve journey quality, reliability and safety for through traffic. However, F010 is expected to encourage more traffic to use local roads adjacent to communities to the north of the existing A303, resulting in adverse severance effects.

However, F010, due to its greater length, has the potential to result in significant loss of priority habitats and associated biodiversity. Benefits of route options D061 and D062 would include a shorter scheme in terms of its length, landscape reconnection and habitat restoration, leading to a reduction in road fatalities and increase in wildlife movement relative to route option F010.

All three options would result in a net beneficial effect on noise. However F010 has the potential for a larger beneficial noise effect than D061 or D062 due to the reduced noise impact of the existing A303 on Amesbury.

Current appraisal guidance (WebTAG) does not monetise or seek to quantitatively value impacts on historic environment. It instead relies on qualitative scores. In some respects, the value of cultural heritage assets is intangible and will remain unquantifiable. However, techniques exist which seek to monetise the value that people place on cultural heritage assets and the PowerPoint and the Technical Report both presented the willingness to pay methodology and results.

#### 5.4. Willingness to pay survey: methodology and results

The Willingness to Pay Research presented by HiE was undertaken only on the basis of the tunnelled option (Route Option D061). A contingent valuation study was undertaken to provide a more balanced quantitative assessment of value for money. The aim of this study was to understand the value that visitors to the WH property, A303 users, and UK residents put on the removal of the A303 from its current location within the WH property, in relation to noise reduction, increased tranquillity, visual amenity and reduced landscape severance in the WH property.

The survey responses have been used to generate estimates of the aggregate willingness to pay of the UK population as a whole or, put another way, the overall value that society attributes to these benefits. It was considered that responses to the survey were highly influenced by impacts on Stonehenge itself as the most recognisable monument in the World WH property.

The contingent valuation study involved undertaking face to face surveys at the Visitor Centre as well as on-line surveys with a stratified sample of UK residents. The research considered three separate populations:

- Stonehenge Visitors.
- A303 Road Users.
- General population.

The Results of the inquiry are summarized below:

*Fig 5.4- Respondents 'Willing to Pay' for the Proposed Scheme (Source: Technical Appraisal Report, Atkins Arup 2016)*

	Visitors	Road users	General population
Willing to pay to move the road	67.4%	67.4%	59.2%
Requiring compensation for the removal of the road	0.5%	2.1%	2.3%
Neither willing to pay nor requiring compensation	32.2%	30.5%	38.4%
Total	100%	100%	100%

Those willing to pay something for the proposed improvement were asked how much willing to pay an increase in annual taxes over a three-year period to support the scheme.

In summary, the aggregate net benefit for visitors to Stonehenge is £24m, for road users it is £51m, and for the general population it is £1.1 billion. Combining these together results in an estimated aggregate net present value of £1.3 billion (2016 prices and values) for the removal of the section of the A303 for a tunnel.

*Fig 5.5. Aggregate Willingness to Pay/Accept (Source Technical Appraisal Report, Atkins Arup 2016 )*

Group	WTP/WTA variable	%	Relevant Population	Mean (£ Net Present Value)	Aggregation to national level
Visitors	Annual tax	67%	363,776	£68	£24m
	Compensation (one off)	0.5%	2,517	£188	
Road Users	Annual tax	67%	854,212	£22	£51m
	Compensation (one off)	2%	27,204	£81	
General Population	Annual tax	59%	31,653,894	£14	£1,251m
	Compensation (one off)	2%	1,229,012	£58	
Total net present value (2016 prices and values)					£1,326m
Total net present value (2010 prices and values)					£992m

It should also be recognised that, in practice, the willingness to pay values cover a range of impacts not necessarily limited to historic environment. The values generated by the surveys are likely to capture impacts on noise, air quality landscape and amenity, as well as impacts on historic monuments. In overview, the willingness to pay research provides an assessment of the public value attributed to removing the road from the WH property. It provides a partial assessment of the benefits of the scheme which complements qualitative assessment based on expert opinion. Nonetheless, understanding the value that people place on the benefits of the scheme, the research helps us to better understand the trade-offs between cost and impact.

### 5.5- Highways England position summary

In respect of cultural heritage impacts, Highways England considers that all options would deliver transformative benefits for parts of the WH property by improving the setting of scheduled monuments, including Stonehenge itself, and by removing the physical barrier that currently divides the Site into two parts.

As noted, for all options, the benefits of removing the road from the WH property need to be balanced against the negative impacts of the construction of a new or widened surface highway in an otherwise rural environment. As for heritage impacts, quantifying such effects is highly challenging.

In relation to construction, design and management (CDM) safety assessment, route options D061 and D062 would involve significant tunnel construction, a highly specialised and technically complex activity. This would be considered a significant construction risk activity, but was assessed as manageable by a competent contractor. Route option F010 would involve the construction of significant viaducts over the River Avon and the River Till, which would require significant amount of working at height, another significant but manageable construction risk.

In regards to the scheme programme, route options D061 and D062 could be delivered to meet the road investment strategy (RIS) programme dates and achieve a start on site by March 2020. Route option F010 would require additional survey information leading to a 12 month delay relative to route options D061 and D062, and thus would achieve a later start on site date of approximately March 2021.

In conclusion, based on the more detailed WebTAG assessment and appraisal of the sifted best performing route options for corridors D and F, and the fit with the scheme objectives, the following route options are proposed to be taken forward to Stage 2 for public consultation and further appraisal, with no significant characteristics differentiating the two options:

- Route option D061: Approximately 2.9km length tunnel with route running north of Winterbourne Stoke, eastern tunnel portal located east of The Avenue and the western tunnel portal located west of Normanton Gorse to minimise visual impact to and from Stonehenge.
- Route Option D062: Approximately 2.9km length tunnel with route running south of Winterbourne Stoke, eastern tunnel portal located east of The Avenue and the western tunnel portal located west of Normanton Gorse to minimise visual impact to and from Stonehenge.

The mission was also informed that:

- 1- The estimated cost of the 2.9km tunnel is £1.4 billion; and
- 2- If the tunnel is 4.5km it would cost £2 billion.

## **5.6- Mission comments on the overall options selection process and criteria**

From the point of view of the mission and the inscription of the WH property on the World Heritage List, the OUV is the key consideration, although it is recognised that HiE also takes into consideration many other factors which seem to be given equal weight. This problem was addressed during the discussion and the Mission pointed out that the option D061 and D062 highways crossing the WH property would have a highly damaging impact on OUV and that this key issue could not be outweighed by all other criteria and detailed justification put forward by HiE.

**Corridor F** surface route options to the south of the WH property which would remove the A303 from the WH property in its entirety presented a preferable solution for the WH property and impact on OUV. The SP responded that a surface route option to the south of the WH property would also provide a less direct route for through traffic and would therefore offer reduced transport benefits. Another issue on this route option was pointed out as more traffic would also remain or divert onto local roads (rat running), giving rise to adverse impacts on local villages and communities.

The mission recalled that the submission by various organisations contesting the tunnel suggests that these adverse impacts could be overcome, so this argument led to a new information about the non-willingness to develop the F010 longer surface solution: HiE clarified that a major project in the South area of the WH property near the airport runway within the military area was being considered as the future location for a major industrial investment, affecting therefore the length of Corridor F (south) that had for this reason to go further away and become a longer route. Nevertheless, the F010 option (even if longer) warrants further consideration.

As for the tunnel solution, notwithstanding the evaluations in the HIAs, the mission considers that HiE presents an over-emphasis on the benefits to OUV, or more specifically, benefits to the setting of the monuments in the central area of the WH property and understates the dis-benefits to the WH property of the tunnel/approach highways option – for instance it is said on p.3 of the Highways England 2016 Technical Appraisal Report that: *B) Tunnelled Routes within the WHS (Corridor D) A tunnelled route through the WHS would reduce severance within the WHS and improve the setting of key assets such as Stonehenge [by this is meant the main henge monument not the whole WH component]. The surface elements may cause adverse effects on the character of the WHS but it is considered that substantial harm can be avoided by locating the tunnel portals far away from the WH Site core*

This suggests that improving the setting of the Stonehenge monument by removing A303 is considered to be an improvement while adverse impact elsewhere in the WH property could be mitigated by putting the portal away from the central area so that it was not visible from the main henge monument.

The mission clarified that the whole WH property landscape had to be taken into account in assessing adverse impact and that the harm/ benefit consideration was relevant, but did not solve the negative impact on the OUV of the whole WH property. The proposed approach highways to the tunnel (outside the proposed portals, but within the WH property) would harm the OUV of the WH property.

The willingness to pay research presented by Highways England is an innovative procedure to help the evaluation of a major change in the area of the WH property, which affects the whole population of the UK as they will have to pay for this improvement. The final result is given in money value and adds arguments to the decision to be undertaken and may enrich the diagnosis of this second Mission, though only the tunnel was considered in the inquiry so the F010 proposal was set aside.

Since the estimated cost of the 2.9km tunnel construction is 1.4 billion, the willingness to pay survey has given an encouraging estimated aggregate net value of £1.3 billion (2016 prices and values) for the removal of the section of the A303 for a tunnel. The full length of the tunnel to cross the width of the WH property would be 5.6km with an estimated cost in excess of 2 billion which is almost the double of the ‘willingness to pay’ amount. This discussion is further presented in section 6.4.

Another factor was discussed when comparing F010 solution and D01/ D02; the former taking much longer to finish (Route Option F010 would require additional survey information leading to a 12 month delay relative to Route Options D061 and D062, and thus would achieve a later start on site date of approximately March 2021) thus affecting the

Development Consent Orders (DCO) timeline. It was explained by HiE that “when considering an application for development consent, the Secretary of State considers its benefits including for economic growth, job creation, and environmental improvement. This will be considered against adverse impacts of the scheme including long-term cumulative impacts. Such applications are required to be supported by a business case prepared in accordance with Treasury Green Book principles.” This approach had resulted in a clear preference for the tunnel, though the mission considered that the F010 solution had less impact, and was better fitted to preserve the OUV of the WH property.

The assessment methodology used to assess options, takes a broad approach, recognising the uniqueness of Stonehenge and its international importance, but also weighing up impacts on the many different individual monuments affected, either positively or negatively, by the scheme. The mission emphasised that impact on ALL attributes of the OUV of the WH property, including its landscape and the relationships between the monuments within it, not just the changes to the landscape around Stonehenge itself, require consideration. While the central area of the WH property area would benefit, the area of the portals and the associated approach roads would significantly impact upon the attributes of OUV.

For a World Heritage property, a simple balance between positive and benefit impacts is not appropriate. The appropriate ‘test’ is not whether or not there is a net benefit to OUV or other heritage values, but rather whether the outcome has an adverse impact on OUV. The prime objective should be to avoid adverse impacts on OUV. If impacts on OUV are unavoidable, that could be a basis for deciding not to proceed with the project. Thus the issue of balance for WH properties has to be constrained by the fact that however great the benefits of a project, these cannot compensate for irreversible impacts on OUV.

The ICOMOS *Guidance for the preparation of Heritage Impact Assessments* (2011) notes impacts on OUV can be positive – such as public benefits – as well as negative. But positive impacts cannot outweigh negative impacts. The mission report must focus on potential adverse effects on OUV of the WH property and especially on irreversible impacts.

The Mission recognises that the State Party and its relevant authorities under national planning structures need to balance a range of issues and factors in making decisions regarding the proposed project and that there are potential public access and landscape benefits. However, the mission considers that:

- The F010 option should be explored further as an alternative (even if it will take a longer route and a longer time frame) for further studies; and it costs far less.
- in view of the impact of the western tunnel portal on the WH property’s OUV, the two options D061 and D062 are effectively the same solution.
- D061-062 would cause considerable damage to the OUV of the WH property, through adverse effects of the Western Portal and approach road on the archaeological remains, on their landscape attributes, and on visibility and the wider setting.
- that the re-positioning of the eastern tunnel portal to the east of the 'Avenue', but still within the WH property, is an improvement, but is not an ideal solution; further refinements in the position are needed to ensure that impacts on OUV are avoided or mitigated. A location closer to the Countess roundabout should be considered, (bearing in mind other archaeological features in the vicinity, including the Mesolithic Blick Mead and the Iron Age Vespasian’s Camp).
- should a tunnel option remain under consideration, an extension of the tunnel should be considered so that the Western Portal should be located outside the WH

property to avoid its negative impacts on the OUV of the property, its landscape, monuments and archeological richness.

## **6- Proposed tunnel lengths and portal placements**

### **6.1 Design fixes and costs**

6.1.1 As stated in the 2017 Briefing Pack, a decision has been reached at the Design Fix C stage, that the:

"(2.2.9). Design Fix C assessed the route options identified in Design Fix B. The assessment started with a review of the three 4.5km tunnel options and determined that these were not deliverable within the Government's **prescribed terms and objectives** set out in the Road Investment Strategy and therefore did not constitute viable options. These route options were then discounted from further assessment"

The Mission would appreciate a brief explanation (or a reminder, if the information has already been provided) regarding these "prescribed terms and objectives"? Why and how were these criteria not met for the explored 4.5 km options? How are these criteria quantified, and particularly whether and how they are related to any issues of costs? Presumably the same criteria apply to shorter tunnel options, and they need to be explicitly stated.

The estimated actual construction costs of the tunnel were given, and they do not increase proportionally as the underground stretch tunnel length increases. From the Highways England Technical Appraisal Report 2016 and the presentation of Feb 2<sup>nd</sup> discussed in section 5, the estimated cost is as follows:

- 1- The estimated cost of a 2.9km tunnel is £1.4 billion
- 2- If the tunnel is 4.5km, it would cost is £2 billion
- 3- As far as the Mission could gather if the tunnel is extended by 0.9km westward, for a total length of 3.8km, its estimated cost would be £1.78 billion.

### **6.2 Process of design propositions and decision-making**

6.2.1 An overview of the changing proposals, from prior to the first Mission through the intervening 14 months to the second Mission, makes it possible to better understand the range and sequence of considerations brought to play regarding the tunnel length and portal placements. These considerations are essentially heritage-related, economic, and technical.

6.2.2 An 'initial' state of affairs emerged following the December 2014 announcement by the UK Government that it would invest in upgrading the A303 ABD into a dual carriageway, including by its tunnelling on the perimeter of the WH property (see section 2.1 above). This announcement has led to several preliminary propositions by Highways England, the scheme developer. These included a "short" tunnel (being 2.1 km in length), as well as a longer tunnel, but one that would have been cut-and-cover rather than bored – that is, which is dug down from the surface over its whole length. This was quite rightly considered totally unacceptable by the official SP heritage bodies (HE, EHT) and the National Trust. The 2.1 km proposal was the subject of a public inquiry in 2004 and was recommended by the inquiry Inspector in his report published in 2005, but the UK Government cancelled the scheme in 2007.

6.2.3 English heritage agencies and institutions have proactively engaged with the issue, in order to provide to Highways England an answer to the question: "if a (bored) tunnel was to be built of a length inferior to 4.5 km, where would its portals be best placed on heritage grounds?" This 'best placement' was reached upon a complex factoring of predominantly heritage consideration, bearing on the assessment of adverse and beneficial effects to the WH property and its OUV. A study was carried out in 2014 by Nicola Snashall (NT) and Christopher Young (former EH – HE), and a number of potential locations were suggested by English Heritage (as it was then). As presented to the 2015 Mission, the more compelling locations in terms of heritage were identified as 'E' to the East ('online' – that is, on the path of the actual, single carriageway, A303) and 'A1' to the West (i.e. 'offline', to the south of the current A303). See Figure 2. The measured distance between these two points is of 2.9km – hence the proposal and proposal by the SP to build a bored tunnel "at least 2.9km long".

6.2.4 In October 2015, the first ICOMOS/UNESCO Advisory Mission raised serious misgivings about the location of the Eastern portal. It was considered of paramount importance to be able to recover the integrity of "The Avenue", an early Bronze Age path that leads from the Stonehenge monument to the Avon River (and clearly an integral part of the WH property OUV). While the Avenue is currently cut by the A303, the removal of this road will enable to recover its line (if not original fabric which is understood to have been destroyed by the construction of the present A303 road), provided that the Eastern tunnel portal was bored further to the East of it (and not to the west of it, as is point 'E', separating it from the Stonehenge monument).

The location for the Eastern portal is still under consideration, although the resulting eastward re-location was presented in the 2017 Briefing Pack presented to the current Mission. It has also been included in the documents of the non-statutory public consultation (run by Highways England from 12 January to 5 March 2017) as routes D061, D062 (see Figures 4.1-4.3 and section 1.4.3 above).

6.2.5 Studying the preparatory documents for the second UNESCO/ICOMOS Mission, and through inquiries during the Mission itself, it has become clear to the Mission members that, in the subsequent reiterations of the proposed routes (corridor D 061 - 062) a highly important design decision has taken place: since it was agreed to relocate the placement of the Eastern portal some 400 meters (as estimated on scaled Figure 3) eastwards (so as to 'reunite' the Avenue with the monument), a design decision was taken to move correspondingly by 400 metres eastwards the placement of the Western portal (initially proposed at A1, as discussed above). In other words, the length of the tunnel was considered to be fixed, at 2.9km: just like a piece of string, the moving of one end (eastwards) necessarily moves the other, in the same direction. This is illustrated through a map provided in a document produced by AAJV and entitled "A303 Amesbury to Berwick Down Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" Iteration 1 Report, HE551506-AA-GEN-SWI-RP-YE-000003, P3.0, 15th December 2016" appended to the complete 2017 Briefing Pack on pp. 730-791 (followed by appendices). The map in question is Figure 4: Corridor D route options p. 790, reproduced here as (Figure 3).

A comparison of Figure 2 (A1 in Snashall & Young 2014), Figure 3 (this AAJV produced map) and Figure 4.1-4.3 (from the non-statutory public consultation PDF document) shows that the AAJV Map – with the eastwards shift of the two portals clearly marked, and the

designation D061-62, is the one that has been put forwards in the public consultation – and commented on by various stakeholders.

The first Advisory Mission commented on the difficulties of a Western portal being sited within the WH property. Given the importance of the overall archaeological landscape of the property, the tunnel portals and approach roads would be a major change that could have severe consequences to the OUV of property.

The Mission has concluded that if a tunnel solution were ultimately to be pursued, as part of the iterative design process, an extension of the tunnel should be considered so that the Western Portal and its associated approach road would be located appropriately outside the WH property to avoid its negative impacts on the OUV of the property, including its landscape, monuments and archeological richness, or its setting; and, although the re-positioning of the eastern tunnel portal to the east of the 'Avenue', (but still within the WH property), is an improvement, it is not yet an ideal solution; and further refinements in the position are needed to ensure that impacts on OUV are avoided or mitigated. A location closer to the Countess roundabout should be considered (bearing in mind other archaeological features in the vicinity, including Blick Mead and Vespasian's Camp).

6.2.6 As one of the useful outcomes of this discussion regarding tunnel length and portal placements, an additional issue (on top of heritage and economic considerations) was identified, that of technical considerations. As indicated to the Mission orally by the Highways England, over a certain length of tunnel (- Such as? Is it 3, 4, 4.5 Km? What does it depend on? How can that be affected? - ) it is necessary to provide the tunnel with ventilation through vertical shafts (in addition to that 'naturally' induced by traffic flow, or by a ventilation system at the portals). This technical requirement was apparently considered by the heritage bodies (though this does not appear in the documents provided), who requested to ensure that no such ventilation shafts would be placed within the WH property.

The Mission requests further clarification on this possible technical constraint, and on its possible role in limiting the length of the proposed tunnel. The Mission requests confirmation as to the reality of the requirement by the heritage bodies – that there be no ventilation shafts on the WH property – and the degree to which this request has contributed to rule out the 4.5 Km option discussed above. Further to that, it is requested that the SP and the heritage bodies weigh the benefits of a longer tunnel against the necessity of accepting one or two ventilation shafts with the WH property – a provisional HIA could be carried out, in view of assessing how might such shaft(s) be judiciously and sensitively located so as to have no or minimal impacts on heritage assets, on landscape, on visibility, on visitor safety and enjoyment etc. Furthermore different tunnel construction options might be considered that require less ventilation shafts.

### **6.3 Specific comments on the proposed Eastern and Western tunnel portals locations and approach roads**

#### **6.3.1 On the Eastern Portal.**

The Mission notes that the recommendation of the April 2016 with regards to the recovery of the prehistoric 'Avenue' was taken on board. All proposals made subsequently, including in the non-statutory public consultation, have explicitly placed the Eastern portal to the East of the Avenue. Some documents, including the press release of the heritage

bodies, explicitly relate this decision to the first ICOMOS/UNESCO Mission report (see Annex 3).

The SP and its heritage bodies will nonetheless need to remain particularly vigilant, as further decisions are taken and plans proceed, that a full heritage impact assessment is carried out in the area, and that both the portal and its access route and construction infrastructure have no adverse effect on heritage assets that contribute to OUV. This needs to be emphasised because the area to the east of the Avenue within the WH property contains several heritage assets, some well known such as Vespasian's Camp, others in the course of being investigated, such as Blick Mead (Mesolithic). Concerns about these heritage assets have already been expressed by respondents to the public consultation.

### **6.3.2 On the Western Portal and its associated approach road.**

The location of the Western Portal as currently proposed (e.g. in the non-statutory public consultation documents) is the subject of major criticism. In addition to various comments by professional archaeologists and other stakeholders, this Western portal proposal is also subject to considerable scrutiny by Snashall & Young 2017, in their preliminary HIA.

The objections raised by the above bodies and stakeholders to the current proposition D061-062 for both the portal and the almost 2km approach road concern issues of integrity to the archaeological landscape, as well as inter-visibility of the monument which are presented in section 6.4 and overall to impact on OUV. In addition, other objections are related to the presence of newly discovered or confirmed archaeological remains in the A303/ A360.

Indeed, as indicated above (section 4.1) the non-intrusive and intrusive evaluation work already carried out by AAJV and their sub-contractor Wessex Archaeology, as well as by Historic England has brought in some new results, which have been synthesised in Snashall & Young 2017. As indicated in their figure 2 ("Key groups of attributes of OUV", reproduced here as Figure 5) these include the occurrence of two long barrows and a hengiform monument in the area around the Diamond copse (n° 18 in the figure), and the broadening of the boundaries of the Normanton Down Barrow Group (n° 14/15).

The conclusions of the Snashall & Young 2017 report is that both routes D061 and D062 have to various degree adverse impacts on OUV, and cannot be as such accepted. This assessment by Snashall & Young 2017 served as the basis for the joint position statement by HE, NT and EHT following the non-statutory public consultation (Annex 3) whereby "The western tunnel portal location as shown in the consultation documents need significant improvement" (though no specific mention was made here of the highly adverse impact of the approach road).

The ICOMOS/UNESCO Mission fully endorses the reservations expressed by the heritage bodies – and those expressed even more forcefully by the professional archaeological community and the wider public as well – regarding the negative impact on OUV of currently proposed Western Portal (D061-62) and its associated approach road.

## **6.4 Landscape impact at the western tunnel portal**

The impact on OUV should cover both archaeological sites and their disposition and inter-visibility in the landscape therefore the landscape analysis is not separate from archaeology. During the mission a video simulation was shown where the dynamics of the highway

“erupting” out of the tunnel on the proposed western portal within the WH property landscape could be seen with a bird’s eye view. The vision of the traffic dynamics, the embankments required to create a landscape surface, flat enough for the road levelling and highways’ smooth slopes, impressed the whole audience because of the considerable earth movements that this construction would require within the limits of the inscribed WH property.

It was noted that the video was generic, and did not reflect this specific scheme in any way in the portrayed use of embankments. However, from a landscape architecture point of view, the earth works of a highway with embankments are always an impacting procedure in any landscape, let alone one where every archaeological assessment is likely to reveal much information on a time period spanning from the Neolithic to the Romans.

The afternoon of that day, a visit on-site to different visual important points took place. Highways England, National Trust, Historic England and English Heritage pointed out the approximate place where the 2.9km tunnel would emerge, and this only confirmed the landscape impact and the harm that the western portal location decision as currently proposed (fig 6.4.1) would cause to the integrity of the WH property's complete landscape.

A photograph taken near Long Barrow (fig .6.4.2) shows the project director pointing to the estimated location where the Western portal will emerge (fig 6.4.3), to the east of the woodland patch called "the Diamond". In both proposed routes D061 and D062), the portal will destroy part of this forest. The exact location of this photograph is shown in point 5 in the map fig.6.4.1, and a view of this open landscape allowed the mission to understand the visual proximity of the Stonehenge circle to the many barrows and Neolithic remains, establishing a network of inter-visible landmarks that compose this rich landscape.

As seen from the photographs of the visit (fig.6.4.4) and the map the landscape presents green rolling hills, clumps of forest, a pig production area (fig 6.4.5), edges along the walks and from many points of view the barrows, the *Cursus*, and the circle are visible.

The removal of the A303 would finally unite this whole landscape within the WH property and that visitors will be able to (finally) enjoy this unique landscape without any disturbance, being able to walk from Stonehenge circle to Normanton barrows or along the Avenue and hiking the whole length of the *Cursus*, then the SP is improving much of the WH property as a united landscape.

This would allow visitors to appreciate and perceive this WH property as it was built during the millennia of ritual and religious use. However, in this case the cutting by a highway of this united landscape with the final 900m of outside open highway will just damage again the silence, the quietness and the view of this unique WH landscape.

## 6.5 Visitors access and control

6.5.1 As indicated above in dealing with the SP's responses to the 2016 recommendations, (section 3.3.), it is urgent that more be understood and planned with regards to "**the day after**", when and once the tunnel is open and operational and the landscape is "reunited". Question of access and control, the centralising position of the Stonehenge visitor centre (EHT) and other means of access to the land (NT) need already now to be anticipated – and shown to be taken seriously.

- The SP will want to ensure that it can deliver on its heritage promises, that burying the A303 in a tunnel (or through constructing a bypass) has heritage benefits in addition to traffic ones, and that whole Stonehenge landscape is made more accessible for a greater number.

- At the same time, the SP will want to ensure that proper protection and control measures are designed and applied, in a situation when the A303 (surface) is no longer here to serve as a 'natural' protective barrier and channel for Stonehenge related traffic.

- Some precise questions of access routes, car parks (paying? protected?), facilities and shops (with possibly local benefits) can be anticipated, as well as a diversity of access to Stonehenge, including a diversity of physical routes as well as narratives.

- Particular attention should be paid to the Avenue, and the Eastern Tunnel portal. With the link between the Stonehenge monument and the river Avon 'recovered', it can be expected that the Avenue, the stretches that remains and those that can be re-united, will generate further public and tourist attention, be it in the context of special events and processions (solstices) or on a more recurrent basis. Measure should be in place to ensure that enjoyment and appreciation of these features does not compromise their integrity in any way.

6.5.2 - The issue of **the 'free road-glimpse' of the Stonehenge monument** that will be lost needs to be taken seriously and address properly. The Mission recommends to the SP, as part of its anticipation and preparation ahead of the completion of longer Tunnel, or a bypass, to undertake- a comparative study of the 'public visibility' of selected sites and monuments, in urban settings or in the countryside, including (1)- all the WH property in the UK, (2) – the top 10 (or 15, 20, however relevant) most visited EHT and NT sites, and (3) the top 10 (or 15, 20, however relevant) most visited heritage sites in the UK (non EHT or NT)). Such a study will seek to assess how many and how such sites and monuments are (a) visible without entry (payment, control) and (b) at all visible, and to what degree from through road or public paths, without detours or specific deviations.

Such a study, involving heritage and tourism professionals, will serve to assess for its worth the important claim on the loss of the Stonehenge 'free view from the road'.

6.5.3 – **Between Stonehenge and Avebury.** All of the major monuments owned & cared for by the National Trust in both the Stonehenge and Avebury parts of the WH property are accessible for free and are permissive open access land, open 24 hours a day, 7 days a week, all year round. However, there an urgent need for better coordination between the two heritage bodies (EHT and NT) responsible for the management of the WH property, which appear to be behaving here somewhat like competitors for money-spending customers, rather than as partners in the custodianship and enhancement of what is a single WH property with a single overarching management plan. Instead of ignoring each component, or reluctantly parting with information ("we have run out of brochures and they have not yet restocked us", "sorry no map, but you'll need to drive northwards about 40 minutes" – paraphrases of answers given to the Mission expert at the Stonehenge information desk), it should be expected of these heritage agencies (and especially EHT, which oversees the visitor centre) to consider both components as if they were 'their own', with possibilities and encouragement of tie-in visits.

6.5.4 – Stonehenge-Avebury. The existing management mechanisms and process, (under which NT and EHT are active participants in the WH property governance structure –

comprising ASAHRG, the WHS Committees, WHS Partnership Panel, WHS Liaison Group and multiple WHS-focused task and finish groups) should be reviewed and refined to ensure that the two teams work better together, alongside of course the Wiltshire authorities and local stakeholders, to ensure that as smooth connections as possible are being made and reinforced between the Stonehenge and the Avebury components, in terms of visitor information (both on-site and upstream on the respective websites, with links etc.), access, facilities, experience, interpretation.

This process could be implemented within the framework of the MOU as recommended by the First Mission (recommendation 3.1). The SP has indeed set up subsequently a Memorandum of Understanding regarding the relationships and modes of collaboration between the heritage bodies (HE, NT, EHT and WCAS) (see point 5.14 of the Briefing Pack). Within the remit covered by this MOU (5.14.8, 5.14.9) should be added a working group specifically concerned with the links between the Stonehenge and the Avebury components of the property.

This connection between the Stonehenge and Avebury components is all the more relevant for two reasons:

- 1) Recent research and interpretation rightly emphasize the "landscape" dimension, which should address the inter-connectedness of the components of the WH property (e.g. Salisbury, Old Sarum, Devizes, Stonehenge and Avebury, Silbury hill, and more...).
- 2) The eventuality of the A303 ABD infrastructure project materialising will clearly cause considerable disruptions during construction. Visitor behaviour may well take new patterns and seek different routes and sites: the specific ways in which Avebury may be included in the circuit (with all the potential risks incurred in visitors upsurge) needs to be thought-out and agreed, with from the onset all national and local heritage bodies and stakeholders.

## **7 - Management Plan and sustainable tourism strategy**

### **7.1 - Sustainable tourism strategy**

The consideration of the WH property in its entirety (Stonehenge and Avebury) is a prerequisite to any mitigation measure to the current development project. Indeed, to resolve a traffic problem or to restore the integrity of the WH property does not imply the same approach. Up to now, it seems that the resolution of the traffic problem, by dualling the lines of the A303 and boring a tunnel, is presented as a project of restoration of the visual integrity of the WH property, therefore directly enhancing the OUV of the property. On the contrary, any change of the situation on which the adopted OUV was defined should be carefully considered on the property as a whole, including on the overall integrity and authenticity of the property and not on specific components of the OUV, ie: Stonehenge monuments and surroundings monuments. The wider landscape of the WH property is to be considered and not only the scheduled monuments. Therefore, the mitigation measures of the proposed project must address the traffic flows and the visitor flows in the property as a whole, *Stonehenge, Avebury and Associated monuments*. Two members of the Mission requested to go to Avebury on the last day of the mission and met with the local stakeholders with the view to understand the global situation and draft appropriate recommendations.

The visit to Avebury and the meeting with the local stakeholders confirmed the need to take into consideration more closely the Vision developed for the site in the 2015 Management Plan and to consider the impact of the change induced by the A303 project on the Vision itself (p.10 of the MP) and the subsequent management priorities. It is worth to recall that the Management Plan stated : “*given the density of the known archaeology, there is considered to be great potential for new discoveries within the WHS, and the protection of the archaeology and the landscape is given a high priority in development control decision within the WHS*” (MP, p.18). The 2015 Management Plan (the first joint Stonehenge and Avebury WH Site Management Plan) must be the reference document on which to ground the review of the heritage impact assessments and of the mitigation measures in all their aspects. In addition to the OUV and its attributes, key notions put forward by the MP should be used to this aim such **the landscape** in all its features and **the national and local values of the property**.

It is important to acknowledge that UNESCO policies and internationally agreed objectives, which should be reflected in the State Party management approach, are fully included in the Management Plan, including *Visitor Management and Sustainable Tourism* as a key management issue and opportunity. However, a WH property Sustainable Tourism Strategy is still to be developed.

Consequently, the mission recommends as a priority that, in line with the priorities of the 2015-2021 Management Plan, a sustainable tourism strategy of presentation and promotion of the WH property be developed as soon as possible with the view 1) to frame the mitigation measures, such as the loss of direct visual access of Stonehenge Monument, into a wider context; 2) to ensure that the economic benefits related to the WH property are spread to the community and the wider county and 3) to ensure the lasting conservation of the site.

The Mission further recommends that, in the same spirit, stakeholders meetings and public consultation about the Stonehenge scheme should be extended to Avebury and north of Wiltshire areas.

## **8 - Future Consultation, Engagement and Advice**

Having regard to the requests in the Terms of Reference for the Mission to consider appropriate mechanisms for future consultation, advice and engagement, and how the World Heritage Centre and its Advisory Bodies can offer advice on the impact on the OUV of the WH property in light of the reporting process to the annual World Heritage Committee and statutory timescales of the Development Consent Order (DCO) application, as the plans to address the problems caused by the existing A303 trunk road traffic are further developed over the coming years, the Mission has concluded that the program of consultation, engagement and advice should continue.

There should be a process of ongoing consultation and discussion between the World Heritage Centre, ICOMOS (as Advisory Body) the State Party, the excavation and analysis team of Historic England, Highways England, the AAJV and Wessex Archaeology, and the HMAG, in order to facilitate the best possible outcome for the property.

A program of ongoing advisory Missions is warranted. One of the aims set by the Mission has been "To examine ways by which ICOMOS/UNESCO can offer further upfront advice as the project develops".

The Mission considers that a further Mission concerning the A303 ABD Scheme sets up a new 'consultative' process with stakeholders, local communities, residents, civil society, Stonehenge alliance, ICOMOS UK as well as professional archaeologists, academics and universities etc. During the first Mission in October 2015, such a "surgery" has proven very successful – including a 15 minutes presentation by a range of stakeholders to expose their views and gain a better understanding of their position. Given the development of the scheme and its growing precision of the Scheme, and prior to any decisions being taken, such a renewed consultation process in the framework of a joint ICOMOS/UNESCO Mission would prove very useful.

The timing and unfolding of such follow-up missions remain to be determined with the SP, in function of the calendar related to the A303 ABD scheme – DCO, Governmental decision, and also in function of the requirements of the World Heritage Centre and the World Heritage Committee.

The State Party needs to accept that for this iconic WH property it would be appropriate to adjust the project program and the expectations of all major participants to align with the World Heritage Committee timeframe and process, through careful attention to the 'triggers' which instigate statutory timeframes and deadlines. It would not be appropriate for the relevant SP Minister to take any decision without enabling the Committee inputs to inform that decision. The Mission notes that while there will be a State of Conservation report considered at the next Session of the Committee (after which the Committee Decision should guide the State Party and its agencies in how to proceed), that this need not preclude the Minister receiving advice and information earlier, but would require a longer timeframe for final decisions than is currently intended.

## **9. Conclusions and recommendations**

### **9.1 Conclusions**

A joint ICOMOS/UNESCO Advisory Mission was undertaken on the 31 January – 3 February 2017 concerning the A303 Amesbury to Berwick Down road Scheme and its impacts on the Stonehenge WH property and its OUV. Issues of traffic surrounding Stonehenge are long-drawn affair. The single carriageway stretches of the A303 within the WH property perimeter have long proved to represent (a) a hindrance to the flow of traffic in a major artery to the South-West of the country, and (b) an adverse impact on the Stonehenge monument (165m distant from the road) in terms of noise and pollution, and also on the wider Stonehenge landscape, its integrity and its enjoyment.

Like the preceding Mission in October 2015 (reported in April 2016), this Mission was undertaken at the request of the SP in order to obtain insights and advice on the ongoing process by which propositions are fleshed out and eventually promoted with regards to the A303 ABD Scheme. It must be emphasized that it is not the aim of this Mission to approve or endorse any proposals or to anticipate official responses by ICOMOS, UNESCO, or the World Heritage Committee.

In a Briefing Pack, the SP provided comprehensive information and documentation relating to:

- 1) its responses and actions upon the recommendations of the First Mission, and
- 2) the various measures undertaken since the first Mission (October 2015) in terms of choice of operator (AAJV) by the developer (HiA), and subsequently in terms of design, scheme development, route selection, Heritage Impact Assessment, and archaeological intrusive and non-intrusive operations.

The Mission took place during a phase of non-statutory public consultation (12.01 – 5.03.2017) launched by the SP and the scheme developer Highways England. Specific consideration of this consultation process was not part of the remit of the Mission: it is worth noting however that the information and proposals released as part of this public consultation was the one that was available to most stakeholders, academics and wider public – and that it is on the basis of this information that comments and reactions were formulated.

The Mission appreciated the investment, commitment and goodwill demonstrated by the SP and its agencies and officers. However, the Mission also noted weaker aspects in the process by which the findings of the HIAs and the OUV of the WH property and its attributes were integrated and taken into account in the decision-making mechanisms.

As well, for the tunnel option, specific proposals regarding portal locations made by the SP pose considerable threats to OUV. These weaknesses, addressed throughout this report and further discussed in the form of recommendations below, concern such aspects as the scientific reinforcement and credibility of HIA measures (both Archaeology and Landscape related), the transparency of the decision process, and the proposed location of the tunnel portals. Although commitment to a bored tunnel of "at least 2.9 km" long has been reiterated since the onset of the current process (2014), and although the SP's heritage bodies and the National Trust seem well conscious of the need for considerable flexibility in this respect, to avoid threats to OUV, this may not be fully the case with the scheme' developers and their consultants.

Regarding the currently proposed locations of the tunnel portals (if such a tunnel is to go ahead), the Mission has reached the following conclusions. The location of the Eastern portal as proposed (including in the non-statutory consultation) – is situated within the boundaries of the WH property. Its repositioning to the east of the important prehistoric feature known as the 'Avenue', linking the Stonehenge monument to the river Avon, clearly follows heritage and OUV considerations, and as such is to be welcomed. Nevertheless further refinements in the position are needed to ensure that impacts on OUV are avoided or mitigated. A location closer to the Countess roundabout should be considered, especially with regards to approach routes and infrastructure during construction, (bearing in mind other archaeological features in the vicinity, including Blick Mead and the Vespasian's Camp).

The location of the Western portal as currently proposed (including for the purpose of the non-statutory public consultation) is also situated within the boundaries of the WH property. This placement is highly likely to bring adverse impacts to a range of archaeological monuments on its course, and to the wider landscape inter-visibility relations of the WH property elements and thus to impact adversely and unacceptably on its OUV. This conclusion rejoins and reinforces the misgivings expressed by the SP heritage bodies, both during the Mission and in their joint position statement of 8 February (Annex 3).

The Mission urges the SP to work further in order to identify satisfactory solutions to the A303 traffic issues that would not comprise the OUV of the WH property, and that would abide by the SP's international obligations in these matters. To this end, the joint ICOMOS/UNESCO advisory Mission readily endorses the SP's request to ensure the further engagement and availability of international advisors in subsequent Missions, with terms of references and a calendar to be jointly fixed. ICOMOS and UNESCO stand by the SP in this challenging and complicated process of ensuring that solutions to the A303 traffic issues are done in full respect of the OUV of the WH property.

## **9.2 Recommendations**

Following the 3 days of on-site visit and interactions with SP representatives, developers, heritage bodies and other stakeholders, the joint ICOMOS/UNESCO advisory Mission puts forward a series of recommendations.

These are presented here in sequence, dealing first with recommendation following from the previous Mission, with recommendation related to current developments, and with recommendations for further involvement in the process. For that reason there is some overlap.

### **9.3 Recommendations following from the first mission:**

#### **9.3.1 Recommendation proposed in relation to section 3.2 above.**

The Mission recommends:

-That (a) the "HMAG scientific committee" be immediately fully constituted, and ensured to include independent scientific experts (i.e. unrelated to the 4 official bodies or agencies already implicated), such as university based academic researchers (e.g. from London, Southampton, or Bournemouth) and representatives of the "Avebury and Stonehenge

Archaeological and Historical Research Group" (ASAHRG) – as per requirements of the just published "Research framework document" (Leivers & Powell 2016).

-That (b) the scientific committee be implicated, upstream, in all matters that it considers relevant and within its areas of expertise, and not be limited to punctual or "additional advice" at the instigation and judgement of the HMAG official bodies.

-That (c) the "HMAG scientific committee" has the time, availability and access to all the information necessary in order to proactively ensure that all archaeological operations undertaken on the WH property (and indeed on the A303 ABD Scheme as a whole) are not limited to mitigation considerations in the framework of commercial, developer-led archaeology, but abides by academic standards and contribute also to ongoing research agendas and the generation of new knowledge.

9.3.2 Recommendation proposed in relation to section 3.3 above.

The Mission recommends:

-That the SP takes all the necessary steps to adequately study visitor behaviour and their changes as likely to occur in the eventuality of a tunnelled A303 road, or a bypass, and a reconfigured Stonehenge landscape. The proposed study, logically to be undertaken by the heritage bodies, should be launched as soon as possible, including its scoping, identification of in house or external expertise, and its funding by the developer. It should also include research and study, including surveys and questionnaires, leading to a thorough understanding of the issue of the "loss of visibility" of the Stonehenge monument by passing motorists.

#### 9.4 Recommendations related to current developments

9.4.1 Recommendation proposed in relation to section 4.4 above.

The Mission recommends:

-That all the A303 ABD Scheme related Heritage Impact Assessment and archaeological evaluation work, both non-intrusive and intrusive, is undertaken to standards requested of the academic research projects undertaken in the same area. This includes the availability of skills and personnel, the appropriate use of mechanical and of manual tools, and appropriate sampling and analysis strategy etc. The scheme's developer and the heritage bodies should take on board the required duration and costs of these measures.

-That in the event that the project proceeds in a manner which requires further archaeological investigation then the SP should take all the necessary measures to ensure by all possible means that the archaeological operations undertaken on the A303 ABD – both within and outside the WH property perimeter – fulfil their dual mission, which is to provide well-established and potentially decisive heritage assessment, and also take the unique, unrepeatable opportunity to contribute research generated knowledge about the past. This objective may be assisted by:

- a) recruiting the HMAG scientific committee, as soon as possible with both ASAHRG and academic researchers fully involved; and
- b) ensuring that the standard of archaeological work at the WH property meets the standards demanded of research excavations, and not those, necessarily different in their aims, practice and yes, costs, that apply in some areas of commercial archaeology. This would also mean to follow and implement the recent report published for the WHS management by Wessex Archaeology "A Research Framework for the Stonehenge, Avebury and Associated Sites World Heritage Site: Research Agenda and Strategy" (Leivers & Powell 2016):

#### 9.4.2 Recommendations proposed on section 5.

The Mission recommends:

-That the F010 option should be further explored as an alternative (even if it will take a longer route and a longer time frame) for further studies as it would have a much lesser impact on the OUV of the WH property (and also will cost considerably less);

- The SP should inform WH Centre, as per paragraph 172 of the *Operational Guidelines*, about the large industrial project near the military airport south of the WH property that could impact on the F010 road lay out but also on the property nearby.

-That, if a longer tunnel was to be pursued as an option, an extension of the tunnel should be considered so that the Western portal and its associated approach road would be appropriately located outside the WH property to avoid negative impacts on the OUV of the property, including its landscape, monuments and archeological richness, or its setting. The SP should undertake a comprehensive Heritage Impact Assessment for the portal and approach road placement which addresses archaeology, the visibility and noise factors incorporating a landscape impact study focusing on the inter-visibility and visual envelopes (viewshed) of the Western portal and highway locations. These studies should support a solution that avoids impact on the OUV of the WH property.

- That, while the re-positioning of the eastern tunnel portal to the east of the 'Avenue', but still within the WH property, is an improvement, it is not an ideal solution, and further refinements in the position are needed to ensure that impacts on OUV are avoided or mitigated. A location closer to the Countess roundabout should be considered, (bearing in mind other archaeological features in the vicinity, including the Mesolithic Blick Mead and the Iron Age Vespasian's Camp).

#### 9.4.3 Recommendation proposed in relation to section 6.2 above.

The Mission recommends, if longer tunnel options are pursued:

-That the technical options and issues surrounding the ventilation of a tunnel be addressed in good time for decision taking on the length of a tunnel (and the placement of the portals). The needs for ventilation and the range of possible solutions should be understood upstream, including the opportunities provided (in terms of tunnel length and costs and the challenges raised (in terms of the placement and intrusiveness of eventual ventilation shafts).

#### 9.4.4 Recommendation proposed in relation to sections 6.3 and 6.4 above.

The Mission recommends, if longer tunnel options are pursued:

-That negative impacts on the WH property and its setting should be avoided, bearing in mind that as an early WH inscription the WH property does not have a buffer zone and the rolling landscape within which it stands is prone to higher impacts from visual intrusions because of very high inter-visibility issues.

-That the SP should ensure that the process of portal location selection and design is more secure and explicit in terms of analysing their impact on OUV, and its attributes encompassing both archaeology and landscape,

-That because any change in the landscape; (and the tunnel portals and their approach roads are a major change); could have severe negative impacts on the OUV of the WH property,

(a) if the D061/D062 were still to be pursued as an option, an extension of the tunnel should be considered so that the Western portal would be located outside the WH property to avoid its negative impacts on the OUV of the property, its landscape, monuments and archeological richness, and the Western portal and associated approach road, are located so that they would not pose any threat to the property or its setting.

- That supported by visual studies (b) new designs are proposed to locate the Western portal and associated approach road so that they do not pose any threat to OUV in line with the SP's commitment to protect and enhance the OUV of the WH property, and that detailed HIAs are undertaken for each proposal.

-That (c) the A303 stretch west of the A360 to Berwick Down benefit from the same attention and standards of evaluation, HIA, archaeology and landscape, as those deployed within the perimeter of the WH property.

## **9.5 Recommendations for further involvement in the process**

Recommendation proposed in relation to section 7 above and the Mission generally:

There should be a process of ongoing consultation and discussion between the World Heritage Centre, ICOMOS (as Advisory Body) the State Party, the excavation and analysis team of Historic England, Highways England, the AAJV and Wessex Archaeology, and the HMAG, in order to facilitate the best possible outcome for the property.

A program of ongoing advisory Missions is warranted. One of the aims set by the Mission has been "To examine ways by which ICOMOS/UNESCO can offer further upfront advice as the project develops", in response to that, and in view of the unfolding of the A303 ABD scheme and its possible future developments.

The Mission recommends that the SP establish a new 'consultative' process, such as an open forum, with stakeholders, local communities, residents, civil society, Stonehenge alliance, ICOMOS UK as well as professional archaeologists, academics and universities to engage into a dialogue with communities concerned.

The timing and unfolding of such follow-up missions remain to be determined with the SP, in function of the calendar related to the A303 ABD scheme – DCO, Government decisions and the requirements of the World Heritage Committee, the World Heritage Committee and ICOMOS.

However the Mission recommends that the project programme and the expectations of all major participants should be adjusted to align with the World Heritage Committee timeframe and process, through careful attention to the 'triggers' which instigate statutory timeframes and deadlines.

## List of Figures (and sources)

**Figure 1a.** Site location plan – Wessex Archaeology (p. 625 of complete Briefing Pack). Figure 1 in "A303 Amesbury to Berwick Down. A303 Archaeological Evaluation. Report Interim Draft. Arup Atkins Joint Venture. HE551506-AA-EHR-SWI-RP-YE-000005, P01.2, Interim Draft".

**Figure 1b.** Site location plan – Historic England (p. 339 of complete Briefing Pack) Figure 1 in Historic England "Stonehenge Southern WHS survey, Diamonds field, Boreland farm, Wiltshire. Report on geophysical surveys, August 2015".

**Figure 2.** The "2.9 Km" proposal A1-E. From the Snashall & Young 2014 report, reproduced from the ICOMOS/UNESCO First Mission Report.

**Figure 3.** Corridor D route options (p. 790 of the Briefing Pack). Figure 4 in AAJV, "A303 Amesbury to Berwick Down Heritage Impact Assessment in relation to the Outstanding Universal Value of the Stonehenge, Avebury and Associated Sites WHS Undertaken in accordance with the 2011 ICOMOS "Guidance on Heritage Impact Assessments for Cultural World Heritage Properties" Iteration 1 Report, HE551506-AA-GEN-SWI-RP-YE-000003, P3.0, 15th December 2016".

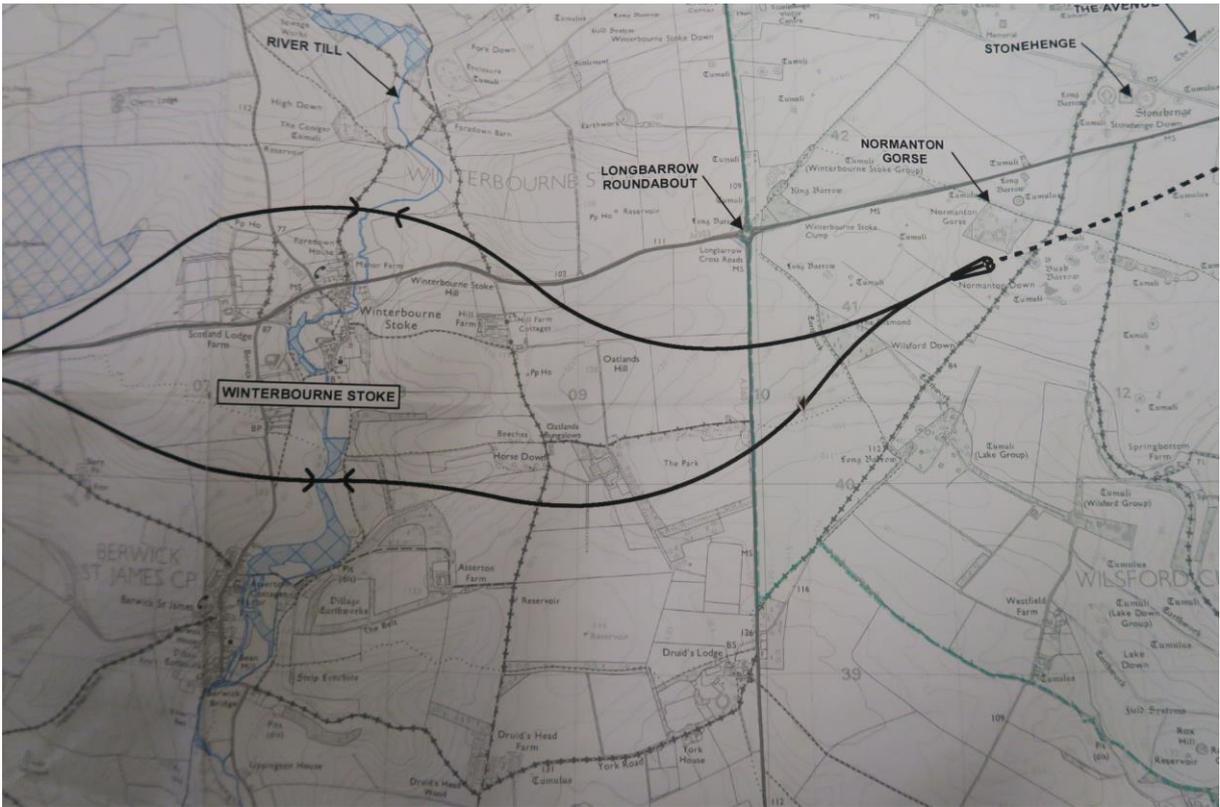
**Figure 4. 1.** Public consultation Booklet January 2017 – Overview  
4. 2. Public consultation Booklet January 2017 – Proposed option.  
4. 3 Public consultation Booklet January 2017 – Proposed emplacement of Western Portal.  
Highways England "A303 Stonehenge. Amesbury to Berwick Down. Public Consultation Booklet – January 2017"

**Figure 5.** "Key groups of attributes of OUV", p. 10 (Fig.2) in Snashall N. & Young C. 2017, "Stonehenge A303 improvement: outline assessment of the impacts on the Outstanding Universal Value of the World Heritage property of potential route options presented by Highways England for January 2017", HE & NT 2017

**Fig 6.4.2. - Pointing to the western portal approximate location seen from Long Barrow**



**Fig. 6.4.3 - Western portal site at 1 to 30.000 - 2016 by Highways England**



**Fig. 6.4.4 - The rolling hills of Stonehenge WH property landscape**



**Fig. 6.4.5 - Pig farm seen from Long Barrow**



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[http://www.stonehengeandaveburywhs.org/assets/2015-MANAGEMENT-PLAN\\_LOW-RES.pdf](http://www.stonehengeandaveburywhs.org/assets/2015-MANAGEMENT-PLAN_LOW-RES.pdf)

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## Annexes

1 - Terms of reference for the present mission

2.1 - Unfolding of the Mission

2.2- List of present: contributors, abbreviations, names of bodies and their roles

3 - Position statement from Historic England, National Trust and English Heritage on Highways England's public consultation on route options for the A303 road improvement scheme in the Stonehenge world heritage site (8 February 2017, see <https://historicengland.org.uk/whats-new/news/historic-england-english-heritage-national-trust-on-proposed-a303-stonehenge-tunnel>)

4 - Summary of Highways England Technical Appraisal Report

## Annex 1

### Terms of reference for the present mission

#### **UNESCO AND ICOMOS - second Advisory Mission to the Stonehenge Component of the Stonehenge, Avebury and Associated Sites World Heritage Site**

Consideration of WHS landscape and OUV issues in relation to emerging draft proposals to improve the A303 trunk road running through the WH Property

#### **Context**

In December 2014 the UK Govt. announced that it would invest in a bored tunnel of at least 2.9km in length to solve the long-running traffic problems along the A303 trunk road within the WH Property. The removal of the damaging surface A303 from within the WHS has been a long-held ambition of the UK Govt., due to the chronic traffic congestion and serious harm the current road is causing to its Outstanding Universal Value (OUV). This is not only due to the noise, pollution and distraction of heavy traffic, but also due to the effective severance of the bulk of the WH Property to the south of the current A303 from the northern part of the Property containing Stonehenge and other major ceremonial sites and monuments.

Historic England, together with the National Trust and English Heritage, are engaging closely with the scheme promoters Highways England, in the interests of securing a scheme which has the optimum benefits for the WHS. In recognition of the need for any scheme proposal to demonstrate to the World Heritage Committee (the Committee) that it would not impact adversely on the Outstanding Universal Value of the WH Property in addition to resolving the traffic issues, we have initiated an ongoing process of engagement with both ICOMOS International (hereafter ICOMOS) and the World Heritage Centre (WHC). The overarching future aim of this engagement over the period of scheme design and assessment is to ensure that the scheme promoters and designers have the benefit of iterative advice from the Centre and ICOMOS throughout the process, to achieve the best result for the WHS and in doing so to satisfy the Committee that significant benefits for the WHS will be achieved.

The UK State Party invited UNESCO and ICOMOS to make an initial Advisory Mission in October 2015, so that the international experts could provide initial advice on archaeological and tunnel processes based on a familiarity with the Stonehenge component of the WH Property and its heritage/OUV, and an understanding of the broad thrust of the potential scheme (given that no plan proposals were in existence at that time). The mission also provided an opportunity for its experts to meet and gain an impression of the views of a wide range of stakeholders with an interest in the WHS and the A303.

The report of the October 2015 Mission was published in April 2016 and was welcomed by the State Party as a constructive engagement with the overall project by the international advisers. The report contained a comprehensive set of recommendations on the overall project processes based upon the information available at that early stage. Now that Highways England are progressing through a series of initial 'design fixes'<sup>1</sup> for a potential scheme ahead of the first tranche of public consultation early in 2017, the time is right to invite the WHC and ICOMOS to return to the WH Property and advise upon the emerging scheme.

#### **Purpose of the Proposed Advisory Mission**

The second proposed Advisory Mission has five main strands:

- To feed back to the WHC and ICOMOS on the measures taken, planned, or in progress, to implement the recommendations of the April 2016 Mission report (on

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<sup>1</sup> Design Fixes are stage gateways in the process of route options selection and the evolution of a draft scheme design

archaeological heritage management, governance and decision making processes, territorial planning process and benefits, and long term traffic prediction and on the whole asset life design of the scheme within the WHS and road network development.

- To seek the advice of the WHC and ICOMOS on current progress with the emerging scheme proposal within and adjacent to the WHS based on work undertaken to inform its potential heritage impacts, including upon its OUV;
- To brief the Mission on the nature, timetable and phasing of the UK statutory planning process for nationally significant infrastructure projects and specifically the Development Consent Order (DCO) process under which the detailed scheme proposal would be put out for consultation and considered by the UK Planning Inspectorate;
- Examine what kind of heritage-centred steering mechanism will be put in place to ensure quality control at all stages of decision making.
- To agree on effective means of future engagement with ICOMOS (need for additional expertise, consultation, desk reviews, TOR evaluation, skills assessment, advisory mission, technical assistance) within the DCO consultation and examination process and, and to agree on a feasible timetable for such engagement, taking account of the fixed, statutory timeframe within which the DCO must work and of the fixed cycle of World Heritage Committee meetings. These are important considerations, as the DCO statutory process cannot be paused or halted to allow for additional consultation and the World Heritage Committee must also have the opportunity to consider the scheme, albeit outside of the UK statutory planning process.

#### **Forthcoming public consultation exercise**

Highways England is currently preparing for a non-statutory public consultation on its proposed route options, to commence in early 2017. Although this phase of public consultation is not a statutory requirement of the DCO, Highways England as the scheme promoter is committed to demonstrating best practice throughout the development of emerging scheme proposals.

This public consultation exercise will set out details of Highways England's work in sifting route options down to its proposals for public consultation and set out the supporting technical information which is available at this stage. This will include preliminary engineering information and the results of the archaeological assessment and evaluation of the Highways England's proposals and HIA.

The public consultation exercise must therefore be robust, unbiased and comprehensive, in the spirit of the DCO process the proposed scheme will later enter. Given the extensive nature of this forthcoming public consultation, it is not proposed to revisit the stakeholder consultation sessions which formed part of the 2015 Mission. The full range of stakeholders engaged in 2015 will be consulted by Highways England through January and February 2017 as part of a much wider-ranging consultation process.

The mission may provide guidance and technical expertise on the terms of reference of this non-statutory consultation process and include the results of the consultation in a heritage centred steering mechanism.

#### **Terms of Reference**

On the basis of briefings on the following, the complete package of which will be made available to the WHC and ICOMOS by Tuesday 20<sup>th</sup> December at the latest, the mission will consider:

- Progress by the UK State Party, Highways England and heritage partner organisations on the implementation of the recommendations of the April 2016 Mission report, responding to all points raised in that document.

- The results of archaeological assessment and evaluation of possible route alignments, potential tunnel portal locations and possible associated new surface road within the WH Property.
- The likely effects upon the attributes OUV of the WHS of potential tunnel portal sites and possible associated new surface road in the various options being considered, and as articulated in HIAs
- Feedback on what kind of heritage-centred steering mechanism to ensure quality control at all stages of decision making is being set up or can be set up.
- The potential benefits to the WHS made by any archaeology identified during archaeological assessment and evaluation of potential tunnel portal sites and associated new surface road within its boundary and to wider research in the property on an ongoing basis
- The whole asset life design of the proposed options within the WHS and road network development and longer term impact on the region.
- The nature of the Development Consent Order (DCO) process under which the detailed scheme proposal would be considered by the UK Planning Inspectorate, the statutory timescales for DCO, and the comprehensive nature of public consultation ahead of DCO submission.

The UK State Party and UNESCO will work to agree how best the WHC and ICOMOS can offer upstream advice on the protection of the OUV of the WHS. As the plans to address the problems caused by the existing A303 trunk road traffic continue to be developed over the coming years, Highways England as scheme developers will ensure budgetary provision will be made available to facilitate this upstream process. This should allow provision for additional expertise, consultation, desk review, TOR evaluation, skills assessment, advisory mission, technical assistance if needed.

The Mission shall provide advice on:

- The measures that the UK State Party, Highways England and heritage partner organisations have taken, or have in progress, to respond to and implement the recommendations of the April 2016 Mission report
- The impact of the emerging scheme proposals on the OUV of the WH Property based upon the partial information available at the time of the mission in the design process, which comprises:
  - The results of archaeological and other assessments and evaluation of potential tunnel portal sites and possible associated new surface road within the WHS in relation to the attributes of OUV
  - The draft route of a potential tunnel schemes and associated new surface road within and adjacent to the WHS
  - Initial computer-generated visualisations of aspects of potential new infrastructure, including tunnel portals, vertical alignment, cuttings and embankments
  - Available Cultural Heritage Impact Assessments

- Relevant technical and engineering aspects of the potential scheme as available at this stage of development
- Relevant technical and planning aspects regarding the whole asset life design of the scheme within the WHS and road network development and longer term impact on the region.
- Evaluate additional expertise, consultation, desk review, TOR evaluation, skills assessment, advisory mission, technical assistance if need be.
- How best the World Heritage Centre and its Advisory Bodies can offer advice on the impact on the OUV of the WHS in light of the reporting process to the annual World Heritage Committee and statutory timescales of the Development Consent Order (DCO) application, as the plans to address the problems caused by the existing A303 trunk road traffic are further developed over the coming years

### **Mission Report**

A Report is to be submitted by the Mission team. **It is essential that this report be provided by the end of March 2017.** This will allow UK authorities and stakeholders to understand the WHC and ICOMOS's advice in time for it to be considered alongside the results of public consultation and incorporated within a report to be submitted to the Secretary of State for Transport in early May 2017. The Report will address the items listed in the terms of reference above, with a specific focus on the potential impacts on the OUV of the WHS of the proposed tunnel project and on possible traffic planning & design options.

It is an essential criterion of this Mission that the report is delivered within the timescale identified, due to the very short window of opportunity to incorporate the conclusions of the Mission within the report to the Secretary of State.

**Contractual note** – the report of the Advisory Mission should be delivered by the WHC to the Department for Culture, Media & Sport, acting as the UK State Party to the World Heritage Convention, who may choose to share it with the UK Permanent Delegation.

### **Information to be provided by the State Party in advance of the Advisory Mission – to be made available to the WHC and ICOMOS by 20<sup>th</sup> December 2016 at the latest**

- As background for the 2017 Mission team, we will provide a copy of the full Briefing Pack supplied in advance of the October 2015 Advisory Mission, together with follow-up documents provided after the mission visit. We will also, for completeness, include a copy of the April 2016 Mission report.
- A briefing report setting out the measures taken, planned, or in progress, to implement and respond to the recommendations of the April 2016 Mission report. This will be a detailed report which will respond to each of the recommendations made in that document.
- Archaeological assessment and evaluation reports from fieldwork undertaken at potential tunnel portal sites and associated new surface road, including geophysical survey reports, desk-based assessment and archaeological field evaluation.
- Geotechnical and ground investigation reports to enable understanding of relevant non-heritage related engineering technical constraints or opportunities
- Maps showing the draft road-line for the bored tunnel and associated new surface road within and adjacent to the WH Property

- Initial computer-generated visualisations of aspects of potential new infrastructure, including tunnel portals, vertical alignment, cuttings and embankments
- Cultural Heritage Impact assessments of the proposed options on the attributes of OUV.
- Relevant technical and planning aspects regarding the whole asset life design of the scheme within the WHS and road network development and longer term impact on the region.
- Feedback on what kind of heritage-centred steering mechanism to ensure quality control at all stages of decision making is being set up or can be set up.
- A more detailed briefing pack on the Development Consent Order (DCO) process than was supplied for the initial Advisory Mission, setting out aspects of the application process, the comprehensive nature of public consultation, the examination process and timescales/key milestones in the programme for A303 Stonehenge. This briefing pack will allow delegates the opportunity to gain an initial understanding of the processes ahead of a presentation and discussion of the DCO during the Mission

## **ITINERARY**

### **Day one, Tuesday 31<sup>st</sup> January 2017**

- **Late AM** – Arrival in Wiltshire by Isabelle Anatole-Gabriel and Christina Castel-Branco. Collection arranged from local transport hub and afternoon spent on familiarisation tour of Stonehenge component of the WH Property – to include Stonehenge and visitor centre, Durrington Walls, Woodhenge, Cursus, driving tour of WHS perimeter. Professor Nathan Schlanger will travel directly to Tisbury for late afternoon/early evening.
- **Late afternoon** – Mission team transferred to hotel (The Lamb, Hindon) & settled into accommodation
- **Evening – 7pm for 7.30 pm**, Venue The Lamb, Hindon welcome dinner incorporating run through of Mission itinerary (guests from Department for Culture, Media and Sport, Highways England, their consultants Atkins Arup Joint Venture (hereafter AAJV), Historic England, English Heritage, National Trust, Wiltshire Council and the Chair of the WHS Partnership Panel (guest list to be circulated in advance of the dinner).

### **Day two, Wednesday 1<sup>st</sup> February**

- **8.30am** collection from Lamb Inn (PM and CG)
- **9 AM** start at National Trust Tisbury Hub – Welcome & Introductions - NT Tea/coffee
- **9.15 am** First session - DCMS introduce response to 2015 Mission report – followed by presentations from Highways England, AAJV, Historic England, English Heritage, Wiltshire Council and National Trust on measures taken to implement & integrate recommendations – general discussion session, likely to be a half day workshop with a break at 11am for tea/coffee)
- **1pm** Lunch
- **2pm** Continuation/conclusion of first session
- **3pm** Break –tea/coffee
- **3.15pm** Afternoon session - the Development Consent Order process Highways England led – run through, focusing on strong emphasis on pre-app consultation, need for comprehensive and meaningful consultation – the statutory process and its stages – how Amesbury-to-Berwick Down project fits into the process – timescales and opportunities for engagement
- **4.30pm** Questions
- **5.30pm** Transfer to hotel (PM and CG)

**Day three, Thursday 2<sup>nd</sup> February** (based at Education Room, Stonehenge Visitor Centre)

- **8.30am** collection from Lamb, Hindon, for transfer to Stonehenge Visitor Centre
- **9AM** – Update from Highways England on options sifting and selection process – discarded options – forthcoming public consultation – then focus on “working assumption” tunnel route within WHS
- **10.45** tea/coffee break
- **11-1130** Presentation on Historic England archaeological survey work within Stonehenge WHS south of the A303 (the Southern WHS Survey, Phase 1)
- **1130-1230** Highways England/Wiltshire Council presentation of results of archaeological assessment & evaluation of potential tunnel portals and new surface road within WHS
- **12.30pm** Presentation of EH, NT, Historic England and WC positions on Highways England’s public consultation
- **1pm** Lunch
- **1.30-4.30pm** (max.)– out into WHS landscape – afternoon visiting route of potential tunnel scheme in light of morning session presentations – discussion re archaeological impacts, OUV, engineering and any other issues (informed by earlier discussion)
- **4.30pm** return to VC for tea/coffee/defrost and Questions
- **5.30pm** Transfer to hotel (PM and CG)

**Day four, Friday 3<sup>rd</sup> February**

- **9 AM** start at NT Tisbury Hub – wash-up session – opportunity for any initial feedback or observations on presentations or site visit
- **10.45am** tea/coffee break
- **11am** finish with closed session for Mission to have private discussion or opportunity to revisit key points in WHS landscape if required
- **1/1.30pm** (depending on above) Lunch and disperse – Mission guests driven back to local transport hubs. (National Trust)

**Costs**

Costs will be met locally by Highways England, the scheme promoters

Author – Phil McMahon, Inspector of Ancient Monuments, Historic England SW Office, 13<sup>th</sup> January 2017

## **Annex 2. 1**

### **Unfolding of the Mission**

(31 January – arrival to base, The Lamb B&B, Hindon)

#### **Day 1 - 1st February 2017**

Location National Trust Tisbury Hub  
Welcome and Introductions (Ian Wilson (NT))

Topic 1 - DCMS response to 2015 Mission report (Hannah Jones - DCMS)

Followed by presentations on measures taken to implement and integrate recommendations: Highways England – Andrew Alcorn; AAJV – Andrew Croft; Historic England – Phil McMahon and Henry Owen-John; English Heritage – Jenny Davies; Wiltshire Council – Parvis Khansari and Melanie Pomeroy-Kellinger; National Trust – Ian Wilson, Ingrid Samuel and Nick Snashall

Topic 2 - Development Consent Order process (James Lough - AAJV)

Highways England led run through focusing on:

Pre-application consultation; the need for comprehensive and meaningful consultation; the statutory process and its stages; how the Amesbury-to-Berwick Down project fits into the process; timescales and opportunities for engagement

#### **Day 2 - 2nd February 2017**

Location Education Room, Stonehenge Visitor Centre

Topic 1 Update from Highways England on:

Options sifting and selection process – discarded options – forthcoming public consultation then focus on “working assumption” tunnel route within WHS (by Geoff Dodsworth, Andrew Croft and Liz Brown - AAJV).

Topic 2 Presentation on Historic England archaeological survey work within Stonehenge WHS south of the A303 (the Southern WHS Survey, Phase 1) (by David Roberts and Phil McMahon - HE).

Topic 3 - Highways England/Wiltshire Council presentation of results of archaeological assessment & evaluation of potential tunnel portals and new surface road within WHS (by Melanie Pomeroy-Kellinger –WCAS & Andrew Croft -AAJV)

Topic 4 - Presentation of Historic England, National Trust and English Heritage’s interim position on Highways England’s public consultation (by Phil McMahon - HE)

Topic 5 - WHS landscape tour – afternoon visiting route of potential tunnel scheme in light of morning session presentations – discussion re archaeological impacts, OUV, engineering and any other issues (informed by earlier discussion)

#### **Day 3 - 3rd February 2017**

Location National Trust Tisbury Hub

Topic 1 – Opportunity for any initial feedback or observations on presentations or site visit.

Topic 2 – Travel to Avebury by Cristina Castel-Branco and Isabelle Anatole-Gabriel with NT team. Visit aspects of Avebury Landscape on route – Silbury Hill (with Nick Snashall and Jan Tomlin - NT).

## Annex 2. 2

### List of present: contributors, abbreviations, names of bodies and their roles

#### Individuals

##### ICOMOS mission representatives:

**Cristina Castel-Branco** - Professor in Landscape Architecture, Centre for Applied Ecology, University of Lisbon, ICOMOS Scientific Committee on Cultural Landscapes

**Nathan Schlanger** - Professor of Archaeology, Ecole Nationale des Chartes

##### UNESCO World Heritage Centre representative:

**Isabelle Anatole-Gabriel** - Chief of the Europe and North America Unit at the World Heritage Centre

**Hannah Jones** - World Heritage Site and Underwater Policy Advisor, Department for Culture, Media and Sport

**Henry Owen-John** - Head of International Advice, Historic England

**Andrew Vines** - Planning Director South West, Historic England

**Phil McMahan** - Inspector of Ancient Monuments, Historic England

**David Roberts** - Project Manager, Archaeological Investigation and Excavation, Historic England

**Ingrid Samuel** - Historic Environment Director, National Trust

**Nicola (Nick) Snashall** - Archaeologist (Stonehenge and Avebury WHS), National Trust

**Ian Wilson** - Assistant Director of Operations, National Trust

**Cass Genn** - Senior Project and Stakeholder Manager (S-W Infrastructure), National Trust

**Katherine Ryan** - Project Coordinator, National Trust

**Tracey Reed** - Director of Operations, English Heritage Trust

**Heather Sebire** - Properties Curator West, English Heritage Trust

**Jenny Davies** - Acting General Manager, Stonehenge, English Heritage Trust

**Sarah Simmonds** - World Heritage Site Co-Ordinator, WHS Co-Ordination Unit

**Melanie Pomeroy-Kellinger** - County Archaeologist, Wiltshire Council

**Parvis Khansari** - Associate Director, Highways and Transport, Wiltshire Council

**Andrew Alcorn** - Project Manager, Highways England

**Andrew Croft** - Cultural Heritage Workstream Lead, Arup Atkins Joint Venture

**James Lough** - Stakeholder Workstream Lead, Arup Atkins Joint Venture

**Geoff Dodsworth** - Project Director, Arup Atkins Joint Venture

**Liz Brown** - Landscape Architect, Arup Atkins Joint Venture

Also present at the Avebury visit (on 3<sup>rd</sup> February):

**Janet Tomlin** – General Manager

**Eva Stuetzenberger** – Visitor Engagement and Enterprises Manager

**Hilary Makins** – Countryside Manager

**Nick Snashall** – WHS Archaeologist

**Rosamund Cleal** – Curator, Alexander Keiller Museum

**Katherine Riyan** – Senior Project Coordinator

**Sarah Simmonds** – WHS Partnership Manager

**Heather Sebire** – English Heritage Properties Curator West

## **Institutions: abbreviations, and their brief description**

- AAJV** – Arup Atkins Joint Venture. The commercial entity contracted by Highways England to develop route options for the Scheme.
- DCMS** – Department for Culture, Media & Sport. UK Government department with responsibility for World Heritage Sites in England.
- EHT** – English Heritage Trust. Charitable body which manages the Stonehenge monument and Visitor Centre, and many other historic locations in England, under licence from Historic England.
- HiE** – Highways England. UK Government owned company charged with delivering the Road Investment Strategy and the maintenance and operation of England's trunk road and motorway network.
- HE** – Historic England. UK Government's advisor on the historic environment in England.
- ICOMOS** – International Council on Monuments and Sites. International non-governmental organisation providing independent expert advice on the protection of cultural and archaeological heritage to UNESCO.
- NT** – National Trust. A charitable conservation organisation, which owns and manages parts of the Stonehenge WHS.
- OUV** – Outstanding Universal values – UNESCO World Heritage convention criteria for granting World heritage status.
- SP** – State Party (to the 1972 convention). Here, the United Kingdom of Great Britain and Northern Ireland.
- UNESCO** – United Nations Education, Science and Culture organisation.
- WHS** – World Heritage Site.
- WCAS** – Wiltshire Council Archaeology Service. A dedicated county archaeological and historic environment advisory service, including HER, provided by the County of Wiltshire as part of its responsibilities.

## Annex 3

Position statement from Historic England, National Trust and English Heritage on Highways England's public consultation on route options for the A303 road improvement scheme in the Stonehenge world heritage site (8 February 2017, see <https://historicengland.org.uk/whats-new/news/historic-england-english-heritage-national-trust-on-proposed-a303-stonehenge-tunnel>)

### **POSITION STATEMENT FROM HISTORIC ENGLAND, NATIONAL TRUST AND ENGLISH HERITAGE ON HIGHWAYS ENGLAND'S PUBLIC CONSULTATION ON ROUTE OPTIONS FOR THE A303 ROAD IMPROVEMENT SCHEME IN THE STONEHENGE WORLD HERITAGE SITE**

Highways England has put forward initial route options for a road improvement within the Stonehenge World Heritage Site (WHS) which include a bored tunnel of at least 2.9km. These options for a potential scheme have been put to public consultation as one stage in an extensive process of pre-application engagement.

We believe that the proposals have the potential to deliver benefits for Stonehenge and its landscape, if sited and designed sensitively. Whilst the overall proposals are to be welcomed for the positive transformation which they could bring to the WHS, there are some aspects of what is currently presented in the consultation documents that will require significant improvement to ensure protection of the WHS.

We welcome the fact that the Government and Highways England invited the UNESCO World Heritage Centre and their heritage advisers ICOMOS back to the WHS for a second visit, to look at the detail of these initial proposals.

The three key points in Historic England, English Heritage and the National Trust's response to the A303 Stonehenge public consultation on route options relate to the principle of the bored tunnel and the two tunnel portals, as follows:

#### **1. Centre Section – the Bored Tunnel**

The options include a twin-bored tunnel of at least 2.9km, as committed to in the Government investment announcement of December 2014. This is a key aspect of any scheme which could unlock enormous benefits for Stonehenge and the wider WHS. It would allow the removal of much of the current, damaging surface A303 allowing the reunification of the large part of the WHS to the south of the existing road with the part to its north containing Stonehenge and the other currently accessible major ceremonial monuments. This would restore peace and tranquillity to Stonehenge whilst opening up safe public access to the many monuments and extensive landscape which lies to the south of the current A303.

#### **2. Eastern Tunnel Portal**

Highways England's proposals could deliver significant improvements for heritage in the eastern section of the route, where the proposals would allow the course of the Stonehenge Avenue – presently severed by the A303 - to be reunited. It is the first time that Government has recognised the importance of the Avenue in its proposals. It has responded to the advice given by the UNESCO World Heritage Centre and their heritage advisers ICOMOS in their April 2016 report. The proposed scheme is a significant improvement on the previously approved scheme from 2004, which would have worsened the severance of the Avenue by the A303.

### **3. Western Section**

The western tunnel portal location as shown in the consultation documents needs significant improvement, due to its proximity to and impact on the Normanton Down barrow group – one of the key groups of ceremonial and funerary monuments for which the WHS is designated. We are presently considering how the western portal proposals might be amended to ensure benefit to this internationally important ancient landscape. We will include constructive comment on this as part of our formal response to the public consultation and will seek Highways England's commitment to improving this aspect of the scheme.

#### **Engagement with international World Heritage experts**

We are pleased that Government and Highways England invited the UNESCO World Heritage Centre and their heritage advisers ICOMOS to make a second visit to the Stonehenge landscape to consider the proposed route options. The constructive advice which they provided to Highways England following their initial visit to consider a potential road scheme in 2015 has been valuable in informing the development of the route options to their current form, including moving the location of the eastern portal to reunite the Avenue. This second visit gives them the opportunity to further shape the emerging proposals.

Historic England, English Heritage and the National Trust will be submitting their full responses to this first round of consultation before it closes on 5 March.

A number of public information events are being held for people to give their feedback, and further information is available online at: [www.highways.gov.uk/a303stonehenge/consultation](http://www.highways.gov.uk/a303stonehenge/consultation)  
We understand there will be another round of consultation later in 2017 on Highways England's more detailed proposed solution before they submit a Development Consent Order application to the Planning Inspectorate in 2018.

## **Annex 4**

### **Summary of Highways England Technical Appraisal Report**

Extracts from the Technical Appraisal Report - Highways England 2016

The Technical Appraisal Report that was provided by the Highways England project director during the Mission Feb 2<sup>nd</sup> 2017, is available at the following link:

[https://highwaysengland.citizenspace.com/cip/a303-stonehenge/supporting\\_documents/Volume%201%20%20TAR%20red%201.pdf](https://highwaysengland.citizenspace.com/cip/a303-stonehenge/supporting_documents/Volume%201%20%20TAR%20red%201.pdf)

From this large 320-page Report, the mission has extracted the sections that concern the selection of the present options to replace the A303.

Pages 2-4

#### **Initial Corridor appraisal – Design Fix A**

##### **Identification of corridor options**

There have been a wide range of proposed solutions to traffic problems on the A303 at Stonehenge over many years. A review was undertaken of some 60 route options that have been proposed by Government, stakeholders and the public in the past. These options were grouped into a series of corridors which contained route options with similar characteristics.

This resulted in eight corridors, representing the groups of route options described as follows, and illustrated in Appendix B2:

- Corridor A – Surface routes north of the existing A303 (wholly outside WHS).
- Corridor B – Surface routes north of the existing A303 (partially inside WHS).
- Corridor C – Surface routes within 1.0 km of the existing A303 (as the route options pass through the WHS).
- Corridor D – Routes including a tunnel (at least partially within the WHS).
- Corridor E – Surface routes south of the existing A303 (at least partially inside WHS).
- Corridor F (north) – Surface routes south of the existing A303 (wholly outside WHS) and north of Salisbury.
- Corridor F (south) – Surface routes south of the existing A303 (wholly outside WHS) and north of Salisbury, further south than Corridor F (north).
- Corridor G – Surface routes south of the existing A303 (wholly outside WHS) and south of Salisbury.

The objective of this phase of the selection process (Design Fix A) was to undertake a multi-criteria assessment of the eight corridors and ultimately to recommend corridor(s) to be taken forward for further consideration.

The assessment and appraisal methodology used the following three criteria:

- a) Client Scheme Requirements.
- b) Web-based Transport Appraisal Guidance's (WebTAG) Early Assessment and Sifting Tool (EAST).
- c) National Policy Statement for National Networks (NPSNN) environmental aspects.

## **Key outcomes of the appraisal**

### *Surface route options within the WHS (Corridors B, C and E)*

Surface route options within the WHS would offer transport benefits and could be delivered at a lower cost than a tunnelled solution but would be considered unacceptable from a cultural heritage point of view.

A surface route close to the existing A303 would fail to reduce severance within the WHS and would cause substantial harm to the Outstanding Universal Value (OUV) of the site.

Options involving a surface route to the north or south of the existing A303 would reduce the visual and noise impacts of the road on the Stonehenge monument itself but any such route would still affect the character of the WHS and would also cause substantial harm to the OUV of the site.

National Trust and Historic England have identified that a surface route through the WHS has the potential to ‘compound and multiply’ the harmful effects of the existing A303 and they would be unable to support surface dualling due to these very large adverse effects. They considered the harmful effects to be of such a large scale that it would likely lead to the inclusion of the WHS within the UNESCO’s World Heritage “in danger” list and may even lead to the loss of the WHS designation for Stonehenge and Avebury.

### *Tunnelled Routes within the WHS (Corridor D)*

A tunnelled route through the WHS would reduce severance within the WHS and improve the setting of key assets such as Stonehenge. The surface elements may cause adverse effects on the character of the WHS but it is considered that substantial harm can be avoided with appropriate design. A tunnelled route has the potential to contribute to the enhancement of the historic landscape within the WHS. Notwithstanding its high capital cost, a tunnelled route would deliver transport and economic benefits in line with the objectives for the scheme.

### *Surface Routes outside the WHS (Corridors A, F (north and south) and G)*

Because of the location of adjacent settlements, there is limited scope to realign the A303 to the north of the WHS (Corridor A), however, a route that would skirt the northern boundary of the WHS was considered. Such an option would reduce severance within the WHS, but it would also have substantial harmful impacts on other sensitive assets. On balance, the harmful impacts would outweigh the benefits associated with the removal of the A303 through the WHS.

Corridor F surface route options to the south of the WHS would remove the A303 from the WHS in its entirety. This would bring substantial benefits by reducing severance and improving the setting of key assets, including the Stonehenge monument. These benefits would need to be balanced against adverse environmental effects of constructing a longer route within a high quality, unspoilt landscape with the associated loss of habitats.

Surface route options to the south of the WHS would also offer a less direct route for through traffic and would therefore offer reduced transport benefits. More traffic would also remain or divert onto local roads, giving rise to adverse impacts on local villages and communities.

A surface route to the south of Salisbury was also considered (Corridor G). The length of such an option would lead to substantially increased habitat loss and severance compared to other corridors and it would also impact a significant number of communities and designated nature conservation sites. This option, whilst offering improved access to Salisbury would also fail to

reduce journey times for users of the A303 through this section. On this basis, the corridor was not considered to meet the transport and environmental objectives of the scheme.

### **Better performing corridor options**

On the basis of the initial assessments, as summarised above, Corridors A, B, C, E and G were not taken forward for further consideration. This left tunnel options within Corridor D and surface options within Corridor F (north) and Corridor F (south) being taken forward for further consideration in Design Fix B. These are shown in Appendix E and also in Figure 2 below.

Pages 30-31

## **2.3 Expansion on headline requirements**

2.3.1 The CSRs provide an overall framework of objectives. However, to assist with measuring performance against the CSRs, each of the four headline CSRs was expanded to provide a series of more detailed requirements.

### **Transport**

- The road will be designed to modern standards and, in addition, to perform as an Expressway.
- The design of the road and connections with the local network will address issues of congestion, resilience and reliability. It will reduce risk of traffic diverting onto local roads.
- Road safety will be improved to at least the national average for a road of this type.

### **Economic growth**

- The road capacity, together with Non-Motorised User (NMU) provision, will be increased to dual carriageway all-purpose between Amesbury and Berwick Down, linking with existing dual carriageways to the East and West.
- Grade separated junctions will be introduced to create a road that meets Expressway standards, designed to accommodate foreseeable traffic growth.
- Grade separation will also assist traffic and NMU wishing to cross the A303 and so stimulate local economic activity and reduce severance. A-GEN-SWI-RP-CX-000020 | P13, S0 21/12

### **Cultural heritage**

- The existing road will be downgraded as it passes through the WHS for use by non-motorised users and for access.
- The strategic route will be redirected so as to reduce its site and sound impacts on the WHS. The redirected route will treat archaeological features with sensitivity and will protect the Outstanding Universal Value (OUV) of the WHS. It will seek to minimise any damage to or loss of archaeology.
- Grade separated junctions will be introduced in place of at-grade junctions on the A303 within the length of the scheme, improving access onto and off the A303, with well-designed signing to access the WHS.

- Where the road passes through the WHS it will have an iconic identity and be of good design. As far as is practicable and without compromise to safety, the design will seek to accommodate the specific needs of the WHS.
- Learning associated with any excavation within the WHS will be ensured, by working sensitively and in close collaboration with key heritage stakeholders.

### **Environment and community**

- Land no longer forming the public highway within the WHS will be returned to the adjoining landowner. Where practicable and with the permission of the owner, it will be landscaped in accordance with the adjoining land.
- Biodiversity within new landscaping along the route will ensure a net addition over that which exists currently.
- The A303 will bypass Winterbourne Stoke and the existing road will be de-trunked as it passes through the village. This will improve the quality of life for the residents of the village.  
Disruption to road users and local residents during the construction of the scheme will be minimised as far as is reasonably practicable. Also, opportunities for materials re-use will be sought as far as is practicable. Opportunities for mitigating impacts will be actively pursued in close consultation with communities.
- Learning and finds during the development of the scheme will be presented to local schools and communities. Presentations will be given to local and regional forums to raise awareness of the scheme, its timing and the potential economic benefits likely to result from an improved road network, as well as employment and supply chain opportunities during construction.
- The scheme will aspire to achieve a Civil Engineering Environmental Quality Assessment and Award scheme (CEEQUAL) rating of excellent.

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### **4.3 National policy**

National Policy Statement for National Networks (NPSNN)

4.3.1 The NPSNN sets out Government policy for the need for, and delivery of, nationally significant road and rail projects. The policy states that the Government will deliver national networks that meet the long term needs of the country and support a thriving and prosperous economy.

4.3.2 Chapter 2 of the NPSNN sets out the following strategic objectives:

- Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs;
- Networks which support and improve journey quality, reliability and safety;
- Networks which support the delivery of environmental goals and the move to a low carbon economy; and
- Networks which join up our communities and link effectively to each other.

4.3.3 It states a critical need to improve the road network to address congestion, providing safe, resilient and expeditious networks which support social and economic activity. These improvements may also address impacts of networks on quality of life and the environment<sup>10</sup>. A well-functioning road network is stated as critical to supporting national and regional economies<sup>11</sup>.

4.3.4 The Government's policy to address this need is to bring forward enhancements and improvements to the existing network. This includes improvements to trunk roads, in particular dualling of single carriageway strategic trunk roads to increase capacity and improve performance and resilience.

4.3.5 Chapter 3 of NPSNN sets the need for improvements to the road network in the context of wider Government policies. These include:

- Environment and social impacts: networks should be designed to minimise social and environmental impacts and improve quality of life; the principles of the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG), as well detailed policy set out in Chapter 5 of the NPSNN should be followed to mitigate effects.
- Emissions: the Government supports the switch to Ultra Low Emission Vehicles (ULEVs), and predicts that increases to emissions as a result of improvements to the road network will be very small as a result of current and future commitments to meet legally binding targets.
- Safety: the Government intends to remain a world leader in road safety, and scheme promoters are expected to take opportunities to improve road safety, employing the most modern and effective safety measures where proportionate.
- Technology: innovative technologies will be monitored for their benefits and risks, but are not expected to alleviate the need to address current congestion problems or negate the need for improvements to the road network.
- Sustainable transport: the Government expects applicants to use reasonable endeavours to address the needs of pedestrians and cyclists. This includes investing in locations where the national road network severs communities and where the national road network severs communities and acts as a barrier to cycling and walking by addressing historic problems, retrofitting solutions, and ensuring safety for cyclists on junctions.
- Accessibility: applicants should improve access wherever possible through delivering schemes which take all opportunities for improvements in accessibility for all users, including disabled users, of the strategic road network.
- Road tolling and charging: the Government's policy is not to introduce road pricing for key trunk roads on the strategic road network

4.3.6 Chapter 4 sets out the assessment principles for the consideration of highway schemes. In particular it states that subject to the detailed policies and protections in this NPSNN, and the legal constraints set out in the Planning Act, that there is a presumption in favour of granting development consent for NSIP projects, such as the proposed scheme.

4.3.7 When considering an application for development consent, the Secretary of State will consider its benefits including for economic growth, job creation, and environmental improvement. This will be considered against adverse impacts of the scheme including long-term cumulative impacts. Such applications are required to be supported by a business case prepared in accordance with Treasury Green Book principles.

4.3.8 The policy states that projects subject to The Infrastructure Planning EIA Regulations 2009 should include an environmental statement with the application. As part of this, the impacts from reasonably foreseeable schemes should be considered in the assessment. The maximum extent of the project's possible impact should be assessed where there are details which are yet to be finalised. The policy also sets out that the application should provide sufficient information for the carrying out of an appropriate assessment by the Secretary of State for Transport, where proposals are likely to have a significant effect on a European designated site.

4.3.9 In relation to alternatives, it is stated that all schemes should be subject to an options appraisal, which should also consider viable modal alternatives. However, where schemes were subject to an options appraisal to achieve their status within road investment strategies, option testing may not need to be considered by the decision maker.

4.3.10 The policy requires principles of good design to inform projects from their inception. The design should work to mitigate the impact of the project in terms of the environment, safety and sustaining operational efficiency. Proposed schemes which are fit for purpose and sustainable can contribute towards the area in which they are located; applicants should demonstrate how the design process has contributed to these aims.

4.3.11 Applicants will have to consider climate change adaptation in the siting, location, design, construction and operation of proposed schemes. This includes demonstrating that there are no critical features that will be affected by the effects of climate change in the long term; this is to be based on the Government's climate change risk assessment and consultation with statutory bodies. The policy also sets out that pollution control, nuisance and statutory nuisance, safety, security, and health should be considered by applicants in the design of their schemes.

4.3.12 Chapter 5 of the NPS sets out the assessment framework against which the application will be considered. The contents of this chapter will be used by the decision maker to establish whether the applicant has considered the necessary areas of assessment. The areas which must be considered are outlined below:

- Air quality.
- Carbon emissions.
- Biodiversity.
- Waste management.
- Civil and military aviation and defence interests.
- Coastal change.
- Dust, odour, artificial light, smoke, steam.
- Flood risk.
- Land instability.
- The historic environment (this includes impacts on WHS).
- Land use including open space, green infrastructure, and greenbelt.
- Noise and vibration.
- Impacts on transport networks.
- Water quality and resources.

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## **Assessment**

### *Introduction*

5.2.115 The results of the three assessment components described above and their respective sub-components were analysed in order to form a qualitative judgement on the potential beneficial and adverse impacts, in order to then make a recommendation on whether to progress a corridor for further consideration of route options within that corridor. The results of the overall assessment are provided below.

### *Assessment against Client Scheme Requirements*

5.2.116 The details of the assessment against CSRs are shown in Appendix B4. Table 5-4 provides a summary of the assessment of the corridors using the 5-point scoring system described in the above methodology section.

[Table 5-4 Results of assessment against Client Scheme Requirements]

5.2.117 Against the Cultural Heritage CSR it can be seen that Corridors B, C and E scored poorly, with these corridors passing directly through the WHS at surface level. Corridor A scored slightly better as it does not pass through the WHS but is in close proximity to it which will cause harm to the setting of the WHS. Corridors F (both) and G scored well against this CSR as they completely avoid direct land take within the WHS.

5.2.118 In respect to the Environment and Community CSR, Corridors A, B and C scored poorly because they include land within a Nationally and Internationally (European) designated nature conservation site, and impact on communities to the north of the WHS. Corridor E scores poorly because it includes land within a Nationally and Internationally (European) designated nature conservation site, is close to a RSPB reserve and impacts on communities within the Woodford Valley. Corridor G scored poorly because it would impact on a significant number of communities along the corridor. It crosses a number of Nationally and Internationally (European) designated nature conservation sites and with its increased length, it is also likely to cause substantial areas of habitat loss. When these points are taken together it is concluded that Corridor G may not allow a net addition to biodiversity. Corridors F (north), F (south) score slightly better as they avoid the RSPB reserve but would impact on settlements within the Woodford Valley. Corridor D avoids impact on the RSPB reserve and settlements within the Woodford Valley and therefore scores better than the other corridors.

5.2.119 Corridors C and D performed well against the Economic Growth CSR, principally because route options within these corridors would deliver the shortest overall length of route of all the options being considered. The shortest route lengths would deliver the greatest journey time savings, and consequently the greater journey time benefits. The longer the route, the less journey time benefits would be delivered, therefore Corridors A, F (south) and G all scored poorly against this CSR.

5.2.120 In terms of the Transport CSR, Corridors C and D were assessed to provide the greatest benefits of all the corridors considered, closely followed by Corridors B and E as these provided the most direct link. Corridors A and F (north) would contain longer routes and therefore score lower. Corridor G scored poorly against this CSR because it would mean road users suffering considerable diversion relative to more direct routes.

### *Assessment against environmental criteria (having regard to EAST and NPSNN)*

5.2.121 The details of the assessment against NPSNN are shown in Appendix B5. Table 5-5 below provides a summary of the assessment of the corridors using the 5-point scoring system described in the above methodology section.

Table 5-5 Results of assessment against NPSNN environmental criteria

Environmental Criteria	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E	Corridor F (north)	Corridor F (south)	Corridor G
Historic Environment	1	1	1	2	1	4	4	2
Biodiversity	1	1	1	1	1	1	1	1
Landscape (incl streetscape and urban environment)	2	2	2	2	1	2	1	1
Air Quality	2	2	3	3	2	1	2	1
Noise	2	3	3	4	2	3	3	3
Water Quality and Resources	2	3	3	2	3	2	1	1
People and Communities	2	3	2	4	2	2	2	1
Geology, Soils and Materials	2	2	2	2	2	2	2	2

### Historic environment

5.2.122 Whilst significantly reducing severance within the WHS, Corridor A would have the potential to harm the setting and key assets of the WHS, including Durrington Walls, and substantial harm to the Outstanding Universal Value (OUV) of the WHS is considered probable. Corridor A would also run through Bulford possibly requiring the demolition and certainly substantially harming the setting of listed buildings, and affecting a Conservation Area.

5.2.123 For Corridors B, C and E, surface routes within the WHS would result in severance, fundamentally altering its character and fabric and resulting in substantial harm to the OUV, which is unlikely to be outweighed by the removal of traffic from the existing A303. In addition these options are likely to require the removal of scheduled assets and would seriously degrade the setting of other scheduled assets.

5.2.124 Tunnel based routes within Corridor D would still include portals and a section of above ground dual carriageway within the WHS, but would bring substantial benefits for the WHS arising from the closure of the A303 to the south of Stonehenge, reducing severance within the WHS and the impact of traffic in the WHS. Overall, it is considered that the potential exists for the benefits to outweigh the harm.

5.2.125 Outside the WHS, all surface routes, including Corridors F (north) and (south) and Corridor G have the potential to adversely impact on the historic environment, including the setting of listed buildings and scheduled assets, registered park and gardens and Conservation Areas.

5.2.126 Adverse impacts were weighed against the benefits of the scheme on the WHS. In this respect Corridors D, F (north), F (south), and G are the better performing with F (north) and F (south) being the best when assessed against the Historic Environment criteria.

## Biodiversity

5.2.127 Corridors A, B, C, D and E have the potential to impact the Salisbury Plain SPA/SAC, including Parsonage Down SSSI/NNR, and at new crossings over the River Avon SAC, encompassing the River Avon and River Till. The corridors also cross or are located in close proximity to a number of nationally designated sites and the Normanton Down RSPB Reserve.

5.2.128 Corridors F (north) and (south), and Corridor G would also have the potential to adversely affect the River Avon SAC. Furthermore, given the length of these corridors, they would be expected to result in larger areas of habitat loss and potential severance. Further south there is also the potential for Corridor G to have an adverse impact on Porton Down SPA and Chilmark Quarries Bat SAC.

5.2.129 All corridors scored equally poorly when assessed against the Biodiversity criteria.

## Landscape

5.2.130 At grade routes within Corridors A, B, C, and D have the potential to impact on the high quality landscape of the non-statutory, locally designated SLA and a number of visual receptors in local communities e.g. Amesbury, Larkhill, Durrington, Shrewton and Winterbourne Stoke.

5.2.131 Corridor E, Corridor F (north), Corridor F (south) and Corridor G have the potential to impact to a greater or lesser extent on the nationally designated landscape of Cranborne Chase and West Wiltshire Downs AONB and a potentially high number of visual receptors within the more rural communities to the south of the WHS, including Steeple Langford, Stapleford, Wylde, Andover and Salisbury, and villages along the Vale of Wardour.

5.2.132 All corridors scored poorly when assessed against the Landscape criteria, with Corridors E, F (south), and G performing the worst due to the high quality landscape of the AONB and a high number of sensitive visual receptors including residential properties and PRoW.

## Air Quality

5.2.133 Corridors A and B are located within 200m of up to four nationally designated ecological sites and have the potential to have an adverse impact on residential receptors at Larkhill, Durrington and Bulford.

5.2.134 In contrast Corridors C and D are unlikely to adversely affect residential receptors and have the smallest increase in emissions based on the traffic modelling undertaken for this Design Fix A stage.

5.2.135 In the south, Corridors E and F (north) and (south) are located within 200m of up to five nationally designated sites and would affect residential receptors within Amesbury, Steeple Langford, Berwick St James, Winterbourne Stoke, Normanton, Stapleford, Lower Woodford, Little Durnford. The closure of the A303 within the WHS and longer routes would result in higher emissions for Corridors F (north) and (south), with the highest emissions predicted for Corridor G. Corridor G would also pass within 200m of up to 10 nationally designated ecological sites and would have potential for adverse effects on residential receptors in communities that include Andover, Grateley, Salisbury, Barford St Martin, and Dinton.

5.2.136 Apart from Corridors C and D, the majority of corridors scored poorly when assessed against the air quality criteria, with Corridors F (north) and G performing the worst due to the greatest increase in emissions.

### Noise

5.2.137 Traffic noise for Corridors A, B, C, and E is likely to increase noise levels in the northern and southern parts of the WHS and for communities and sensitive receptors including Larkhill, south of Durrington, Shrewton, west of Bulford, Berwick St James, Stapleford, and West Amesbury, whilst there would be a reduction in Winterbourne Stoke, and noise Important Areas along the A303. There would also be a reduction as the result of tunnel based options in Corridor D.

5.2.138 Traffic noise as the result of Corridor F (north) and (south), and Corridor G would reduce within the WHS as well as within communities in Amesbury and Winterbourne Stoke. However these corridors would introduce new road traffic impacts at a high number of communities and sensitive receptors in more than thirteen communities along the corridor.

5.2.139 Corridor D, which includes tunnel sections within the WHS, scored best when assessed against the noise criteria, with corridors A and E performing the worst due to communities experiencing increases in noise levels.

### Water environment

5.2.140 Routes within Corridors A, B, F (north) and F (south) include two new river crossings with the potential to adversely affect the water quality, flood risk and biodiversity of the River Till and Avon and the internationally (European) designated habitats and species within the River Avon SAC. Routes C, D and E include a new crossing of the River Till with the potential for adverse effects on water quality, flood risk and biodiversity, and an existing river/floodplain crossing of the River Avon that could potentially be redesigned to provide new ecological and other benefits.

5.2.141 Corridor G includes new crossings of extensive floodplain associated with the River Nadder and River Avon downstream of Salisbury, including the historically, culturally and ecologically important Britford Water Meadows

5.2.142 Small parts of Corridors A, B and the majority of Corridor F (north) cross Source Protection Zone (SPZ) 2, whilst Corridors F (south) and G cross SPZ 1 (The most sensitive area within an SPZ). Corridors C, D and E do not cross the SPZ.

5.2.143 For Corridor D, the tunnel construction would pose the most significant risk to groundwater and, depending on method, could potentially disrupt groundwater flows and the dispersal to the River Avon. However this may be managed by careful planning and design.

5.2.144 Potential adverse impacts associated with the new river crossings and European sites mean that all corridors have a mostly low fit with water environment criteria. However Corridor F (south) and Corridor G score poorly when assessed against the water environment criteria due to the potential for adverse impacts on SPZ 1, the Britford Water Meadow and the River Avon and Nadder floodplains.

People and communities

5.2.145 Corridor A would significantly increase severance within the community of Larkhill. Corridors F (north), F (south) and G would increase severance of access to Amesbury or to Salisbury from several villages located in between these two centres.

5.2.146 Corridors B, C and E would not reduce severance within the WHS nor between Amesbury and residential areas to the north including Larkhill, Durrington and Bulford and Salisbury to the south. Corridors A, D, F (north), F (south) and G would minimise severance and maximise opportunities for connectivity within the WHS.

5.2.147 Corridor D scores best in the assessment against the severance criteria for people and communities, with Corridor G performing the worst due to communities experiencing significant levels of severance.

Geology and soils, and materials

5.2.148 All corridors include sources of potential contamination with varying levels of associated risk. Corridors A and B include potentially contaminant land uses such as MoD Larkhill that includes heavy weapon artillery ranges, Down Barn historical landfill site and non-delineated military waste disposal areas. For Corridors F (north) and F (south) the MoD Boscombe Down airfield and military base spans the majority of the corridor in the east, presenting a potentially significant constraint in respect of land contamination.

5.2.149 All corridors would generate at least a moderate amount of arisings with the tunnel based options in Corridor D and the length of Corridor G considered to generate a significantly higher volume.

5.2.150 All corridors scored poorly when assessed against the Geology and Soils and Materials criteria.

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**Assessment utilising EAST**

5.2.151 The details of the assessment against EAST are shown in Appendix B6. Table 5-6 shows the summary of the assessment of the corridors using the 5-point scoring system.

Table 5-6 Details of the assessment against EAST Cases

EAST Case	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E	Corridor F (north)	Corridor F (south)	Corridor G
Strategic Case	2	1	1	4	1	3	3	1
Economic	3	3	4	4	3	3	2	1

Case								
Managerial Case	2	2	2	4	2	2	2	1
Financial Case	2	2	2	2	2	2	2	1
Commercial Case	3	3	3	3	3	3	3	3

Strategic case

5.2.152 Corridor D was the best performing as it delivered Government and local objectives and addressed well the transport issues. Corridors B, C and E failed to deliver environmental objectives and Corridor G delivered neither transport nor environmental objectives.

Economic case

5.2.153 Economic growth: Corridors C and D performed the best on journey time savings and reliability due to their short lengths. Corridors F (south) and G were the worst performing due to the lengths of routes leading to an increased potential for delay and incidents.

5.2.154 Carbon emissions: Emissions from vehicles were the largest component of this assessment. Corridors C and D were the shortest and therefore were the best performers. Corridors F (south) and G, being the longest, performed the worst.

5.2.155 Socio-distributional impacts and the regions: Weighed over a number of criteria all corridors performed similarly.

5.2.156 Local environment: On balance Corridor D performed the best. The other corridors performed well against some criteria but poorly against others. Overall the other corridors performed worse than Corridor D.

5.2.157 Wellbeing: Weighed over a number of criteria all corridors performed similarly

5.2.158 Expected value for money category based on the indicative Benefit Cost Ratios (BCR): Corridors B, C and F (north) performed the best. Corridor D offered lower value for money, primarily due to the high cost of a tunnel. Corridor G performed the worst due to high cost and limited user benefits with the increased length of the route.

Managerial case

5.2.159 Corridor D performed best as a tunnel scheme had been tested in public previously and there was strong and detailed evidence to support it. Corridor G performed worst as it followed a completely new route which was considered to be more difficult to get through DCO and had no evidence to support it.

Financial case

5.2.160 The financial case considered Capital and Revenue costs and overall cost risk. Corridor G performed worst due to its length which would lead to higher costs.

Commercial case

5.2.161 The commercial case considered funding sources and potential income generated with all corridors scored equally at this stage.

### Summary of overall assessment

5.2.162 The results of the three different assessment methodologies (CSRs, EAST and environmental criteria having regard to NPSNN) were drawn together to facilitate a balanced review of the corridors and the recommendation of corridors to be taken forward for further development and appraisal. A summary of the key findings for each corridor is provided in Table 5-7 below.

Table 5-7 Overall Corridor assessment summary

Overall Corridor assessment summary
<p><b>Corridor A</b></p> <p>Corridor A would provide a route to the north of the WHS. This would reduce severance within the WHS, and could also result in some benefit to the WHS. However, the harm it would cause to the setting of the WHS and key assets within it (e.g. Durrington Walls) mean substantial harm to the OUV of the WHS is probable and, on balance potential harm to the OUV of the WHS would outweigh the benefits associated with the removal of the A303.</p> <p>The corridor may also adversely affect Nationally and Internationally (European) designated nature conservation sites including through the direct loss, in two locations, of parts of Salisbury Plain SPA/SAC. It is likely that this would require significant compensation measures and conflicts with the objective of achieving a net addition in biodiversity.</p> <p>The corridor has the potential to adversely affect communities and land within the settlements at Larkhill, Durrington and Bulford.</p> <p>The corridor would reduce transport costs, improve regional connectivity, support the visitor economy and provide journey time savings compared to the existing situation. Corridor A runs along the northern boundary of the WHS. It is difficult to avoid the receptors or to</p> <p>expand the corridor without resulting in further direct impacts or worsening impacts on receptors such as the Salisbury Plain Special Protection Area (SPA) / Special Area of Conservation (SAC) and communities at Larkhill, Durrington and Bulford. On balance, the overall assessment of the corridor is unlikely to change and it would continue to perform poorly against a number of environmental criteria. Corridor A delivered a relatively poor fit against the CSRs, and overall performed poorly against the environmental criteria. The performance against the EAST criteria was also poor.</p> <p>Given the overall poor environmental performance and the poor fit against the CSRs, it was recommended that this corridor was not taken forward for further consideration.</p>

**Corridor B**

Corridor B would provide a surface dual carriageway route to the north of the existing A303, but would sever the WHS, fundamentally altering its character and fabric and causing substantial harm to the OUV of the WHS. The corridor would adversely affect nationally and internationally (European) designated nature conservation sites which could conflict with the objective of achieving a net addition in biodiversity, but it would reduce road traffic noise and severance in Winterbourne Stoke.

The corridor would reduce transport costs and improve regional connectivity, although the adverse environmental impacts on the WHS may cause negative economic impacts on the visitor economy. The corridor would provide journey time savings compared to the existing situation.

Corridor B performed poorly against the CSRs, specifically in relation to Cultural Heritage and Environment and Community and overall performed relatively poorly against the environmental criteria. The performance against the EAST criteria was average.

Due to the substantial impact on the WHS, and the consequential poor fit against the CSRs, it was recommended that this corridor was not taken forward for further consideration.

**Corridor C**

Corridor C would provide a surface dual carriageway route close to the existing A303 corridor. This would cause substantial harm to the OUV of the WHS and the corridor offers limited opportunity to reduce severance within the WHS and there would be limited or no benefit in terms of noise. The corridor would not contribute to the enhancement of the historic landscape within the WHS and has the potential to adversely affect nationally and internationally (European) designated nature conservation sites which could conflict with the objective of achieving a net addition in biodiversity. It would reduce road traffic noise and severance in Winterbourne Stoke.

The corridor would reduce transport costs and improve regional connectivity, although the adverse environmental impacts on the WHS may cause negative economic impacts on the visitor economy. The corridor would provide journey time savings compared to the existing situation.

Corridor C delivered a very poor fit against the CSRs of Cultural Heritage and Environment and Community, but scored well against Economic Growth and Transport. Overall, Corridor C performed poorly against the environmental criteria. The performance against the EAST criteria was average.

Due to substantial impacts on the WHS it was recommended that this corridor was not taken forward for further consideration.

**Corridor D**

By providing a tunnel within the WHS, Corridor D reduces severance and benefits the character of the WHS and the setting of key assets such as Stonehenge. The above ground elements may cause adverse effects on the character of the WHS but it is considered that substantial harm can be avoided with appropriate design and mitigation. The corridor has the potential to contribute to the enhancement of the historic landscape within the WHS. It would reduce road traffic noise

and severance in Winterbourne Stoke.

The corridor would reduce transport costs, improve regional connectivity, support the visitor economy and provide journey time savings compared to the existing situation. Corridor D had a good fit against the CSRs, particularly Economic Growth and Transport, with the best overall fit of all the corridors. Similarly, the corridor scored the best of all corridors against environmental criteria and EAST.

This corridor offers reduced severance and potential to enhance the WHS and is the best performing corridor of all that were assessed. It was therefore recommended that Corridor D was taken forward for further consideration.

### **Corridor E**

Corridor E would provide a surface level dual carriageway through the WHS to the south of the existing A303. This corridor presents limited potential to reduce severance within the WHS, causing substantial harm to the OUV. The corridor would not contribute to the enhancement of the historic landscape within the WHS. It would reduce road traffic noise and severance in Winterbourne Stoke although this should be weighed against the potential to increase noise in other settlements within the corridor such as at Berwick St James, Stapleford and West Amesbury.

The corridor would reduce transport costs and improve regional connectivity, although the adverse environmental impacts on the WHS would cause negative economic impacts on the visitor economy. The corridor would provide some journey time savings compared to the existing situation.

Corridor E performed poorly against the CSRs, specifically in relation to Cultural Heritage and Environment and Community and overall performed poorly against the environmental criteria, specifically Historic Environment, Biodiversity and Landscape. The performance against the EAST criteria was average.

Due to the impact on the WHS, and the consequential poor fit against the CSRs, it was recommended that this corridor was not taken forward for further consideration.

### **Corridor F (north)**

Corridor F (north) would provide a surface option that would completely avoid the WHS to the south and it would reduce severance and benefit the character of the WHS and the setting of key assets, bringing substantial benefits. Any route that lies entirely within Corridor F (north) would run through the Boscombe Down airfield. The acceptability of this would be informed by engagement with the MoD during the design development stage.

The corridor has the potential to contribute to the enhancement of the historic landscape within the WHS although it may adversely affect some nationally and internationally (European) designated nature conservation sites, and the length of the corridor would lead to increased habitat loss compared to other corridor options. It would reduce road traffic noise and severance in Winterbourne Stoke although this should be weighed against potential adverse noise, severance and visual effects in other settlements within the corridor.

Economic benefits would be reduced because the length of the route would be longer than the existing road, meaning vehicles have to travel greater distances. However, the corridor would

provide journey time savings compared to the existing situation, improve regional connectivity and support the visitor economy. Corridor F (north) performed relatively well the CSRs, specifically in relation to Cultural Heritage. The overall performance against the environmental criteria was average, but showed detriment in respect of air quality. The performance against the EAST criteria was average. This corridor has a good fit with the CSR for Cultural Heritage and offers reduced severance and potential enhancement within the WHS by avoiding direct impact upon it. It was recommended that Corridor F (north) was taken forward for further consideration.

**Corridor F (south)**

Corridor F (south) would provide a surface option that would completely avoid the WHS to the south and it would reduce severance and benefit the character of the WHS and the setting of key assets bringing substantial benefits. The corridor has the potential to contribute to the enhancement of the historic landscape within the WHS although it may adversely affect some nationally and internationally (European) designated nature conservation sites. The length of the corridor would lead to increased habitat loss compared to other corridor options, thus offering limited opportunity to increase biodiversity. The corridor would also result in adverse landscape impacts where it passes through the Cranbourne Chase AONB, and would likely affect a high number of sensitive visual receptors. The majority of the corridor is located within the inner part (Zone 1) of a source protection zone for groundwater. It would reduce road traffic noise and severance in Winterbourne Stoke although this should be weighed against the potential adverse noise, severance and visual effects in other settlements within the corridor.

The corridor would marginally reduce transport costs, improve regional connectivity and support the visitor economy. Hence, economic benefits are likely to be relatively slight. Corridor F (south) performed relatively well against the CSRs, specifically in relation to Cultural

Heritage, but the additional length of the route impacted upon the Transport and Economic criteria. The overall performance against the environmental criteria was poor, with detrimental impacts to Biodiversity, Landscape and Water. The performance against the EAST criteria was average.

This option has a good fit with the CSR for Cultural Heritage, and would offer reduced severance within the WHS by avoiding direct impact upon it. It has the potential to enhance the WHS but it performs less well in a number of environmental areas most noticeably landscape and provides reduced economic and transport benefits compared to Corridor F (north). On this basis it was recommended that Corridor F (south) was not taken forward for further consideration.

**Corridor G**

Corridor G would provide a surface option that would effectively provide a Salisbury southern bypass. This corridor would reduce severance and benefit the character of the WHS and the setting of key assets such as Stonehenge bringing substantial benefits to the WHS. The corridor would contribute to the enhancement of the historic landscape within the WHS. However, it would adversely affect numerous nationally and internationally (European) designated nature conservation sites and areas of ancient woodland. The length of the corridor would lead to substantially increased habitat loss and severance, thus offering limited opportunity to increase biodiversity. The corridor passes to the south of Salisbury and a significant section of the

corridor is located within the Cranbourne Chase and West Wiltshire Downs AONB. It would reduce road traffic noise and severance in Winterbourne Stoke although this should be weighed against the potential adverse noise, severance and visual effects in other settlements within the corridor.

The corridor would not reduce transport costs as the benefits from the increase in traffic speed and creation of grade-separated junction are outweighed by the longer route. Hence there would be no improvements in regional connectivity and support for the visitor economy. Hence, there would be no associated economic benefits.

Whilst this option would offer reduced severance and potential to enhance the WHS it is likely to lead to substantial habitat loss. Journey times would increase giving lower economic benefits compared with the more direct routes.

Corridor G performed poorly against the CSRs, specifically in relation to Cultural Heritage and Environment and Community. The overall performance against the environmental criteria was very poor. The performance against the EAST criteria was also the worst performing corridor.

Given the significant increase in journey length for through traffic and the associated disbenefits associated with the longer route, and the consequential poor fit against the CSRs, it was recommended that this corridor was not taken forward for further consideration.

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### Assessment scoring

9.2.8 Route options were scored against each CSR and policy objective using the following three point Red-Amber-Green (RAG) scale:

3	Strong alignment. Route option makes a substantial positive contribution towards meeting relevant objectives.
2	Moderate alignment. Route option makes some contribution towards meeting relevant objectives.
1	Weak alignment. Route option makes little or no contribution towards meeting relevant objectives.

9.2.9 The CSR assessment undertaken at Design Fix A used a five point scoring scale, as required by Early Assessment and Sifting Tool (EAST). A three point scale was considered appropriate for the strategic fit assessments conducted at Design Fix C, and for this assessment of the three route options against CSRs and local and national policies, drawing on the WebTAG findings.

### 9.3 Assessment

#### Client Scheme Requirements assessment

9.3.1 Table 9-1 provides a summary of this assessment for each of the route options. Table 9-1 Client Scheme Requirements summary table

Document	Client Scheme Requirements	D061	D062	F010
Client Scheme Requirements	Transport: to create a high quality route that resolves current and predicted traffic problems and contributes towards the creation of an Expressway between London and the South West	3	3	2
	Economic growth: in combination with other schemes on the route, to enable growth in jobs and housing by providing a free flowing and reliable connection between the East and the South West peninsula	3	3	2
	Cultural heritage: to contribute to the conservation and enhancement of the WHS by improving access both within and to the site	2	2	3
	Environment and community: to contribute to the enhancement of the historic landscape within the WHS, to improve biodiversity along the route, and to provide a positive legacy to communities adjoining the road	3	3	2

9.3.2 In general, Route Options D061 and D062 align more closely with the CSRs than Route Option F010. However, Route Option F010 aligns most strongly with the cultural heritage CSR as it would remove the road from the WHS in its entirety. This would be a substantial benefit for the WHS and the setting of Stonehenge and other Scheduled Monuments. Route Options D061 and D062 would also remove the road from a key part of the WHS, and all three route options would allow the reconnection of the Avenue, a scheduled monument of high importance that is currently severed by the existing road. All three options would also improve access to the site by improving local traffic conditions. These are very notable benefits.

9.3.3 However, route Options D061 and D062 would introduce major new infrastructure into the WHS, adversely affecting important assets and key attributes of the site's OUV. On balance, D061 would result in a Slight/Moderate beneficial effect for the WHS, and D062 in a Moderate beneficial effect. Strategic fit with the cultural heritage CSR is therefore considered moderate for both route options.

9.3.4 In other respects, Route Option F010 performs less strongly than Route Options D061 and D062. While Route Option F010 would provide benefits in terms of increased capacity and improved reliability, the longer length of the route restricts potential journey time savings in comparison to Route Options D061 and D062, thereby limiting potential benefits and strategic alignment in terms of improved connectivity and economic growth.

9.3.5 Route Option F010 also has the potential for larger adverse impacts on the environment and community than Route Options D061 and D062. For example, the length and alignment of Route Option F010 could encourage traffic on to local roads to the north of the existing A303, resulting in further adverse severance effects. The route option could also introduce adverse severance effects to communities along the proposed route to the south of the existing A303, such as Berwick St James and Upper Woodford. The length of the route has the potential to result in significant loss of priority habitats and associated biodiversity.

9.3.6 All options would reduce the impact of traffic on Winterbourne Stoke, and have the potential for other beneficial environment and community effects such as a net benefit in terms of reducing noise and a net improvement in local air quality, although there is an increase in NOx emissions across the scheme area. However, route option F010 performs considerably less well in terms of impacts on local communities than route options D061 and D062, and also has

the potential for a larger adverse effect on biodiversity. This reduces its strategic fit with the environment and community CSR, relative to route options D061 and D062.

### National policy assessment

9.3.7 Table 9-2 provides a summary of national policy alignment for each of the three route options. Route Options D061 and D062 generally align more closely with national policy objectives than F010. Route Option F010, which involves the construction of a longer surface route, offers smaller journey time savings than for D061 and D062 and, as such, contributes less directly to policy objectives relating to connectivity and economic growth.

Table 9-2 National policy summary table

Document	Relevant objectives	D061	D062 F010
National Policy Statement for National Networks (NPSNN)	Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs	3	32
	Networks which support and improve journey quality, reliability and safety	3	32
	Networks which support the delivery of environmental goals and the move to a low carbon economy	1	11
	Networks which join up our communities and link effectively to each other	3	31
Road Investment Strategy for the 2015/16 – 2019/2020 Road Period (RIS1)	Making the network safer	3	32
	Improving user satisfaction	3	32
	Supporting the smooth flow of traffic	3	32
	Encouraging economic growth by working to minimise delay	3	32
	Delivering better environmental outcomes	2	22
	Helping cyclists, pedestrians and other vulnerable users	3	32

9.3.8 All route options would improve journey quality, reliability and safety for through traffic. However, F010 is expected to encourage more traffic to use local roads adjacent to communities to the north of the existing A303, resulting in adverse severance effects. This route option also has the potential to introduce new adverse severance effects for communities to the south of the existing A303, and therefore performs less well against objectives relating to local traffic issues and communities.

9.3.9 In terms of environmental objectives, all three route options are expected to result in a net overall increase in greenhouse gas water environment. However, F010, due to its greater length, has the potential to result in significant loss of priority habitats and associated biodiversity. Benefits of route options D061 and D062 would include a shorter scheme in terms of its length, landscape reconnection and habitat restoration, leading to a reduction in road fatalities and increase in wildlife movement relative to route option F010.

9.3.10 All three options would result in a net beneficial effect on noise. However F010 has the potential for a larger beneficial noise effect than D061 or D062 due to the reduced noise impact

of the existing A303 on Amesbury. All three options have the potential to result in a net improvement in local air quality due to a reduction to exposure of concentrations of particulate matter, although there is an increase in NOx emissions across the scheme area.

Network (ARN) were reviewed; due to the limitations of the regional changes in the current local model, the local ARN was used. It is recognised that not all changes in carbon emissions are captured with this approach; this may skew the results of the emissions comparison, particularly during the early years of operation of the Scheme. This limitation will be appropriately addressed once the new regional model becomes available.

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### **Cultural Heritage Impacts – The Value of Removing the Road from the World Heritage Site**

11.4.26 Current appraisal guidance (WebTAG) does not monetise or seek to quantitatively value impacts on historic environment. It instead relies on qualitative scores. In some respects, the value of cultural heritage assets is intangible and will remain unquantifiable. However, techniques exist which seek to monetise the value that people place on cultural heritage assets.

#### *Willingness to Pay Research*

11.4.27 As noted, a Contingent Valuation study has been undertaken to provide a more balanced quantitative assessment of value for money. The aim of this study is to understand the value that visitors to the World Heritage Site, A303 users, and UK residents put on the removal of the A303 from its current location within the Stonehenge World Heritage Site (WHS), in relation to noise reduction, increased tranquillity, visual amenity and reduced landscape severance in the Stonehenge WHS.

11.4.28 The research elicits a value for the benefits of the scheme as perceived by visitors to the World Heritage Site and UK residents. Respondents to the survey were provided with information on the current route and a description of the impact of the existing A303 on the World Heritage Site. They were also been provided with information on the expected impacts of the scheme. On the basis of this information, respondents were asked to consider what (hypothetically) they would be willing to pay in an increase in annual taxation to realise the benefits of the scheme.

11.4.29 Care has been taken to ensure that responses are focussed on the impact of removing the road from the landscape, rather than factors such as transport benefits and considerations of affordability.

11.4.30 The survey responses have been used to generate estimates of the aggregate willingness to pay of the UK population as a whole or, put another way, the overall value that society attributes to these benefits.

#### *Quantitative versus Qualitative Analysis*

11.4.31 The quantitative research is intended to complement but not replace the qualitative appraisal of environmental impacts (including the historic environment assessment) undertaken

in accordance with WebTAG guidance. There are a number of important differences between the willingness to pay research and the WebTAG historic environment.

11.4.32 The quantitative assessment places a value on the impact of the scheme as perceived by visitors to the World Heritage Site, users of the A303 and the UK population. Although respondents are provided with high level information about the World Heritage Site and its features, in the vast majority of cases, their valuation will not be based on expert opinion as is the case with the qualitative assessment.

11.4.33 Linked to this, it is likely that responses to the survey will be highly influenced by impacts on Stonehenge itself as the most recognisable monument in the World Heritage Site. In contrast, the historic environment assessment takes a broader approach, recognising the uniqueness of Stonehenge and its international importance, but also weighing up impacts on the many different monuments affected, either positively or negatively, by the scheme. The historic environment assessment has to consider all aspects of the World Heritage Site landscape and the relationships between the monuments within it, not just the changes to the landscape around Stonehenge itself.

11.4.34 It should also be noted that the willingness to pay survey is focussed primarily on impacts on Stonehenge within the World Heritage Site, whilst the WebTAG qualitative assessment takes into account any impacts on the historic environment outside the World Heritage Site. There are a substantial number of important monuments, listed buildings and other assets around the WHS that may be adversely or beneficially affected by the scheme and these need to be taken into account when weighing the overall level of benefit and harm to the historic environment. The historic environment WebTAG assessment also addresses assets within the boundary of the World Heritage Site which are not directly connected with the Outstanding Universal Value of the World Heritage Site and, importantly, it has to assess impacts on individual monuments in their own right regardless of the World Heritage Site designation.

11.4.35 Finally, it should also be recognised that, in practice, the willingness to pay values cover a range of impacts not necessarily limited to historic environment. The values generated by the surveys are likely to capture impacts on noise, air quality landscape and amenity, as well as impacts on historic monuments. In this regard, the willingness to pay research is closely related to a number of environmental topics covered in the qualitative WebTAG assessment.

11.4.36 In overview, the willingness to pay research provides an assessment of the public value attributed to removing the road from the World Heritage Site. It provides a partial assessment of the benefits of the scheme which complements qualitative assessment based on expert opinion. Nonetheless, understanding the value that people place on the benefits of the scheme, the research helps us to better understand the trade-offs between cost and impact.

#### *Applying the Results of the Assessment*

11.4.37 At this stage, the research has been undertaken only on the basis of the tunnelled option (nominally, Route Option D061). However, the research is primarily concerned with the impact of removing the road from part or all of the World Heritage Site. Therefore, the research can also be used to infer the likely benefits of the surface route in this respect.

11.4.38 In respect of cultural heritage impacts, all options would deliver transformative benefits for parts of the World Heritage Site by improving the setting of scheduled monuments,

including Stonehenge itself, and by removing the physical barrier that currently divides the Site into two parts. Therefore, the results of the assessment may underestimate the benefits of Route Option F010. However, it is likely that the value attributed to the scheme respondents is focussed on the impact of the scheme on Stonehenge (the most recognisable feature of the World Heritage Site), rather than impacts on monuments located to the east or west of Stonehenge that would be affected by the construction of tunnel portals or new sections of highway.

11.4.39 Whilst these differences are highly material to the qualitative assessment of heritage impacts, in respect of the quantifiable impacts of the benefits of removing the road from the World Heritage Site, the tunnelled and surface options are similar.

### *Results*

11.4.40 As noted, the Contingent Valuation study involved undertaking face to face surveys at the Visitor Centre as well as on-line surveys with a stratified sample of UK residents. The research considered three separate populations:

- Stonehenge Visitors.
- A303 Road Users.
- General population.

11.4.41 Each survey was tested through survey pilots and appropriate refinements were made. In general the pilots demonstrated that the surveys were appropriate and clearly understood by respondents.

11.4.42 Respondents were asked whether they would be willing to pay to remove the road from the World Heritage Site. The majority of respondents reported that they would be willing to pay some amount to remove the road. The proportion of people willing to pay was highest for visitors and road users (both 67.4%). It was 59.2% for the general population.

11.4.43 Respondents who were not willing to pay to remove the road were further asked if they would require compensation in the event that the scheme went ahead. This was an important part of the research given that it ensured that those who perceived the scheme has having negative impacts (for example, because it would result in Stonehenge no longer being visible to road users when travelling on the A303) were also able to place a value on these impacts.

11.4.44 The percentage shares of people requiring compensation were very low for all populations, and was lowest for Stonehenge visitors (0.5%). Across the three groups between 30% and 38% of people neither required any compensation, nor were not willing to pay.

Table 11-1 Respondents ‘Willing to Pay’ for the Proposed Scheme

	Visitors	Road users	General population
Willing to pay to move the road	67.4%	67.4%	59.2%
Requiring compensation for the removal of the road	0.5%	2.1%	2.3%
Neither willing to pay nor requiring compensation	32.2%	30.5%	38.4%
Total	100%	100%	100%

11.4.45 Those willing to pay something for the proposed improvement were asked how much willing to pay an increase in annual taxes over a three-year period to support the scheme, whilst those requiring compensation were asked what they would be willing to accept in compensation should the scheme go ahead.

11.4.46 The average willingness to pay/accept values derived from the survey were then aggregated to the relevant population levels within each of the three groups. Willingness to accept is subtracted from willingness to pay in order to provide a net overall benefit. In accordance with good practice, a range of validity tests have been undertaken which demonstrate that the variation in values across different sub- groups of respondents are logical and internally consistent.

11.4.47 In summary, the aggregate net benefit for visitors to Stonehenge is £24m, for road users it is £51m, and for the general population it is £1.1 billion. Combining these together results in an estimated aggregate net present value of £1.3 billion (2016 prices and values) for the removal of the section of the A303 for a tunnel. For comparability with the overall cost benefit analysis this result has been converted to 2010 prices and values to give a value of £1.0bn.

Table 11-2 Aggregate Willingness to Pay/Accept

Group	WTP/WTA variable	%	Relevant Population	Mean (£ Net Present Value)	Aggregation to national level
Visitors	Annual tax	67%	363,776	£68	£24m
	Compensation (one off)	0.5%	2,517	£188	
Road Users	Annual tax	67%	854,212	£22	£51m
	Compensation (one off)	2%	27,204	£81	
General Population	Annual tax	59%	31,653,894	£14	£1,251m
	Compensation (one off)	2%	1,229,012	£58	
Total net present value (2016 prices and values)					£1,326m
Total net present value (2010 prices and values)					£992m

11.4.48 Upper and lower bound results have also been derived based on a 95% confidence interval for the Willingness to Pay / Accept values based on the respective sample sizes. The results show a range of £1.2bn to £1.5bn. The interpretation of this analysis is that we are 95% confident that the willingness to pay (net of willingness to accept) is between £1.2bn and £1.5bn.

Table 11-3 Upper and Lower Bound Estimates

11.4.49 It is acknowledged, however, that given the nature of this research there are uncertainties beyond those relating to confidence intervals. Notwithstanding that any assessment of this nature is subject to a significant margin for error, the assessment demonstrates that the

benefits of removing the road from the World Heritage Site – as perceived by Stonehenge visitors and the general public – are substantial.

### Valuing Impacts on the Landscape beyond Stonehenge

#### Approach

11.4.50 As noted, for all options, the benefits of removing the road from the World Heritage Site need to be balanced against the negative impacts of the construction of a new or widened surface highway in an otherwise rural environment. As for heritage impacts, quantifying such effects is highly challenging. Where landscape impacts are highly material (i.e. scored as moderate or large), DfT has identified that an illustrative monetisation of landscape impacts can help inform the overall value for money assessment of a scheme.

	Lower Bound (of 95% Confidence Interval)	Central Estimate (Mean)	Upper Bound (of 95% Confidence Interval)
Total net present value (2016 prices and values) (£)	1,190	1,326	1,463
Total net present value (2010 prices and values) (£)	889	992	1,093

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Table 11-15 Programmatic Appraisal

£M 2010 Prices and Values	Option D061	Option D062	Option F010
Initial BCR	0.7	0.7	0.4
Adjusted BCR	0.9	0.9	0.7
BCR Including Monetised Heritage and Landscape Impacts	1.5 – 1.7	1.6 – 1.8	1.5 – 1.8
Complementary Approach to Wider Economic Benefits	1.9 – 2.1	2.0 – 2.2	

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Table 18-6 Summary of environmental assessment outcomes

Parameter	Option D061	Option D062	Option F010
Noise (NPV of change in Noise)*	£180,000	£225,000	£3,660,000
Air quality: Total value of change in	-£310,000	-£320,000	-£490,000

air quality*			
Greenhouse Gases (NPV of change in Greenhouse gases)*	-£50,106,484	-£50,615,971	-£53,875,360
Landscape	Moderate Adverse	Moderate Adverse	Very Large Adverse
Townscape	Neutral	Neutral	Neutral
Historic Environment (overall)	Neutral	Neutral	Large Beneficial
Historic Environment (WHS)**	Slight / Moderate Beneficial	Moderate Beneficial	Large Beneficial
Biodiversity	Large Adverse	Large Adverse	Very Large Adverse
Water environment	Large Adverse	Large Adverse	Moderate Adverse

\* a positive value represents a benefit whilst a negative value a disbenefit

\*\* Scores are as per WebTAG guidance (TAG Unit A3), these differ from DMRB derived impact and effect scores.

## Overall Summary

22.1.1 The identification of the existing problems and constraints for the scheme and the options development, sifting and appraisal process, to ultimately determine the route options to be taken forward for public consultation, was split into three stages: Design Fix A; Design Fix B; and Design Fix C.

22.1.2 In Design Fix A, some 60 historical routes that have been proposed by Government, stakeholders and the public in the past, were reviewed and grouped into eight corridors which contained routes with similar characteristics. The corridors were assessed against the Client Scheme Requirements (CSRs), WebTAG and EAST criteria, and the National Policy Statement for National Networks (NPSNN) environmental aspects. The outcome of this initial corridor appraisal was that Corridor D (part tunnel part surface route options within the WHS to the south of the existing A303) and Corridor F (wholly surface route options to the south of the WHS) were the best performing corridors and should be taken forward for further consideration and development of route options.

22.1.3 A number of route options were then developed in Design Fix B, within the two best performing corridors, and sifted against the key engineering and environmental constraints to confirm 7 route options in Corridor D and 3 route options in Corridor F to be taken through initial route options appraisal. The methodology used to appraise the options (Design Fix C) followed that used for the Initial corridors appraisal, and was based on the guidance in the WebTAG Option Assessment Framework. The outcome of this initial options appraisal was that three of the best performing Corridor D and F route options were taken forward for further more detailed WebTAG appraisal to determine the route options for consultation.

22.1.4 The three better performing route options D061, D062 and F010, were taken through a WebTAG appraisal with the outcomes of the assessments reported in Appraisal Summary Tables (refer to Appendix H).

22.1.5 The further appraisal confirmed that Route Options D061 and D062 would deliver a better fit against the Client Scheme Requirements (CSRs) and the relevant local and national planning, transport and economic policy objectives, than Route Option F010, thus providing better alignment with the scheme objectives.

22.1.6 Route Options D061 and D062 would provide a shorter, more direct route for through traffic along the A303 relative to Route Option F010, reducing the extent of rat-running through local villages and delivering a journey time saving of approximately 4 minutes compared to the existing case. A journey along Route Option F010 would involve travelling an additional 3.7km relative to Route Options D061 and D062 and consequently, the journey time saving (in relation to the existing situation) is reduced and is less at approximately 2.75 minutes. A consequence of the longer Route Option F010 alignment and the proposed junction locations is an increase in rat-running through local villages.

22.1.7 The economic appraisal undertaken provided an assessment of the overall value for money of the investment on the basis of costs and benefits that can be monetised. If assessed on the basis of traditional metrics of transport user benefits, Route Options D061 and D062 performed better than Route Option F010, although costs outweigh benefits for all options. However, if the value of removing the A303 from the vicinity of Stonehenge is included in the assessment, a positive economic case can be made for each of the options. In overall terms, when viewed from this broader perspective, the options performed similarly. At this stage in the assessment, the scheme was assessed as offering 'medium' value for money.

22.1.8 Route Options D061 and D062 performed marginally better than Route Option F010 in terms of limiting the separation of residents from services and facilities within their community. This is due to reduced severance at a number of locations along the route and on the affected road network. In particular, Route Options D061 and D062 remove traffic from Winterbourne Stoke, reduce traffic for other nearby settlements such as Shrewton, Durrington and Larkhill, and also include new pedestrian facilities at Countess Roundabout. With the criteria of physical activity, Route Options D061 and D062 also performed better due to a lower degree of Public Rights of Way (PRoW) severance relative to Route Option F010. All options were comparable in terms of journey quality due to reductions in traveller stress.

22.1.9 The distributional impacts assessment identified no significant differentiators between the impact of Route Options D061 and D062, with these outperforming Route Option F010 overall due to fewer adverse impacts.

22.1.10 WebTAG environmental appraisals were undertaken on each of the three route options. For all options it is predicted that properties affected in the study area would experience low levels of change in noise, with a small number of properties assessed as experiencing noise nuisance. All options would provide noise benefits, with the level of noise reduction around Winterbourne Stoke better for Route Option D062 and Route Option F010 having further noise benefits for properties in Amesbury.

22.1.11 In terms of greenhouse gases all options would result in an increase in user carbon, with F010 resulting in the greatest increase due to vehicle flows and the much longer distance travelled. For air quality, the increase in vehicle flows and the much longer distance travelled for F010 would also result in the highest NOx emissions. For all options air quality receptors within 200m would experience a reduction in exposure to PM10 emissions, leading to improved local air quality. This improvement is offset for all options by the overall increase in exposure to NOx leading to an overall reduction in air quality.

22.1.12 In terms of landscape both D061 and D062 would have a Moderate Adverse effect with scope for further mitigation during design development. For F010 the magnitude of change and the sensitivity of the high quality rural landscape along the approximate 21.5 km length and the visual impacts of the highly intrusive crossing of the Upper Avon Valley would result in a Very Large Adverse effect on the landscape with limited scope for mitigation.

22.1.13 For the historic environment, both Route Options D061 and D062 would result in an overall Neutral score compared with a Large Beneficial effect for F010. In terms of the WHS, F010 would also result in a Large Beneficial effect, whilst D061 would result in a Slight/Moderate Beneficial effect and D062 a slightly greater Moderate Beneficial effect. These differences are due to the routing of D062 west of the western portal where it avoids important archaeological remains and uses local topography to better fit into the landscape of the WHS.

22.1.14 For Route Options D061 and D062 biodiversity and the water environment have both been assigned the same level of Large Adverse effect, with potential effects on water environment predicted to substantially reduce post construction. For biodiversity, mitigation through design development is predicted to result in a reduction in the scale of impact. Route Option F010 crosses 2.4km a Special Protection Zone 2 (SPZ) which is reflected in the Moderate Adverse assessment for water environment. For biodiversity F010 is nearly twice the length of D061 and D062 and at surface level would result in a Very Large Adverse effect. This is due to the direct adverse impacts to internationally (European) and nationally designated ecological sites.

22.1.15 All options were assessed to have a positive impact upon on road safety as the existing A303 is an accident blackspot, and all new route options will increase capacity and be designed

to high safety standards. All proposed route options would significantly reduce the risk of hazards to road users. Additionally, the horizontal and vertical alignments and associated forward visibility would improve significantly relative the existing conditions.

22.1.16 As a result of having shorter travel distances, Route Options D061 and D062 were assessed to have the potential to deliver greater in-service accident benefits over Route Option F010. In relation to Construction, Design and Management (CDM) safety assessment, Route Options D061 and D062 would involve significant tunnel construction, a highly specialised and technically complex activity. This would be considered a significant construction risk activity, but was assessed as manageable by a competent contractor. Route Option F010 would involve the construction of an additional significant viaduct over the River Avon, which would require significant amount of working at height, another significant but manageable construction risk.

22.1.17 In terms of performance against the assessment criteria of operation, technology and maintenance, all options performed to a similar level with Route Options D061 and D062 requiring enhanced operation and maintenance features specific to the tunnel.

22.1.18 In regards to the scheme programme, Route Options D061 and D062 could be delivered to meet the Road Investment Strategy (RIS) programme dates and achieve a start on site by March 2020. Route Option F010 would require additional survey information leading to a 12 month delay relative to Route Options D061 and D062, and thus would achieve a later start on site date of approximately March 2021.

22.1.19 In conclusion, based on the more detailed WebTAG assessment and appraisal of the sifted best performing route options for Corridors D and F, and the fit with the scheme objectives, the following route options are proposed to be taken forward to Stage 2 for public consultation and further appraisal, with no significant characteristics differentiating the two options:

- Route Option D061: Approximately 2.9km length tunnel with route running north of Winterbourne Stoke, eastern tunnel portal located east of The Avenue and the western tunnel portal located west of Normanton Gorse to minimise visual impact to and from Stonehenge.
- Route Option D062: Approximately 2.9km length tunnel with route running south of Winterbourne Stoke, eastern tunnel portal located east of The Avenue and the western tunnel portal located west of Normanton Gorse to minimise visual impact to and from Stonehenge.