



Department for Digital, Culture Media & Sport

Heritage Team
4th Floor
100 Parliament Street
London SW1A 2BQ
T: 020 7211 6000
enquiries@culture.gsi.gov.uk
www.gov.uk/dcms

Dear Dr. Mechtild Rössler,

Stonehenge, Avebury and Associated Sites, United Kingdom of Great Britain and Northern Ireland

In accordance with Decision 42 COM 7B.32, I submit a State of Conservation Report for the Stonehenge, Avebury and Associated Sites World Heritage Site. We have used the format stipulated as far as possible.

I can confirm that we are content for the report to be posted on the UNESCO World Heritage Centre website.

Kind regards,

Enid Williams

Senior Heritage Policy Advisor

STONEHENGE, AVEBURY AND ASSOCIATED SITES (UNITED KINGDOM) C373bis

1. Executive Summary of the report

In accordance with Decision 42 COM 7B.32, the United Kingdom State Party has produced a State of Conservation Report (SOCR) for the Stonehenge, Avebury and Associated Sites World Heritage Site.

This SOCR updates the Committee on changes made to the evolving A303 trunk road proposals in response to the 2018 WH Committee decision, the technical advice of the March 2018 Advisory Mission report and the previous Committee decisions and advisory mission reports.

Specifically, in response to the Committee's decision, this report provides updated information on the proposed A303 improvement within the WH property, including changes made to protect and transmit the OUV of the property through the scheme design and associated mechanisms. It provides information on road scheme options to which the Committee recommended further consideration should be given and reports on progress made in implementing the recommendations of the advisory missions.

The report is structured according to the format set out in the *Operational Guidelines*. The clauses of the World Heritage Committee decisions are given in italics and indented. The response of the State Party is not indented and does not use italics.

2. Response from the State Party to the World Heritage Committee's Decision, paragraph by paragraph.

The World Heritage Committee,

1. *Having examined Document WHC/18/42.COM/7B.Add,*
2. *Recalling Decision 41 COM.7B.56, adopted at its 41st session (Krakow, 2017),*
3. *Commends the State Party for inviting three Advisory missions to advise on the proposed upgrading of the main A303 road, (which currently bisects the property), as part of a major infrastructure project;*
4. *Notes the additional investigations undertaken by the State Party to consider the southern surface (F10) by-pass route and alternative alignment and longer tunnel options to remove dual carriageway cuttings from the property, and further detailed investigations regarding tunnel alignment and both east and west portal locations;*
5. *Also notes the findings and recommendations of the 2018 Advisory mission, particularly that, although the current 'Proposed Scheme' shows improvement compared with previous plans and would also improve the situation in the centre of the property, the rigorous investigation, evaluation, iterative design and assessment process has revealed that, if the current length of tunnel solution is pursued, the damage inflicted by the dual carriageway cuttings would impact adversely on integrity and the Outstanding Universal Value (OUV) of the property, and therefore the proposed A303 upgrade project should not proceed with the current length of the tunnel;*
6. *Notes with concern the impacts of the current design of the dual carriageway on the property, especially at the western end;*

7. *Urges the State Party to continue to explore further design refinement, with a view to avoiding impact on the OUV of the property, including longer tunnel options that do not require an open dual carriageway cutting within the property and to avoid impact due to noise, lighting and visibility; and urges furthermore, the State Party to minimize the length of the culvert part of the tunnel in order to reduce the impact on the cultural landscape and the archaeology;*

This part of the Committee's decision was instrumental in ensuring that the Department for Transport agreed, in July 2018, to additional mitigation measures that were the subject of supplementary public consultation following receipt of the 2018 mission report.

These measures relate specifically to the 'green' land bridge at the western end of the World Heritage property which has been extended from 50m to 150m in length to enhance the physical and visual connectivity between the Winterbourne Stoke barrow group to the north of the existing A303 and the Diamond barrow group to its south. The extension of the land bridge, together with extensions to the overall tunnel length to almost 3.3km, reduces the total length of road in open cutting to 800m.

In addition, The State Party has followed the Committee's recommendation to continue to explore the potential for additional design refinements with a view to avoiding impact on the OUV of the WHS. This work has involved consideration by Highways England of the extent to which extension of the tunnel to the west with the portal outside the WHS boundary, or the covering the open cutting, would avoid adverse impact on OUV. Technical feasibility, public value and cost were also considered. This work is summarised in the attached Annex B.

The annex sets out the consideration that has been given to extending the bored tunnel so that the western portal lies outside the western boundary of the World Heritage Site. This option would require the existing A360 and Longbarrow roundabout to be retained at their existing undesirable locations adjacent to the WHS boundary. This would partly offset the benefit of extending the tunnel and moving traffic away from the WHS as it would also result in the loss of a significant heritage benefit delivered by the currently proposed scheme, which moves Longbarrow Roundabout some 600m further away from the western boundary of the WHS and re-routes the A360. This realignment would have a beneficial impact on the Winterbourne Stoke and Diamond barrow groups, the setting of which is currently significantly compromised. The additional construction cost is estimated at £540million and the longer tunnel would also require considerable additional annual maintenance expenditure. While understanding fully our responsibilities to the Convention, the State Party does not believe that an increase in the estimated cost of the scheme from £1.7billion to £2.24billion for the tunnel extension, together with the additional on-going annual expenditure, can be justified given that it is still likely to result in an adverse impact on some attributes of OUV, given the retention of the current location of Longbarrow roundabout and the A360.

In relation to the possibility of covering more of the open cutting, the additional exploratory work considered the potential impacts upon known buried archaeological remains, including those identified through archaeological field evaluation, which convey the OUV of the World Heritage Site. In addition, consideration was given to the potential impacts on the ability to appreciate the OUV of the World Heritage Site, especially those attributes concerned with the siting of ceremonial sites and monuments in relation to the landscape and each other.

From the indicative design parameters of the proposed open cutting (the *culvert*) the cut and cover tunnel could result in a marginally wider land-take. Considering this wider land-take against the potential archaeological remains identified by the scheme's extensive programme of archaeological assessment and evaluation, it appears that little additional archaeology relevant to the OUV of the WHS would be impacted. This covering of the cutting is likely to result in a neutral overall impact on archaeological remains that contribute to OUV, compared to the proposed scheme. Any marginal additional land-take would therefore be unlikely to make any material difference to the impact of the scheme on archaeological remains considered by the Committee in July 2018.

The potential effect of minimizing the extent of dual carriageway in open cutting on the ability to appreciate the attributes of OUV concerning the siting of ceremonial sites and monuments in relation to the landscape and each other has been explored further. The currently proposed length of open cutting is 650m between the canopy of the proposed western tunnel portal with a 150m long land bridge extending to 150m from the western edge of the WHS, for a total of 800m of open cutting within the site boundaries. The heritage impact assessments commissioned by Highways England and by Historic England/National Trust, which was commended by the 2018 UNESCO/ICOMOS Advisory Mission, both assess the impacts of the proposed scheme in this area as minor adverse.

This limited impact of the open cutting is due to its position in relation to the topography of the landscape, which has been carefully chosen to minimise the visual impact of the scheme when viewed from and between sites and monuments that convey OUV. At the only point where the open cutting alignment runs relatively close to two monument groups (the Winterbourne Stoke and Diamond groups), the proposed 150m land-bridge will provide effective mitigation of landscape and visual impacts, and the scheme overall will enhance this part of the WHS compared to the major adverse impact of the current A303 and A360 surface roads and the hugely intrusive Longbarrow Roundabout.

Therefore, while additional cut and cover within the western part of the WHS would have some beneficial effect, the additional cost of reducing what is currently a minor adverse impact has to be considered very carefully.

At present the estimated cost of the scheme is £1.7bn. Of this £1.2bn is directly attributable to the measures necessary to protect and enhance the historic environment of the WHS. This benefits to cost ratio is already pushing at the limits of what can be regarded as overall public value for money and the additional estimated construction cost of £126m to cover the cutting, plus the additional recurring annual maintenance costs of an extended tunnel, cannot in the view of the State Party, be regarded as reasonable in order to reduce further an impact which had already been reduced to minor adverse.

In addition, this minor adverse impact needs to be seen in the light of the overall benefit delivered by the scheme in reuniting the landscape by the removal of almost all of the existing surface A303 trunk road within the WHS, the removal of the intrusive Longbarrow roundabout and the re-routing of the A360 to the west of the WHS boundary.

The State Party has also considered the “noise, lighting and visibility” issues raised by the Committee. The proposed scheme, including the 200m long western portal canopy, the 150m

land-bridge, the 800m of full-depth open cutting and the relocation of the current A303/A360 junction to 600m west of the WHS boundary, are all designed with the intention of minimising noise, lighting and visibility impacts upon the WHS.

In terms of road noise, the removal of much of the surface A303 and its redirection into a tunnel will substantially improve the tranquillity of the WHS compared to the present situation, where heavy traffic moves through the WHS entirely on the surface.

The proposed scheme will have no lighting within the WHS beyond that necessary within the tunnel and beneath the 150m land-bridge. There will be no lighting within the open cutting, and tunnel lighting will be designed to minimise light spill outside of the tunnel portals'. Lighting under the land-bridge will only operate during daylight hours between dawn and dusk. There will be no lighting at the new Longbarrow Junction, and the improved Countess junction will utilise new directional lighting to minimise light spill. These are significant improvements over the current situation, where both Countess and Longbarrow junctions are brightly lit.

In terms of infrastructure visibility, the scheme has committed to no signage or other vertical installations (such as security cameras, aerials, etc) above the top of the cutting and no lighting of signs at the western end of the scheme in order to protect the WHS's OUV.

Highways England submitted a Development Consent Order (DCO) application to the English national Planning Inspectorate on 19th October 2018 after due consideration of the issues considered above. The Planning Inspectorate accepted the application for examination on 16th November. Registration of interested parties, including Historic England, closed on January 11th and the examination of the DCO is likely to run for 6 months from March to September 2019. The Planning Inspectorate has up to 3 months to submit its report and recommendations to the Secretary of State, who has a further 3 months in which to make a decision.

The State Party anticipates that sufficiently detailed evidence has/will be produced by Highways England in its application and during the examination of the DCO to provide assurance that the benefits of the scheme and the minimisation of adverse impacts will be delivered in the event of consent being granted. Historic England, as the State Party's statutory adviser, has asked Highways England to ensure that sufficiently detailed information is provided so that it can be taken into account by the Planning Inspectorate and Secretary of State in reaching a decision. The detailed heritage impact assessment submitted as part of Highways England's DCO application is part of their response to that request.

In summary the State Party has responded to paragraph 7 of 42 COM 7B.32 by reducing the length of the open cutting (*culvert*) through the lengthening of the land bridge and by extending the overall length of the tunnel to almost 3.3km, and has explored options to extend the length of the tunnel and to cover the remaining 800m of open cutting. The proposed scheme will reduce noise, lighting and visibility of traffic significantly in relation to the current arrangements. The conclusions drawn are that lengthening the tunnel would not achieve the aim of avoiding minor adverse impact on OUV and would substantially increase the cost of the scheme. While covering the open cut (*culvert*) would reduce the minor adverse impact on OUV, this modest level of benefit does not justify the significantly increased cost,

particularly in the light of the overall benefit to OUV delivered by the proposed scheme. The State Party anticipates that sufficiently detailed information will be provided in the application and during the examination of the DCO to ensure that, in the event of consent being granted, the benefits to the World Heritage Site will be delivered and adverse impacts appropriately mitigated.

8. *Requests the State Party to address the findings and implement the recommendations of the March 2018 Advisory mission and encourages the State Party to continue to facilitate progress towards an optimal solution for the widening of the A303 with a view to avoiding adverse impact on the OUV of the property;*

Further detail in response to the recommendations of the 2018 Advisory Mission can be found in Annex A.

9. *Further notes that the State Party has advised that it will manage the timing of the consent and other statutory processes for the A303 trunk road project to take into account Committee Decisions and to ensure that the World Heritage Centre, ICOMOS and the Committee can continue to contribute to the evaluation and decision-making processes at appropriate stages of the project;*

The pre-application phase of the Development Consent Order process has been managed to allow for consideration of the conclusions and recommendations of the advisory missions and the decisions of the World Heritage Committee to date. The Examination of the DCO is likely to run from March to September 2019, thus allowing consideration to be given to any decision on Stonehenge that may be taken by the World Heritage Committee during the 43rd session in July 2019, following the submission of this report. The State Party has submitted relevant representations to the Planning Inspectorate to register its interest in conveying the Committee decision and any relevant supporting documentation to the Planning Inspectorate during the course of the DCO application.

10. *Also requests the State Party to submit to the World Heritage Centre, by 1 February 2019, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 43rd session in 2019.*

The UK State party submits this report for examination by the World Heritage Committee at its 43rd session in 2019.

3. Other current conservation issues identified by the State(s) Party(ies) which may have an impact on the property's Outstanding Universal Value

Progress towards establishing an independent and sustainable Stonehenge and Avebury World Heritage Site Trust

The World Heritage Site Management Plan Policy 8b underlines the need to seek adequate funding for the coordination of the WHS and the implementation of the Management Plan. The World Heritage property partners have made significant advances towards establishing an independent trust. The trust is designed to ensure that the arrangements for the overall management of the World Heritage property and the delivery of the Management Plan are

both adequately resourced and sustainable. This is particularly important in a time of reduced public sector funding in the United Kingdom where diversifying income is a key to sustainability. The current World Heritage Site Coordination Unit relies solely on public funding from Wiltshire Council and Historic England.

World Heritage property partners, with assistance from a Heritage Lottery Fund Resilient Heritage grant, are supporting an evidence-based strategic development programme and exploring the transition of the planning, coordination, monitoring and advice function to an independent trust. Strengthened governance and revitalised relationships with partners and stakeholders will underpin a trajectory towards sustainable growth. The establishment of an independent trust will greatly enhance the potential to raise funds and thereby add substantial value to the World Heritage property, its partners and the wider community. The additional funding will enable the World Heritage Site Trust to progress significantly with the implementation of the Management Plan and deliver the ambitious landscape scale strategies envisaged in it. Related interpretation projects will encourage greater understanding of the significance of the whole World Heritage property and deeper engagement with its protection and management.

World Heritage Property Setting Study and Boundary Review

There is a specific and robust policy in the Local Development Framework to protect the Outstanding Universal Value of the property from inappropriate development, along with full references in relevant strategies and plans at all levels. The Wiltshire Core Strategy, formally adopted on 20th January 2015, includes a specific World Heritage Property policy. Policy 59 requires that precedence should be given to the protection of the WHS and its OUV. This policy also advises that additional planning guidance be produced to ensure its effective implementation. The brief for the Setting Study has now been finalised. This has been developed alongside heritage and landscape expert partners. The study is designed to provide guidance on the identification of the setting and the type of development that is likely to have an impact on it and the World Heritage and its OUV. It will also provide advice on the nature of evidence likely to be required from developers. Funding is currently being sought to commission this work.

The study will be informed by the Statement of OUV and identified attributes as well as Historic England's Guidance on the *Setting of Heritage Assets* Historic Environment Good Practice Advice in Planning Note 3 (Second edition) 2017. This sets out guidance against the background of the National Planning Policy Framework and related guidance in the Planning Practice Guide on managing change within the setting of heritage assets. The ICOMOS *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (2011) will also inform the study. These existing documents today form a robust basis for the assessment of impact on the World Heritage property through change in its setting and inform the approach to assessing impact in current development proposals. The boundary review at Stonehenge will be progressed following completion of the setting study.

Conservation: Cultivation, Brexit and Burrowing Animals

The first joint Stonehenge and Avebury WHS Condition Survey was produced in 2012. The summary of this joint Condition Survey noted a positive change to the overall condition of monuments. This analysis was confirmed by the broad stability of monuments in good and fair condition. These encouraging findings result from a great deal of positive management of

the attributes of OUV by the partners engaged in both parts of the World Heritage property including national organisations and local landowners and farmers.

The results of the Condition Survey show that the two most significant threats to the physical remains that contribute to the OUV continue to be cultivation and burrowing animals. There has been a significant increase in the presence of the latter over the decade since the preceding condition surveys. Work to protect vulnerable monuments from damage by cultivation and from badgers and other burrowing animals are therefore two of the key priorities of the World Heritage Management Plan (2015).

Agri-environment schemes remain the most effective response to protecting sensitive archaeology from damage through cultivation. These schemes are extremely important for protecting the physical remains and enhancing the setting of prehistoric monuments through measures such as grassland restoration and scrub control. At Stonehenge around 40% of the WHS landscape is in environmental stewardship helping to protect and/or enhance the setting of c. 500 historic features. At Avebury too around 40% of the WHS is in these schemes which benefit c. 300 historic features. Agri-environment schemes currently rely on European Union funding. The UK Government is putting in place arrangements for Environmental Land Management Schemes to succeed EU funded schemes as they expire and the Agriculture Bill which is currently going through Parliament makes provision for the Secretary of State to provide financial assistance for, amongst other things, *“managing land or water in a way that maintains, restores or enhances cultural heritage or natural heritage”*

The brief for the World Heritage Property Burrowing Animal Strategy remains to be finalised. Funding will be sought to undertake the necessary baseline studies and, following a review of existing research, the design of an innovative landscape scale strategy for managing this impact.

Roads and Traffic

Despite the very substantial progress delivered by the closure of the A344 the impact of roads and traffic remains a major challenge in both parts of the World Heritage property. The dominance of roads, traffic and related clutter continues to have a harmful impact 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. At Stonehenge the A303 remains a problem. The current Highways England scheme and its ability to address these issues is discussed above in relation to the WH Committee 2018 decision.

At Avebury, a strategy has been developed to identify a set of actions to address road and traffic related challenges, which include the impact of A4 on the setting of Silbury Hill and other attributes of OUV, and the erosion to some areas of the West Kennet Avenue where a minor road passes over and alongside the monument. This Avebury WHS Transport Strategy (2015) <http://www.stonehengeandaveburywhs.org/assets/Avebury-WHS-TransportStrategy-2015.pdf> takes a holistic approach to road and traffic issues within the WHS. It has established an approach and recommended schemes agreed by delivery partners, curators, managers and representatives of the local community to balance the concerns of all parties and safeguard the WHS while retaining a viable transport network. It includes a set of design principles and specific outline schemes. Such an agreed set of Design Principles would be helpful across the World Heritage property.

Work on developing more detailed plans for some of the schemes proposed in the Strategy is required. These schemes relate in part to the narrowing of the A4 to reduce its dominance in the landscape by calming traffic and encouraging exploration of the WHS. This will be even more important if visitor numbers see an increase during development of the A303 improvement scheme or in response to The Great West Way initiative to develop a tourist route along the A4 from London to Bristol. Wiltshire Council are willing to progress with work to further the introduction of a Traffic Regulation Order on the Ridgeway National Trail. At present, as a Byway Open to All Traffic (BOAT) in the Avebury half of the World Heritage property, motorised traffic is causing damage to archaeology and visual amenity. An Experimental Traffic Regulation Order was in place on the BOATs within the Stonehenge part of the property for six months from June 2018. WHS partner organisations have given very positive feedback on the results yielded by the closure for the landscape setting of monuments and greater amenity for visitors. The Experimental Traffic Regulation Order was however rescinded by court ruling and Wiltshire Council is considering whether to address the issues raised in the ruling and re-establish the Order.

Landscape Scale Strategies: Landscape Access, Sustainable Tourism, and Sustainable Transport

Funding has been secured from Highways England designated funds to support the World Heritage Site partnership in undertaking work on the Landscape Access, Sustainable Tourism and Sustainable Transport Strategies. These strategies are all actions set out in the Management Plan 2015 for the property aimed at achieving the agreed vision and aims for the property. The work will cover both the Stonehenge and Avebury landscape and deliver valuable benefits to the World Heritage Property, visitors and the local community and wider environment. Work on agreeing the scope and finalising briefs is underway.

World Heritage Site Condition Survey 2022

The World Heritage Site Condition Survey is carried out every 10 years to gain a detailed understanding of the condition of the property and provide a baseline for on-going review. The results of this survey enable an assessment of the success of conservation and management interventions and assist in planning future approaches. Partners are holding initial meetings to review our approach and agree funding for the next round of survey which it is planned will begin in 2020. The results of this survey should help to inform the response to the third cycle of Periodic Reporting.

4. In conformity with Paragraph 172 of the Operational Guidelines, describe any potential major restorations, alterations and/or new construction(s) intended within the property, the buffer zone(s) and/or corridors or other areas, where such developments may affect the Outstanding Universal Value of the property, including authenticity and integrity.

Army Rebasing 2020

Development connected with army rebasing is well advanced. Current plans have been agreed by the Local Planning Authority and curators for World Heritage Site. It remains important that any additional or consequential development continues to take into account the need to protect the World Heritage property and its OUV.

5. Public access to the state of conservation report

The State Party agrees that the full state of conservation report can be made publicly available via the WH Centre's Information System

6. Signature of the Authority

A handwritten signature in dark ink, appearing to read 'Enid Williams', followed by a long horizontal stroke.

Enid Williams
World Heritage Policy Adviser
Department for Digital, Culture, Media and Sport

Annex A: Response to Recommendations of the 2018 Mission Report

Recommendations:

1. Although the Proposed Scheme shows improvement compared with previous plans, and would also improve the current situation in the centre of the Stonehenge component of the WHS, it should not proceed in its current form.

The proposed scheme has been further altered following the mission in March 2018 to ensure the protection of the World Heritage Site. The State Party believes that, subject to the provision of more detailed information, the proposed scheme offers a way forward that will deliver overall benefit to the OUV of the property and resolve the long standing adverse impacts of the existing A303.

2. Potential surface routes for the proposed dual carriageway sections of the A303 should be reconsidered outside the WHS, on the basis that Outstanding Universal Value (OUV) of the WHS should be afforded at least equal priority to other environmental considerations (including impact on Areas of Outstanding Natural Beauty and Special Areas of Conservation), and must include complete closure of the section of the A303 which runs through the WHS.

The World Heritage Committee in its 42nd Session in Manama, Bahrain in June 2018 decided to remove the recommendation in the draft decision, based on the mission's recommendation, which asked that potential surface route options outside the WHS should be reconsidered. The Committee decision 42 COM 7B.32 supersedes the mission's recommendation and consequently no further work has been done on reconsidering surface routes outside the WHS, which had already been explored exhaustively. Work instead focused on the exploration of the potential for further mitigation of the minor adverse impact of the preferred route on the westernmost part of the WHS as requested by the Committee. This work is summarised in the body of the SOCR above and is detailed in Annex B.

3. Economic modelling of route options, and particularly the 'willingness to pay' approach, should recognise that options which reduce impact on OUV (such as a longer tunnel or a complete by-pass of the WHS) may have greater community benefit than options which partially remove the surface road but have other adverse impacts on OUV.

The detailed consideration given to the longer tunnel option undertaken in response to 42 COM 7B.32 summarised in the main body of the SOCR above has demonstrated that a longer tunnel would still have an adverse impact on OUV as the Longbarrow roundabout would have to remain in its present position and the existing alignment of the A360 would have to be retained. The opportunity to eliminate the adverse impact on two key barrow groups would be lost. As noted above the Committee did not ask for any further work to be undertaken on routes by-passing the WHS. As noted above the Committee did not ask for any further work to be undertaken on routes by-passing the WHS. Given that the minor adverse impact

remains and costs significantly increase, the “willingness to pay” approach is therefore no longer relevant to these options

4. If a longer tunnel is further considered, its design (as currently presented in the Proposed Scheme) must be substantially refined to ensure the OUV of the WHS is fully respected, and this refinement should take precedence over any predetermined project programme or deadline.

Please refer to Section 2 of the main body of the SOCR above. In addition, it should be noted that Committee decision 42 COM 7B.32 refers to the overall design of the tunnel rather than length, which is only one component of the design.

5. If a longer tunnel is further considered, the western portal should be relocated to the west of the western boundary of the WHS.

Please refer to Section 2 of the main body of the SOCR above.

6. If a longer tunnel is further considered, the location of the eastern portal should be further considered with a view to relocating it well to the east of the Countess roundabout.

As detailed previously, the location of the eastern portal is optimal and the suggestion that it should be moved 4km to the east is not justified in terms of the very minor benefits to OUV in relation to the exceptionally high cost, lack of connection with local roads and the threat to waterlogged archaeological remains alongside the River Avon from extending the tunnel.

7. A sustainable tourism strategy should be prepared for the WHS in its entirety, including the Avebury component, addressing the implications of results from the previously-recommended studies on changes in visitor numbers and behaviour, and responding to the opportunities for new interpretation and visitor experience that would arise from the proposed scheme. This would also imply incorporating the WHS Avebury component presentation within the current exhibition at the Visitor Centre.

Funding has been secured from Highways England designated funds to support the World Heritage Site partnership in undertaking work on the Landscape Access, Sustainable Tourism and Sustainable Transport Strategies. These strategies are all actions set out in the Management Plan 2015 for the property aimed at achieving the agreed vision and aims for the property. The work will cover both the Stonehenge and Avebury landscape and deliver valuable benefits to the World Heritage Property, visitors and the local community and wider environment. Work on agreeing the scope and finalising briefs is underway.

8. The Scientific Committee should be empowered to provide unfettered advice on any matter, including alternative route or construction options, the archaeological methodologies to be used during the project and its own membership, experience and skill set, and should be at liberty to report directly to the Heritage Monitoring Advisory Group and UK statutory heritage bodies, not only to Highways England.

The independent Scientific Committee of eminent archaeologists who are subject-matter experts in the heritage of the WHS is now established and reports directly to the Heritage Monitoring Advisory Group. Chaired by Professor Sir Barry Cunliffe, the Committee plays an active part in advising on the scope and standards of archaeological assessment, evaluation and (ultimately) mitigation to be applied to the proposed scheme. The Committee also considers and provides advice on matters relating to the OUV of the property. The Committee also includes representatives of the Heritage Management and Advisory Group who are members on behalf of their respective organisations: Historic England; English Heritage Trust; National Trust and Wiltshire Council.

9. The impact of any further proposed schemes on the OUV of the WHS should be evaluated using the methodology outlined in the Heritage Impact Assessment Scope (AECOM, Mace, WSP February 2018), the 2017 and 2014 preliminary heritage impact assessments by Snashall & Young, and the 2011 ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties.

We are pleased that the report “considers that the methodology outlined in the Heritage Impact Assessment Scoping Report (AECOM, Mace, February 2018) is appropriate” and that future HIA work should also have regard to initial assessment work undertaken by Dr Nick Snashall and Dr Christopher Young on behalf of Historic England and the National Trust as well as the 2011 ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties. The HIA accompanying the DCO application for the scheme was prepared on this basis and the State Party will ensure that any future HIA work is taken forward on this basis.

The January 2017 assessment by Snashall and Young referenced in this recommendation concluded that the scheme as it was then, would have a minor adverse impact on OUV and that this would be offset by the benefits to OUV delivered by the scheme, provided a land bridge of at least 150m length was included at the western end of the WHS. Since the assessment was concluded, a land bridge of 150m length has been included in the proposed scheme.

10. If a longer tunnel is considered, the HIA/EIA/DCO processes and assessments should include relevant expertise and adequate investigations to address factors such as life expectancy, end-of-working-life remediation, vibration and noise, which are particular to the tunnel solution.

Please refer to section 2 of the main body of the SOCR above.

11. The section of the current A303 which runs through the WHS could become a non- or limited vehicular thoroughfare after an improvement scheme has been completed that removes the road from the WHS, but the proposed link between byways 11 and 12 should not be established.

Both of the proposals recommended have been included in the currently proposed scheme.

12. A more broad-ranging community consultative process, which particularly includes the Avebury community, should be established to allow civil society to express their views, on an ongoing basis, about any aspect of the project, not only the legacy benefits being considered through the benefits and legacy forum process.

A wider consultative engagement with stakeholders and civil society has been achieved through the establishment of a Local Community Forum and by establishing scheme links and liaison with stakeholder groups such as the Avebury and Stonehenge Archaeological and Historical Research Group (ASAHRG). In addition direct stakeholder contact was set-up as an integral part of Advisory mission business, with a substantive face-to-face session taking place as part of the latest, March 2018 Advisory mission.

Additionally, Civil society has had the opportunity to express views formally at non-statutory pre-application, statutory pre-application and DCO stages, and this will continue throughout the DCO examination process. Dialogue has been ongoing through many avenues throughout the process. The State Party believes this has been completed in a thorough fashion and that this recommendation has been fully met.

13. The legacy benefits package for the project should incorporate initiatives and programmes identified as desirable to conserve and/or interpret OUV in the Management Plan for the WHS.

The legacy benefits package will consider a range of initiatives, including those to conserve and interpret the OUV of the World Heritage site. A legacy and benefits steering group has been established to ensure that the project maximises the heritage benefits of the scheme.

Legacy planning has taken into account the aims, policies and actions in the WHS Management Plan which provide a framework for positive legacy planning.

14. The timing and programme for the Development Consent Order process should be managed to allow for consideration of the conclusions and recommendations of this Advisory mission, any recommendations of the World Heritage Committee, and the time needed to explore further options.

Please refer to section 2 of the main body of the SOCR above.

15. Consultation with UNESCO World Heritage Centre and ICOMOS should continue for the life of the project, including, where appropriate, further Advisory missions once alternative options have been explored.

The UK State Party will continue to remain fully engaged with the World Heritage Centre and ICOMOS throughout the process and will consider inviting further advisory missions if required. As the Committee has accepted that alternative route options need no longer be explored we will continue our engagement with the Committee, World Heritage Centre and ICOMOS in relation to any potential there may be for further mitigation.

Annex B:

A303 Amesbury to Berwick Down: Options Considered in Response to 42COM 7B.32

PURPOSE

This annex provides further detail on the options considered for mitigating the impact of the A303 Amesbury to Berwick Down scheme on the Outstanding Universal Value (OUV) of the World Heritage Site (WHS). This is in response to the part of World Heritage Committee Decision 42COM 7B.32 which urged the State Party “*to continue to explore further design refinement, with a view to avoiding impact on the OUV of the property, including longer tunnel options that do not require an open dual carriageway cutting within the property and to avoid impact due to noise, lighting and visibility; and urges furthermore, the State Party to minimize the length of the culvert part of the tunnel in order to reduce the impact on the cultural landscape and the archaeology*”.

Specifically, this report considers the following:

- Options for further mitigation at the western end including covering the cutting entirely or significantly reducing the open section to much less than a kilometre;
- Whether the options are technically feasible, affordable and implementable, and if not, explain with evidence;
- An explanation of how and when any feasible mitigation could be implemented;
- Consideration of how the proposed option meets the requirements of the Convention.

BACKGROUND

The A303 between Amesbury and Berwick Down is a single carriageway road which regularly carries traffic levels which are twice its design capacity. Lack of capacity means that road users suffer from severe congestion, queuing and long delays, especially during summer months when delays can be an hour or more. Congestion, delay and poor journey time reliability on the A303 is a major impediment to economic growth in the South West region, which performs poorly compared to the rest of the UK.

Local communities suffer from the effects of through traffic and rat-running as drivers try to avoid congestion on the A303. The extra traffic on unsuitable routes causes frustration for local people who rely on these roads for day to day journeys and also raises safety concerns. The A303 passes directly through the village of Winterbourne Stoke, much of which is within a Conservation Area. Heavy traffic leads to community severance, noise and poor air quality.

The A303 also runs through the Stonehenge, Avebury and Associated Sites World Heritage Site (“WHS”), a landscape without parallel in the world, with a dense concentration of prehistoric monuments and sites, many of which are adversely impacted by the presence of the intrusive surface road. This creates incongruous sights and sounds of traffic within an otherwise tranquil rural setting that seriously diminish people’s enjoyment of the outstanding prehistoric landscape and degrade the setting of the iconic stone circle and many of the other monuments that convey the OUV of the WHS.

The A303 splits the Stonehenge component of the WHS in two, making it difficult for visitors to access and enjoy the wider landscape. Addressing the issue of the present surface road would reconnect many of the ancient monuments within the WHS. It would greatly improve access to the WHS and greatly enhance the ability to transmit the OUV of the WHS.

The harm caused by roads within the World Heritage Site has been recognised by the World Heritage Committee since the inscription of the property on the World Heritage List in 1986 and in 2007 the Committee expressed regret that no progress had been made in implementing the (2004) scheme to address the issue.

Development of the Scheme

The requirement for the A303 to be upgraded to a dual carriageway from a transport, regional and local economy and local community perspective is overwhelming. Importantly, the existing road also causes a major detrimental impact on the Outstanding Universal Value of the WHS as per **Table 1** below.

The State Party is fully cognisant of its responsibilities in respect of the Convention to protect World Heritage properties and has taken this into account throughout the planning and design of the currently proposed scheme.

From an affordability perspective, the approach to solving the transport and knock on economic and community impacts would be to widen the existing road to a dual carriageway. The most likely cost associated with such a dual carriageway has been calculated as £515m.

The proposed scheme, which is described below, has an expected cost of £1.699 bn. This is a further investment of c £1.2bn above the cost of a dual carriageway scheme. The additional cost relates to the heritage mitigations introduced to ensure that the scheme addresses the impact of the road on the OUV of the WHS. Approximately 70% of the cost of the scheme is dedicated to the protection and enhancement of OUV – this is a wholly exceptional figure which is unparalleled in English transport projects.

Preferred Route

The preferred route scheme, announced by the Secretary of State in September 2017, consisted of 12.3km of new free flowing 2 lane road of which 5.1km was in the WHS including a 3km twin bored tunnel, which would remove over 3km of the current surface road from the WHS.

The preferred route is shown in **Figure 1** below and the most likely capital cost of this scheme was £1.56bn.

The scheme was approximately 8 miles (13 km) long and comprised:

- a new two lane dual carriageway between Amesbury and Berwick Down
- a free-flowing junction between the A303 and A345
- a twin-bore tunnel under part of the WHS
- a junction west of the WHS, accommodating free-flowing A303 and A360 traffic movements, and a link to Winterbourne Stoke village.
- a bypass to the north of Winterbourne Stoke village.

The scheme design had both tunnel portals located within the WHS, although the location of the western portal was moved following the 2017 non-statutory consultation and in response to concerns raised by the Heritage Monitoring and Advisory Group (HMAG), and the second UNESCO/ICOMOS advisory mission, to avoid adversely impacting astronomical alignments including the Winter Solstice alignment from Stonehenge.

The proposed scheme also avoids an intrusive impact upon the Normanton Down barrow group through the landscape mitigation offered by the 200m canopy extension to the western portal. The current alignment of the surface road from the western portal to edge of the WHS has also ensured that the Diamond group of monuments is not bisected by the proposed infrastructure.

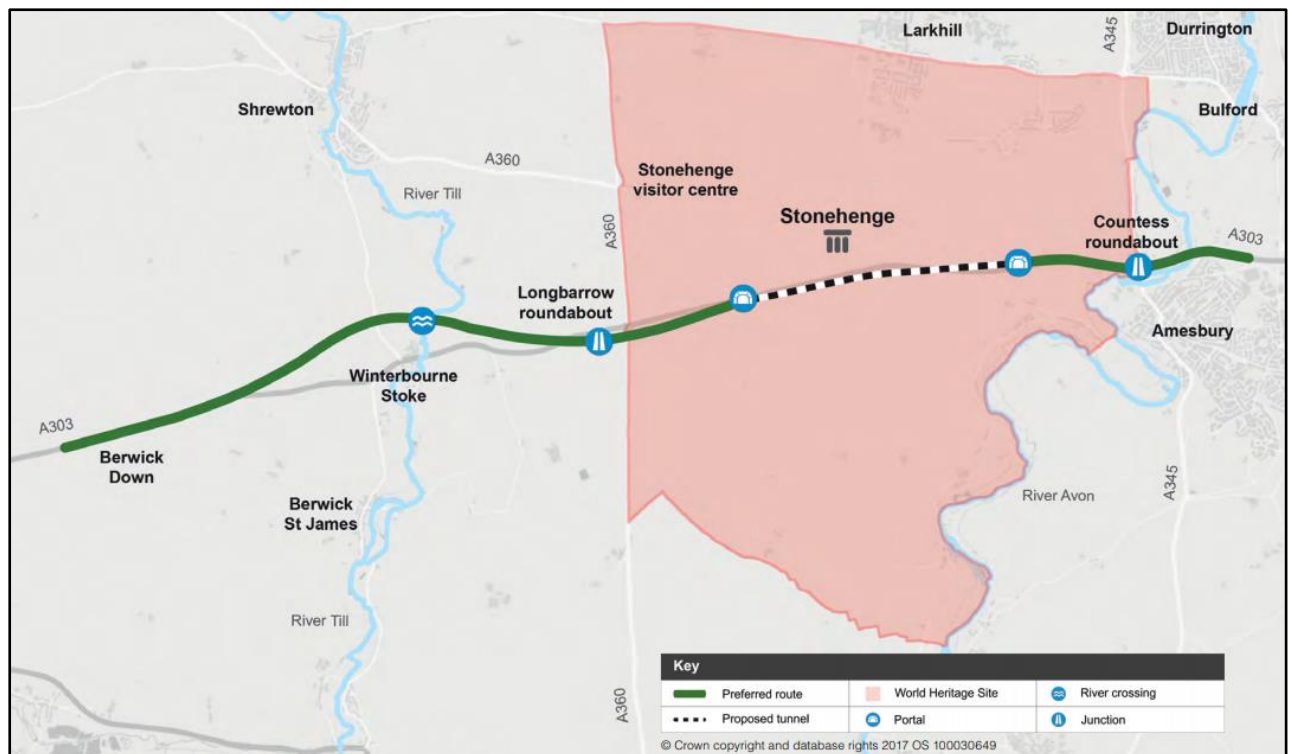


Figure 1: Preferred Route, announced in 2017

At preferred route announcement, the road entering both portals was of a standard cutting design, flanked by sloped sides and rising back to surface level at the western end soon after exiting the tunnel.

Following concerns raised by UNESCO, ICOMOS, HMAG and other stakeholders about the impact of the scheme on the Outstanding Universal Value (OUV) of the WHS, we amended the scope of the project to include:

Primary scopes change in response to WHC decision in July 2017	Purpose
Bored tunnel length increased from 2.9km to 3.0km.	This is necessary to avoid impacting on a Bronze Age barrow that conveys OUV (which is also a Scheduled Monument) that was close to the line of the tunnel.
A 1.2km & 7m (min) deep cut on the approach to the western portal.	To avoid large adverse impact identified during the HIA process of vehicles being seen across the line of sight between monuments.
Include 4 green bridges and a twin viaduct over the River Till	These are required to improve biodiversity and non-motorised user connectivity across the road corridor in a manner than is sympathetic to the landscape in which the road will sit.
200m Canopy over the cutting at the tunnel's western portal	To hide the normal infrastructure that is associated with tunnel entrances

This scope was presented to representatives of ICOMOS and the UNESCO World Heritage Centre on their visit in March 2018 and was the basis of their most recent report and recommendations to the World Heritage Committee. This scope also formed the basis of the design presented at Statutory Consultation which ran between Feb and April 2018.

World Heritage Committee Decision 42COM 7B.32

The Committee amended the draft decision to remove the request to the State Party to explore alternative surface routes options and to consider a position for the eastern portal 4km to the east.

The focus of the Committee decision in relation to the proposed scheme was on the potential for further mitigation at the western end of the route within the Stonehenge component of the WHS.

DEVELOPMENT OF PROPOSED SCHEME IN RESPONSE TO THE 2018 MISSION REPORT AND COMMITTEE DECISION

We note that while the Committee endorsed much of the 2018 Advisory Mission report, it reduced the emphasis on the exploration of surface options and providing an eastern extension to the tunnel. As such, the State Party has proceeded on the basis that the Committee's request to the State Party for alterations aimed at reducing the minor adverse impact on OUV to no adverse impact at all.

The first response of the State Party to this element of the Committee's decision was to consider whether the land bridge could be lengthened to 150m. Following further discussions with the Heritage Monitoring Advisory Group (HMAG) and other stakeholders after the UNESCO/ICOMOS mission in March 2018, and as a result of the concerns about the impact on the OUV expressed, the scope of the project was further increased to extend the green land bridge east of the Longbarrow Junction from 50m to 150m as part of the "proposed scheme" and to move the bridge further east as per the recommendations of the Snashall and Young heritage impact assessment and HMAG. This proposal was agreed by DfT and included in a supplementary consultation exercise between July and August 2018.

The most likely capital cost of the proposed scheme is £1.699 bn. The layout of the proposed scheme is shown in Fig 2 below:



Figure 2: Schematic layout of the proposed scheme

NOISE AND LIGHT MITIGATIONS

In addition to the mitigations to the scheme described above, specific mitigations in relation to lighting and noise have been developed as outlined below:

Lighting

Given the position of the scheme within the WHS, dark skies have been an important consideration to avoid adversely impacting on the WHS' attribute of OUV relating to astronomy. This consideration has been translated into specific mitigation measures, namely:

- There will be no new permanent open road lighting within the WHS section of the Scheme; and immediately adjacent to it
- At the western end of the WHS, road signs will not be lit;
- Lighting under the 150m Green Bridge will only occur between dawn and dusk and will be designed to minimise light spill outside of the bridge footprint;
- Tunnel portals will not be lit and lighting inside the tunnel will be designed to minimise light spill outside of the portals' footprint;
- There will be no lighting columns and associated lighting at Longbarrow Junction, on Countess Flyover and at Rollestone Corner;
- Existing lighting units at Countess Roundabout shall be replaced to minimise light spill

These measures will reduce the amount of light pollution to a level below that which currently exists, and will improve the overall appearance and understanding of the monuments in the context of the night sky for visitors.

Noise

A number of design features have been incorporated into the Scheme to minimise road traffic noise within the WHS, namely:

- Extending the tunnel to a length of approximately 3.3km and the inclusion of a green bridge at the western end of approximately 150m wide. This will give an over covered length of road within the WHS of approximately 3.45km and will reduce the length of open cut at the western end of the WHS to approximately 800m;
- Using a thin road surfacing system that results in lower noise generation than standard hot rolled asphalt road surfacing;
- Setting the route within a deep (7m minimum) cut along the western approach to the tunnel;
- Designing the surface finish of the retaining walls on the approaches to the tunnel portals to reduce noise reflection.

Overall, the scheme has been designed to reduce the impact of both noise and lighting to below that currently experienced within the WHS as a result of the existing road.

HERITAGE IMPACT ASSESSMENT FOR PROPOSED SCHEME:

In considering the potential for further mitigation in addition to the lengthening of the green land bridge, and as part of the work towards the submission of the Development Consent Order application, a Heritage Impact Assessment (HIA) has been undertaken by Highways England. This looks at the impact and effect of the existing A303 and that of the proposed scheme on the individual attributes of Outstanding Universal Value of the WHS as summarised in Table 1 below.

Attribute of Outstanding Universal Value	Impact of existing A303	Effect of existing A303	Impact of proposed scheme	Effect of proposed scheme
1. Stonehenge itself as a globally famous and iconic monument	Moderate Negative	Large Adverse	Major Positive	Very Large Beneficial
2. The physical remains of the Neolithic and Bronze Age funerary and ceremonial sites and monuments and associated sites.	Moderate Negative	Large Adverse	Negligible Negative Change	Slight (minor) Adverse
3. The siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in the landscape	Minor Negative	Moderate Adverse	Negligible Negative Change	Slight (minor) Adverse
4. The design of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to the skies and astronomy	Minor Negative	Moderate Adverse	Moderate Positive Change	Large Beneficial
5. The siting of Neolithic and Bronze Age funerary and ceremonial sites and monuments in relation to each other	Moderate Negative	Large Adverse	Negligible Positive Change	Slight Beneficial
6. The disposition, physical remains and settings of the key Neolithic and Bronze Age funerary, ceremonial and other monuments and sites of the period, which together form a landscape without parallel	Moderate Negative	Large Adverse	Negligible Positive Change	Slight Beneficial
7. The influence of the remains of the Neolithic and Bronze Age funerary and ceremonial monuments and their landscape setting on architects, artists, historians, archaeologists and others	Negligible Negative	Slight Adverse	Negligible Positive Change	Slight Beneficial
Integrity	Major Negative	Large Adverse	Negligible Positive Change	Slight Beneficial
Authenticity	Negligible Negative	Slight Adverse	Negligible Positive Change	Slight Beneficial

Table 1: Summary of assessment of effect of existing A303 and proposed scheme on Attributes of OUV, Integrity and Authenticity of the WHS.

The HIA concludes that the proposed scheme will bring substantial benefits to large parts of the WHS, in particular the tunnel section where “Very Large Beneficial” effects will be experienced by the Stonehenge monument itself (Attribute 1) and “Large Beneficial” effects will be experienced by the solstitial alignment (Attribute 4).

“Slight Beneficial” effects will be achieved in relation to the siting of monuments in relation to each other (Attribute 5), within the landscape without parallel (Attribute 6), and with regards to the influence that the monuments and their landscape setting have on architects, artists, historians, archaeologists and others (Attribute 7).

“Slight Adverse” effects will be experienced on physical archaeological remains (Attribute 2) and upon the siting of monuments in relation to the landscape (Attribute 3) due to the positioning of new cuttings within the WHS (western and eastern approach roads and portals), which avoid known archaeological remains that contribute to the OUV of the WHS but introduce new severance and impacts on the setting of assets and asset groups.

Overall, the OUV of the WHS would be sustained by the construction of the proposed scheme, which would create opportunities for greater public access, appreciation and enjoyment of the WHS, through increased connectivity between key monuments and monument groups north and south of the existing A303. The proposed scheme would thus enable beneficial opportunities for the transmission of OUV and increasing the public’s awareness, understanding and perception of the OUV of the WHS in a local, regional, national and international context.

Highways England’s conclusion, set out in the HIA regarding the effect of the proposed scheme on the Attributes of OUV and the Authenticity and Integrity of the WHS as a whole, is it will have a “**Slight Beneficial**” effect. In reaching this conclusion, a precautionary approach has been adopted to avoid overstating positive impacts and beneficial effects where these arise to ensure a balanced view is achieved.

The final report was published in October 2018 as part of the DCO application. This HIA forms the baseline against which the potential for further mitigation is reported as set out in the next section

FURTHER MITIGATION

Highways England considered how further mitigation could be introduced at the western portal which would reduce the minor adverse impact of the scheme. These options considered were:

- Extending the bored tunnel
- Extending the cut and cover section at the western portal

1. EXTENDING THE BORED TUNNEL

Tunnel boring can only commence and finish when the depth of ground cover above the crown of the tunnel bore is a minimum of half the diameter of the bore; which for the A303 tunnel would be approximately 7m. For this reason, it is necessary to commence/finish the bores at the upward /downward faces of hills and to maintain a similar minimum depth of cover of 7m along the entire length of the tunnel.

Figure 3 below, shows the proposed scheme road alignment and western portal location within the WHS, as well as the profile of the land in a westerly direction. It also shows a possible location for a western bored tunnel portal outside of the WHS.

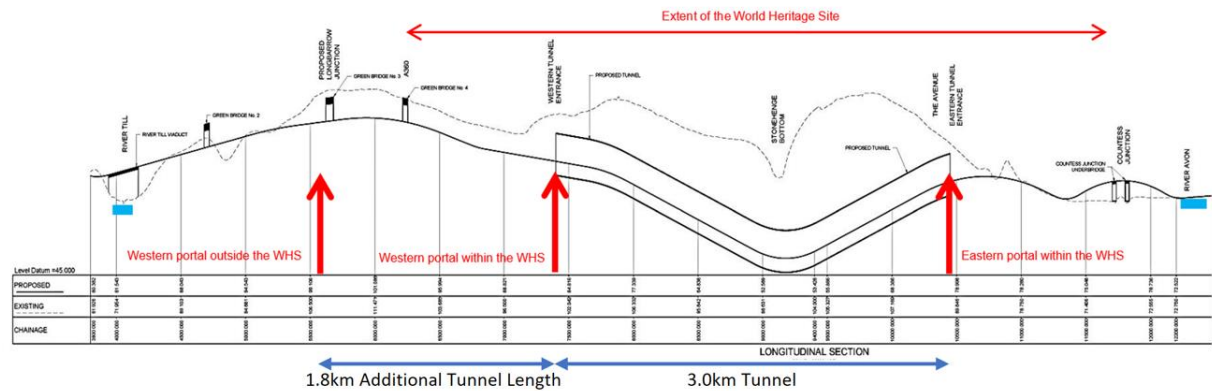


Figure 3: Possible alternative western tunnel portal location

This potential location for the western portal outside of the WHS boundary is located 1.8km to the west of the currently proposed location.

The additional tunnel length would cost an additional £540million. This would increase the most likely scheme cost from £1.7bn to £2.24bn and increase the costs directly attributed to heritage as against transport from £1.2bn to over £1.7bn. In other words, the cost of the road scheme directly resulting from actions to benefit the heritage would be almost 4.5 times the cost of the transport element of the scheme. The additional cost would also significantly reduce the benefits to costs ratio for the scheme resulting in a “poor” value for money ratio.

Extending the tunnel would also require a considerable change to the location and layout of the Longbarrow junction to fit the junction before the floodplain.

The only junction arrangement that would fit within the space available would be sub-standard for the predicted volumes of traffic on the A303 and would therefore not be acceptable on safety grounds. This junction arrangement would result in the existing A360 and Longbarrow roundabout being retained at their existing undesirable locations adjacent to the WHS boundary and in particular the Winterbourne Stoke Barrow Group. This would partly erode the benefit of extending the tunnel and moving traffic away from the WHS, and also result in the loss of a significant heritage benefit delivered by the currently proposed scheme.

Locating the junction further away from the A360 would also result in increased “rat running” through Winterbourne Stoke and other villages as the junction would be located nearer to Winterbourne Stoke and its associated minor roads network rather than to the principal A360 road.

It is therefore clear that extending the tunnel portal to the West is not a viable proposition. It would fail on value for money grounds, having a greater heritage impact in certain areas than the current proposals thereby eroding the benefit of extending the tunnel and moving traffic away from the WHS, and would not resolve the current rat-running traffic problems in the local villages. For these reasons, consideration of this option was not taken any further.

2. LONGER CUT AND COVER

The other option explored was to cover the cutting between the end of the canopy at the western portal and the 150m land bridge east of the current Longbarrow roundabout and to extend the remaining section from the land bridge to the western extent of the WHS. This would create an additional fully covered tunnel section of 800m as illustrated in figure 4 below.

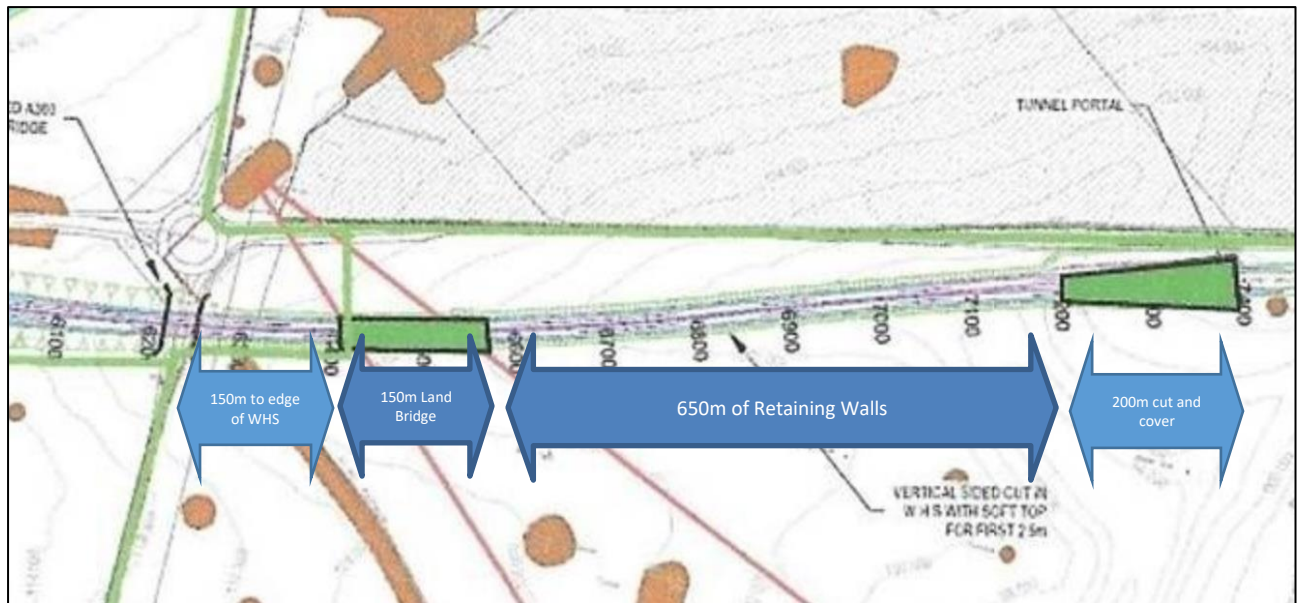


Figure 4: Extended cut and cover at western porta

Costs and benefits

There is also an additional cost to the cut and cover proposal.

A comparison of the capital costs, construction period and benefits of the option compared with the proposed scheme is given in Table 2 below:

	Proposed Scheme	Extended cut and cover	Difference
Construction period	66 months	78 months	+12 months
Most Likely Capital Cost	£1,699m	£1,825m	+£126m
Present Value of Benefits	£1,313m	£1,313m	-

Table 2: Costs and benefits of proposed scheme versus adding additional cut and cover

As can be seen, the most likely cost of construction increases by £126m if additional cut and cover is added at the western end.

Value for Money (VfM)

The value for money (VfM) of a road scheme in the UK is classified in accordance with DfT guidance and this in part depends upon the benefits to cost ratio but also on other, broader factors such as environmental impacts.

The VfM of the A303 scheme at preferred route was classed as “Medium” but the additional costs of the heritage mitigations included in the proposed scheme (described above) has reduced the VfM to “Low”. The benefits to cost ratio of the proposed scheme is 1.1:1 which means the cost of the scheme is only just balanced by the expected benefits (including those related to improving the cultural heritage of the WHS).

We have undertaken analysis to assess the value for money of the scheme if the additional cut and cover was added. This indicates that the additional costs of £126m are not balanced by additional quantifiable benefits and the VfM of the scheme would be reduced to “Poor”.

The majority of road schemes that are invested in by the UK government have a VfM of “medium” or “high” to ensure that the return on the investment is maximised. Support for the proposed scheme with a VfM of “low” demonstrates the significant commitment to minimising the impact of the current road on the WHS. Adding additional cost to the scheme with no additional benefit will put the approval of this scheme at significant risk.

Technical Feasibility

There are potential technical and safety implications regarding the distance between the end of the covered area (from a drivers’ point of view at the end of the “tunnel”) and the slip roads to the Longbarrow junction. In order to comply with highways safety standards, it is recommended that the minimum distance from the commencement of the slip roads is no less than 180m.

There are a number of design implications including the provision and location of signs, the location of laybys, and the location of and access to the Tunnel Service Buildings. This leads to a number of safety implications including the creation of additional traffic movements and lane changes in an area that already leads to higher driver workload.

Extending the covered area would result in multiple design changes, including the need to redesign the Longbarrow junction. This would result in further costs of this option not considered in the costs and benefits analysis above, further reducing the value for money offered by the scheme.