

**National Highways: A303 Amesbury to
Berwick Down Project, Development Consent
Order Application**

Scheme Reference: TR010025

Transport, Carbon and Economic Issues

**Response to Secretary of State's call for further
representations on his Statement of Matters**

Bullet Points 2–4 and

Environmental Review Appendix:

Transport Assessment Review

for

The Stonehenge Alliance

(Reference No. 2001870)

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1. Key Points

- 1.1 This paper sets out The Stonehenge Alliance’s response, on transport, carbon and economics issues, to several documents prepared by National Highways (NH) following a request from the Secretary of State. These documents cover policy, carbon, review of environmental information and NH’s transport assessment, and should be read in conjunction with the Stonehenge Alliance’s submissions to the Examination in Public. The issue of alternatives is covered in a separate paper.
- 1.2 We are aware that the Secretary of State has requested the Applicant to *‘update section 4 of their response to the Statement of Matters on carbon . . . to provide for its assessment of the cumulative effects of Greenhouse gas emissions from the scheme with other existing and/or approved projects on a local, regional and national level.’* We have not seen this updated information and reserve the right to comment on it when it has been submitted.
- 1.3 The Stonehenge Alliance view is that the Secretary for Transport should reject National Highways’ defence of its argument to proceed with its project, because its case is fundamentally flawed in numerous respects. NH has failed to robustly demonstrate the need for the scheme and the harms it will cause are many and various. The Secretary of State has already accepted that it will cause permanent and irreversible harm to the World Heritage Site and other assets. Evidence since the date of the Secretary of State’s decision reveals that the damning comments made by the Examining Authority and agreed by the Secretary of State are in fact underestimates of the harm. Further harm will arise in the context of carbon emissions (including through road traffic and embodied carbon), landscape and other harms as previously outlined in our Examination submissions and also set out in submissions made as part of this post-quashing exercise. This harm could be avoided through alternative means and in the context of a scheme which risks the WHS losing its world heritage status the availability of alternatives (which has not been properly addressed by NH) should be given considerable weight.
- 1.4 The list of flaws in NH’s material, discussed in more detail in our paper, are in summary:
 1. Inconsistent with Parliament’s declaration of a climate emergency
 2. Inconsistent with the 6th Carbon Budget
 3. Inconsistent with the advice of the Climate Change Committee
 4. Inconsistent with the Government’s Decarbonising Transport Strategy

5. Inconsistent with a 68% cut in carbon emissions by 2030 (from the 1990 level) – the UK's Nationally Determined Contribution as part of the Paris Agreement
6. Treating as irrelevant the government's current review of NPSNN
7. Ignoring DEFRA recommendations on scenarios of climate change to include in appraisal
8. Ignoring BEIS and DFT advice on carbon values
9. Contradiction of the Examining Authority and Secretary of State's finding that the proposed tunnel would do permanent and irreversible damage to the World Heritage Site, including its archaeology
10. Initial and continuing use of demand projections which are inconsistent with DfT's advice on scenarios of future traffic trends
11. Ignoring any effects on traffic of all current major developments in the economy, including Brexit, Covid19, and any significant amount of climate change in the future
12. Ignoring all DfT's future traffic scenarios except the one which NH claims would support the case for its project, though failing to produce evidence of that support
13. Assuming that none of the Government's or Secretary of State for Transport's, current determined strategies and policies to reduce car traffic could be successful
14. Failing to take seriously that even its own calculations show that the suggested travel time savings (against an unrealistic base) do not come anywhere close to providing value for money of the great cost of the project
15. Failing to take account of the increased cost since its earlier, rejected, case
16. Relying on an invented alternative 'heritage value' of the project, by application of a method, unsupported by independent peer review, which was based on questions whose premise was contradicted by the Inspectors' findings of damage to the World Heritage Site
17. Failing to carry out an amended assessment of heritage value which would have recognised those findings, or address any of the criticisms made of its methodology by critics other than its own consultants
18. Refusing to carry out a revised calculation of the Business Case for the project

19. Failure to consider alternatives.

1.5 We make the case in our response of why all of these points are relevant to the Secretary of State's decision, and should lead to him refusing the Development Consent Order. Ultimately, the proposal conflicts with key parts of the NPSNN. Further, the adverse impacts of the proposal outweigh its benefits and therefore the DCO application ought to be refused.

2. Introduction

2.1 This document sets out The Stonehenge Alliance's response on transport planning, carbon and economic issues, to several submissions by National Highways (NH, formerly Highways England) in support of its Development Consent Order Application for the A303 Amesbury to Berwick Down project, following a request from the Secretary of State. It responds to the following documents:

- Response to Bullet Point 2: Policy (TR010025-002236)
- Response to Bullet Point 3: Carbon (TR010025-002230)
- Response to Bullet Point 4: Environmental Information Review (TR010025-002232)
- Environmental Review Appendix: Transport Assessment Review (TR010025-002231).

2.2 Our comments on Alternatives are contained in a separate document.¹

2.3 Following this Introduction, Section 3 considers policy issues. This is followed in Section 4 by discussion of the traffic forecasting. Section 5 considers the Business Case for the project and Section 6 discusses its relationship to the overall A303 programme. Section 7 contains a summary and our conclusions.

3. Policy Issues

3.1 In its submission on policy issues², NH notes that the National Policy Statement on National Networks (NPSNN)³ is currently being reviewed "in light of the Government's legal commitment to net zero, the 10-point plan for a green industrial revolution (HM Government, 2020), the new sixth carbon budget (Committee on Climate Change,

¹ Stonehenge Alliance "Response to SoM Bullet Point 1: Alternatives", April 2022

² National Highways "A303 Amesbury to Berwick Down. Statement of Matters issued 30 November 2021: Applicant's response to the matters on which the Secretary of State invites further representations (Paragraph 2). Response to Bullet Point Two - Policy" ([TR010025 – 002236](#)), paragraph 2.1.2

³ Department for Transport "National Policy Statement for National Networks", HMSO, December 2014

2020) and the Decarbonising Transport plan (DfT, 2021). The review is proposed to continue for completion no later than spring 2023.” It asserts that this means that the December 2014 version of the NPSNN remains in force and that there is no need to revisit policy issues until it is revised.

- 3.2 This is incorrect for two reasons. First, although the NPSNN has not itself yet been formally amended or replaced, it has been announced as under review, specifically because there are many other aspects of Government policy, directly material to this proposal, which have very clearly and unambiguously changed. These include specifically the Decarbonisation Strategy (discussed below) which has been amended and clarified on several occasions since 2014 and is such a core element of Government policy that, where there might be a difference of policy or element, the later statements which are more up to date should be given considerable weight.
- 3.3 Other changes include policy on the principles and practice of how transport projects and programmes should be appraised, including the Treasury review of the ‘Green Book’⁴ on transport appraisal; the consequential advice by DEFRA⁵ on scenarios of appraisal of climate change; new recommended values of carbon emissions per tonne by BEIS⁶ and its inclusion in the DfT’s TAG appraisal guidance⁷; as well as updated DfT guidance on the treatment of uncertainty and traffic forecast scenarios, which changed from 2015 to 2018, and again in 2021 both before and after the original application by NH⁸.
- 3.4 We attach, in Annex A, a recent letter from the Department for Transport to local highways authorities and sub-national transport bodies which usefully summarises in its own words policy changes which have been made, since 2019 and given advice that that these policy changes can be material to future DfT funding of local road schemes. We assert that this supports in principle our view that the same policy changes will be relevant to reconsideration of NH schemes, including this one.
- 3.5 The Secretary of State’s decision is governed by s104 of the Planning Act 2008. Under section 104(2) the Secretary of State is required to have regard to a number of matters, these include ‘any other matters which the Secretary of State thinks are both

⁴ HM Treasury “Green Book Review: Findings and Response”, 2020; and HM Treasury “Green Book 2020”

⁵ DEFRA (2020) Accounting for the effects of climate change.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/934339/Accounting_for_the_Effects_Of_Climate_Change_-_Supplementary_Green_Book_...pdf

⁶ BEIS (September 2021) Valuation of greenhouse gas emissions: for policy appraisal and evaluation

<https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation>

⁷ Sheet A3.4, TAG Data Book v1.17, Department for Transport, November 2021

⁸ Department for Transport Uncertainty Toolkit: TAG Supplementary Guidance (May 2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/983766/tag-uncertainty-toolkit.pdf

important and relevant to the Secretary of State's decision'. Updated central government policy on key issues such as carbon and climate change are patently 'important and relevant'. Section 104(3) provides that the 'Secretary of State must decide the application in accordance with any relevant national policy statement, except to the extent that one or more of subsections (4) to (8) applies'. Subsection 104(5) applies 'if the Secretary of State is satisfied that deciding the application in accordance with any relevant national policy statement would lead to the Secretary of State being in breach of any duty imposed on the Secretary of State by or under any enactment'. Section 104(7) applies 'if the Secretary of State is satisfied that the adverse impact of the proposed development would outweigh its benefits'. Here, both subsections 104(5) and 104(7) apply. Further, when considering whether s104(7) applies the Secretary of State will have to consider up to date policies on carbon and climate change. It would be irrational not to do so.

- 3.6 NH has itself recognised some of these changes, accepting that it would have to review some elements of the earlier appraisal in the light of new circumstances, guidance or policy. The problem is that this has been done inconsistently, choosing to recalculate some elements which appeared (in its judgment) to strengthen the case for the Scheme, but to ignore or dismiss other recalculations which would weaken it. This breaches the over-riding responsibility to ensure that its appraisals and advice should be even-handed and not get confused with its role as Scheme Promoter.
- 3.7 Secondly, the argument of the primacy of the 2014 statement ignores the full text of s104 Planning Act 2008 which requires other material considerations to be taken into account this necessarily includes up to date policy. National Highways is a Government company and it should be expected to act in accordance with overall Government policy, irrespective of whether this has fed through to all relevant policy statements. If it should appear that some Government policies are in conflict with others (which can happen due to the timescale of discussion and amendment), this should be discussed seriously with reasoned argument, not by selectively highlighting some and ignoring others. We assert that though there may be some exceptions, in general the principle should be that recent policy decisions take precedence over earlier ones, especially on central planks of Government policy on matters of national urgency.
- 3.8 Ultimately, the context in which this decision is to be taken (in 2022) is wholly different from 2014 when the NPSNN was adopted. On May 1st 2019, during the

Examination, the UK Parliament passed a resolution declaring a climate emergency, stating⁹:

“this House declares an environment and climate emergency following the finding of the Inter-governmental Panel on Climate Change that to avoid a more than 1.5°C rise in global warming, global emissions would need to fall by around 45 per cent from 2010 levels by 2030, reaching net zero by around 2050; recognises the devastating impact that volatile and extreme weather will have on UK food production, water availability, public health and through flooding and wildfire damage...; calls on the Government to increase the ambition of the UK’s climate change targets under the Climate Change Act 2008 to achieve net zero emissions before 2050, to increase support for and set ambitious, short-term targets for the roll-out of renewable and low carbon energy and transport...”

3.9 In its 2020 report¹⁰, the Climate Change Committee highlighted the fact that surface transport is now the economic sector which produces the largest share – 22% – of the UK’s Greenhouse Gas Emissions. Reducing this is critical to achieving its proposed 78% reduction in carbon emissions relative to 1990 (63% relative to 2019) by 2035. The Committee recommended that emissions need to fall by 68% between 1990 and 2030, a marked increase from the 57% recommended in the 5th carbon budget for the same period. The Committee highlights a number of measures that need to be taken to achieve this, with the first being¹¹:

*“**Reduction in car travel.** Our demand scenarios are based on modelling by the UK Centre for Research into Energy Demand Solutions (CREDS), along with other literature and evidence across UK cities and in other countries. Compared to baseline growth, we assume that approximately 9% of car miles can be reduced (e.g. through increased home-working) or shifted to lower-carbon modes (such as walking, cycling and public transport) by 2035, increasing to 17% by 2050. The opportunities presented to lock-in positive behaviours seen during the COVID-19 pandemic and societal and technological changes to reduce demand (e.g. shared mobility and focus on broadband rather than road-building) are key enablers.”*

3.10 As the Green Alliance has pointed out¹², this will only be sufficient to meet the target reduction in emissions if sales of zero emission vehicles grow rapidly. If this does not occur, a greater reduction in average car use would be needed. This would also have

⁹ Hansard “Environment and Climate Change, Volume 659: debated on Wednesday 1 May 2019” <https://hansard.parliament.uk/commons/2019-05-01/debates/3C133E25-D670-4F2B-B245-33968D0228D2/EnvironmentAndClimateChange>

¹⁰ Climate Change Committee “The Sixth Carbon Budget: The UK’s Path to Net Zero”, December 2020

¹¹ Climate Change Committee “The Sixth Carbon Budget: The UK’s Path to Net Zero”, December 2020, page 97

¹² Bennett H and Brandmayr C “Not going the extra mile: driving less to tackle climate change”. Report for Green Alliance, 2021

wider benefits on health, air quality and in underpinning better public transport. It should be noted that the Welsh Government has committed to a 10% reduction in car miles travelled per person by 2030¹³. Analysis by Element Energy for the Scottish Government supports a target of a 20% reduction in total car mileage by 2030, relative to 2019¹⁴ and this was adopted by the Scottish Government in 2020¹⁵. National Highways predict that the A303 project will result in an increase in car use, rather than a reduction. Accordingly, it is clearly contrary to the Climate Change Committee's pathway and the policy direction of devolved administrations. The 6th carbon budget proposed by the Committee was incorporated into law in June 2021¹⁶.

- 3.11 The Government's Net Zero Strategy further sets out how this may be achieved including:

"Alongside road vehicle decarbonisation, we must increase the share of trips taken by public transport, cycling and walking. We want to make these modes the natural first choice for all who can take them. As more journeys are cycled or walked, and taken by public transport, the carbon, air quality, noise and congestion benefits will be complemented by significant improvements in public health and wellbeing.

*We will support and encourage modal shift of freight from road to more sustainable alternatives, such as rail, cargo bikes and inland waterways."*¹⁷

- 3.12 On page 158, the strategy commits to *"make buses more frequent, more reliable, more comprehensive, easier to understand and use, better co-ordinated and cheaper – to dramatically increase passenger numbers and reduce congestion and carbon emissions"*. It also commits to *"build extra capacity on our rail network to meet growing passenger and freight demand and support significant shifts from road and air to rail."* In summary, the policy approach is to achieve modal shift from car and truck to public transport and active travel modes. Constructing a new road that will result in trips transferring **to** car is clearly diametrically opposed to this policy.

- 3.13 This policy stance is further emphasised in The Ten Point Plan for a Green Industrial Strategy. This states:

"As well as decarbonising private vehicles, we must increase the share of journeys taken by public transport, cycling and walking. We will therefore accelerate the

¹³ Welsh Government "Net Zero Wales Carbon Budget 2", 2021

¹⁴ Element Energy "Decarbonising the Scottish Transport Sector", Report for the Scottish Government, 2021

¹⁵ Update to the Climate Change Plan 2018 – 2032: Securing a Green Recovery on a Path to Net Zero, Scottish Government, December 2020

¹⁶ "The Carbon Budget Order 2021", Statutory Instrument 2021 No.750, 23rd June 2021

¹⁷ HM Government "Net Zero Strategy: Build Back Greener", HMSO, 2021, page 156

transition to more active and sustainable transport by investing in rail and bus services....”¹⁸

3.14 Investing in a project which does the opposite is clearly contrary to this policy.

3.15 The transport decarbonisation plan issued by the Department of Transport in 2021¹⁹ states (on page 6):

“improvements to public transport, walking and cycling, promoting ridesharing and higher car occupancy, and the changes in commuting, shopping and business travel accelerated by the pandemic, also offer the opportunity for a reduction or at least a stabilisation, in traffic more widely.”

3.16 It then sets out a series of specific commitments designed to reduce road travel. Many of these would contribute by making alternatives more attractive. The most relevant are summarised below, together with comments on how they would contribute:

- *“We are building extra capacity on our rail network to meet growing passenger and freight demand and support significant shifts from road and air to rail”;*
- *“We will deliver an ambitious, sustainable, and cost-effective programme of [rail] electrification guided by Network Rail’s Traction Decarbonisation Network Strategy”.* Electrification makes rail journeys faster, smoother and more attractive, as well as more competitive for freight. Network Rail’s strategy²⁰ includes electrification from Newbury to Exeter, Plymouth and Penzance as well as the route from Basingstoke to Exeter via Salisbury. These routes are the rail alternatives to the A303 corridor;
- *“We will take action to increase average road vehicle occupancy by 2030”.* Higher vehicle occupancy means that the same number of person journeys can be undertaken in fewer vehicles, thereby reducing traffic volumes.
- *“We will support and encourage modal shift of freight from road to more sustainable alternatives, such as rail, cargo bikes, and inland waterways.”*

3.17 Thus “Decarbonising Transport” lists a series of specific areas of policy development linked to the aim of reducing traffic through more use of alternative modes, more efficient operation of cars, and land use which enables a better quality of life by reducing car dependence. Much of this is focussed on urban travel (with policy to achieve 50% of all trips by walking and cycling, plus expanded use of public transport

¹⁸ HM Government “The Ten Point Plan for a Green Industrial Revolution”, 2020, page 16

¹⁹ Department for Transport “Decarbonising Transport: A Better, Greener Britain”, 2021. The commitments referred to below are set out on pages 9 to 13

²⁰ Network Rail “Traction Decarbonisation Network Strategy”, 2020

by improvement in its quality and efficiency), but with reference also to policies which would reduce traffic for longer distance journeys as well, including increasing the average occupancy of cars, improved long distance coach services, and major expansion of long-distance rail services. As most longer distance car journeys start or finish in urban areas, reducing inter urban traffic is also important to achieving targets to reduce urban traffic.

3.18 Some of these policies are already accompanied by specific changes to regulations and funding, such as the new ‘hierarchy’ of road users underpinning the revised Highway Code, and the committed plans to set up the new agency Active Travel England, with very substantial staffing and budget. Some of them have still to be worked out in detail, but they are nevertheless treated by Government as a serious part of its committed policies, not a vague assertion of aspirations. The policy context in 2014 cannot be treated as unaffected by these changes.

3.19 There are three ways in which NH has fallen short of treating these policies seriously in its submission.

1. It has not tested its proposal for compatibility with the wider policies.
2. It has not taken into account that such policies – whether it considers them relevant to its own role or not – will undoubtedly affect the traffic forecasts on which it bases its calculation of ‘need’. We consider this further below.
3. It has not taken account of the extent to which climate change will itself change the conditions and propensities of travel due directly to weather conditions, and indirectly due to the effects on the economic geography of the country, patterns of national and international trade, economic prosperity and population movements.

3.20 NH claims to have updated its assessment of the greenhouse gas impacts of the project and states:

“the increase in carbon emissions resulting from the proposed Scheme are not significant and would not have a material impact on the ability of Government to meet its carbon reduction targets”²¹.

3.21 NH’s assertion that the increase in emissions is not significant is not backed up by any evidence and the comparison with UK carbon budgets is not a test of significance, but one of determination. The argument that this project in isolation would not ‘have a

²¹ National Highways “A303 Amesbury to Berwick Down. Statement of Matters issued 30 November 2021: Applicant’s response to the matters on which the Secretary of State invites further representations (Paragraph 2). Response to Bullet Point Three - Carbon” ([TR010025 – 002230](#)), Table 1, page 18

material effect on the ability of Government to meet its carbon reduction targets' depends on an implicit assumption that the Government could simply augment carbon reduction activities more in some other, unspecified, sector or activity, but this does not take into account the already substantial challenge of reducing carbon across the transport sector. In addition, it is not realistic to take this single project in isolation. It is part of a much larger programme for the A303 Corridor and nationally through Road Investment Strategy 2. The combined effects of the programme would be much greater and even less credibly dismissed as insignificant. NH avoids addressing this by treating each proposed investment as a freestanding project and ignoring their combined effects. The failure to assess the cumulative effects of these schemes is a material omission and contrary to the EIA Regulations.

- 3.22 Climate change is not the only effect of emissions from motor vehicles. They also have significant local air quality impacts. In 2021 the World Health Organisation updated its "Global Air Quality Guidelines"²². This document states that:

*"The burden of disease attributable to air pollution is now estimated to be on a par with other major global health risks such as unhealthy diet and tobacco smoking, and air pollution is now recognised as the biggest single environmental threat to human health."*²³

- 3.23 The new Guidelines significantly reduce the maximum levels of several key pollutants, compared with the previous guidance published in 2005. In particular the level of PM_{2.5} particulates was reduced by 50% and that for Nitrous Oxide by 75%. These are levels at which there is strong evidence of harm to human health. Even if these levels are not exceeded in the immediate vicinity of the project, the new road would result in an increase in traffic and emissions. This not only increases the overall quantum of pollution, but also makes it more likely that the maximum levels will be exceeded when the extra vehicles pass through urban areas elsewhere on their journeys.

- 3.24 The paragraphs above make it very clear that Government policy has shifted significantly in relation to the balance between road and other modes since the current NPSNN was published. It would be perverse to ignore this shift in determining the A303 Application by a government-owned company; simply because the review of NPSNN is expected to take another year before being complete. In any case, it is certain that that review will be complete before the proposed Stonehenge Tunnel might be even opened, let alone for the rest of its proposed lifetime. The Government has (a) committed to reviewing the NPSNN because circumstances have changed since it was written; and (b) already taken policy decisions which manifestly go beyond the

²² World Health Organisation "Global Air Quality Guidelines", 2021

²³ World Health Organisation "Global Air Quality Guidelines", 2021, Executive Summary, page xiv

scope of the 2014 document. Taken together this shows that those new decisions have an authority in their own right.

- 3.25 It is also important to recognise the serious concerns expressed by the World Heritage Committee about the impact of the project on the Stonehenge, Avebury and Associated Sites World Heritage Site. The Decision of the 2021 session states that the Committee:

“Recalls that the Committee has previously noted that the 2018 joint World Heritage Centre/ICOMOS Advisory mission and the State Party’s own Heritage Impact Assessment (HIA) highlight that the current overall proposal would impact the integrity of the intended spatial relationships between monuments, a key part of the prehistoric ‘landscape without parallel’ as inscribed;

Reiterates its concern that, as previously advised by the Committee and identified in the 2018 mission report, the part of the A303 improvement scheme within the property retains substantial exposed dual carriageway sections, particularly those at the western end of the property, which would impact adversely the Outstanding Universal Value (OUV) of the property, especially affecting its integrity;

Notes with concern that, although consideration was given to extending the bored tunnel and to greater covering of the cutting, as requested by the Committee, it was determined by the State Party that the additional benefits of a longer tunnel would not justify the additional costs;

Reiterates its previous request that the State Party should not proceed with the A303 route upgrade for the section between Amesbury and Berwick Down in its current form, and considers that the scheme should be modified to deliver the best available outcome for the OUV of the property;

Notes furthermore the State Party’s commitment to ongoing engagement with the Committee, the World Heritage Centre, and ICOMOS, but also considers that it is unclear what might be achieved by further engagement unless and until the design is fundamentally amended;

Regrets that the Development Consent Order (DCO) has been granted for the scheme; and therefore, further considers in conformity with Paragraph 179 of the Operational Guidelines that the approved A303 improvement scheme is a potential threat to the property, which - if implemented - could have deleterious effects on its inherent characteristics, notably to its integrity;

Notes moreover that in the event that DCO consent was confirmed by the High Court, the property warrants the inscription on the List of World Heritage in Danger.”²⁴

3.26 Clearly the DCO was quashed by the High Court, but the same concerns would apply if the project were approved in its current form during the Re-determination. Indeed, the Secretary of State himself has found that the proposal will cause permanent and irreversible harm to the World Heritage Site. Key findings by the Secretary of State are listed in our submission on alternatives.

3.27 The United Kingdom is a signatory of the World Heritage Convention and claims to take the conservation of our historic heritage very seriously. Accordingly, it would be wrong to ignore the repeatedly stated concerns of the World Heritage Committee (WHC) and proceed with the project in its current form. We note that approving the DCO would very likely result in the WHS being placed on the List of World Heritage in Danger. If the project went ahead, it is very probable that Stonehenge would lose its World Heritage status. Following the deletion of the Liverpool – Maritime Mercantile City WHS in 2021, this would make the United Kingdom the first State Party to have two World Heritage Sites deleted.

3.28 National Highways' dismissal of the opinion of the WHC is equally bizarre and smacks of denial and desperation. Regardless of the status NH believes that the WHC should be accorded in the UK planning process, given it is within the WHC's power to seek the delisting of Stonehenge as a WHS, its opinion should be given significant weight. It is the only body which can determine whether a site is listed as a world heritage site or whether it is removed from the list. NH has failed to address its comments. For NH to also suggest that the detailed design of the scheme could smooth away any outstanding concerns the WHC or others might have²⁵ is disingenuous and contrary to the decision of the WHC which seeks a fundamental alteration. The scale of the changes required is beyond the scope of a few minor tweaks that might be incorporated within the detailed design stage. Instead, there would have to be significant changes to the project, which would require a new DCO application. In any event, NH has completely failed to acknowledge that the Secretary of State has found that the scheme would cause permanent and irreversible harm to the WHS, its setting and numerous heritage assets.

3.29 NPSNN has a substantial section (paragraphs 5.120 to 5.142) dealing with the impact of projects on the historic environment. While we cannot be certain that this will not

²⁴ UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage: World Heritage Committee, Extended 44th Session, Fuzhou China, 16 – 31 July 2021, [Decision](#), pp.152-3

²⁵ Para 1.2.12 Any Other Matters. <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010025/TR010025-002233-A303.SoM%20Response.BP5%20Any%20Other%20Matters.Redetermination-1.5.Final%2020220111.pdf>

be changed in the new version of the document, there is no evidence of a substantial change of government policy in this area. Paragraph's 5.133 and 5.134 are particularly relevant to the Secretary of State's decision in relation to projects which have negative impacts on the historic environment. Paragraph 5.133 states:

“Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm....”.

3.30 Paragraph 5.134 states:

“Where the proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal....”.

3.31 There is a clear presumption in favour of refusal where substantial harm would result. Here, there would be substantial harm to the WHS and to numerous heritage assets. This includes the physical destruction of more than 7ha of the WHS itself and also the destruction of archaeology which is demonstrably of equivalent significance to a scheduled monument (see the evidence from Professor Parker Pearson²⁶). Further, the settings of numerous heritage assets would be substantially harmed. Even where the harm is less than substantial it should be weighed against the proposal's benefits and is therefore a significant factor in the decision making. Harm to the WHS in particular, which is permanent and irreversible, must be given significant weight.

3.32 The major and permanent harm which has already been acknowledged by the Secretary of State means that, if the Secretary of State is of the view that there is a need for some scheme on the A303 in this location (which is wrong for the reasons set out below), the Secretary of State should be convinced that there is no suitable alternative to the proposal before granting permission. We address alternatives in a separate paper. In summary, there are clearly more suitable alternatives which would not cause permanent and irreparable damage to the WHS and the evidence presented by NH is fundamentally flawed in relation to this.²⁷

²⁶ Stonehenge Alliance “Response to SoM Bullet Point 1: Alternatives”, April 2022, paragraph 5.3.5

²⁷ Stonehenge Alliance “Response to SoM Bullet Point 1: Alternatives”, April 2022

4. Traffic Forecasts

4.1 National Highways sets out changes to its traffic forecasting since the Inquiry in its Transport Assessment Review²⁸. In summary, it has put back the forecasting years it has used by three years to match its latest projections of when the project will open. NH has also made some other adjustments, including:

- Using an updated Transport Appraisal Guidance databook;
- Updating their Uncertainty Log to Winter 2020; and
- Adopting the Reference Case (Scenario 1) 2018 Road Traffic Forecasts in place of the equivalent scenario in the 2015 version.

4.2 The 2018 Road Traffic Forecasts document comments that the 2018 Scenario 1 “*is broadly in line with the assumptions used in scenario 1 in RTF15 with updates to more recent data and evidence.*”²⁹ But the 2018 forecasts themselves are now 4 years out of date - 4 years which have included Brexit and Covid 19 as well as all the science, policy and appraisal developments about climate change, and current changes in taxation and living costs which are expected to cause a very significant reduction in real incomes. This is acknowledged by DfT, as shown by its letter in the Annex below which lists very substantial changes in policy and context which have already occurred since 2019. All these clearly affect the reliability of the 2018 forecasts. It is known that the DfT is working to produce revised traffic forecasts as quickly as it can technically be done, aiming to complete this work at a speed compatible with the revision of NPSNN which is already under way. Again, this will certainly precede any possible opening of the proposed Stonehenge works.

4.3 Indeed the NPSNN anticipates that:

*“...traffic forecasts will change over time as our understanding improves and circumstances change. Updated forecasts will be published, generally on an annual basis.”*³⁰

4.4 It is therefore clear that the NPSNN is expecting up-to-date traffic forecasts and modelling to be used in making the case for a particular scheme. As shown above and

²⁸ National Highways “A303 Amesbury to Berwick Down. Statement of Matters issued 30 November 2021: Applicant’s response to the matters on which the Secretary of State invites further representations (Paragraph 2). Response to Bullet Point Four – Environmental Information Review Appendix: Transport Assessment Review” (TR010025 – 002231)

²⁹ Department for Transport “Road Traffic Forecasts 2018”, 2018, page 30

³⁰ National Policy Statement for National Networks, 2014, paragraph 2.20

below, both the forecasts and the way that they are produced and assessed has changed significantly in recent years, yet NH has barely tweaked its model.

- 4.5 National Highways produces diagrams to demonstrate that the difference between the Do Something and Do Minimum scenarios is greater 15 years after opening than presented to the inquiry. They state that:

“the increase predominantly arises from the additional traffic forecast to use the Strategic Road Network because of lower perceived Vehicle Operating Costs set out in the updated TAG Databook; without the Scheme the network constraints prevent this growth from materialising on the Scheme section of the A303.”³¹

- 4.6 This is not certain, but anyway the diagrams are not directly comparable as they relate to different forecasting years. National Highways’ forecasting approach assumes continuing background growth in traffic so that the underlying demand in the latest forecasts will contain three extra years of background growth. Current conditions, by contrast, suggest that there may be a comparable period of traffic reduction, not growth, which by the same argument would reduce the need for the Scheme. Without seeing directly comparable data, we cannot assess the relative impacts of changes in assumptions and changes to the forecasting years.

- 4.7 The Stonehenge Alliance has two principal areas of concern in relation to the traffic forecasts. Firstly, National Highways’ approach of developing a single Central Case set of forecasts, with a relatively narrow range of uncertainty around it, was always unreliable, and since 2018 has not been the approach advised by DfT. Secondly, COVID-19 has led to major changes in travel behaviour and these have not been incorporated in the forecasts.

- 4.8 The Stonehenge Alliance provided a detailed critique of the traffic forecasts presented to the Inquiry in Section 5.7 of our Written Representation on Transport Planning and Economic issues³². This was put forward orally at Issue Specific Hearing 6 and is summarised below as follows:

“The traffic forecasts made consist of a core ‘most likely’ trajectory with a narrow fan of alternative forecasts as a sensitivity test. The ‘most likely’ figure is actually significantly higher than has been observed in recent years. The Department for Transport National Traffic Forecasts had adopted the same approach until 2013, but following a long history of overestimates changed the format in 2015: since

³¹ National Highways “A303 Amesbury to Berwick Down. Statement of Matters issued 30 November 2021: Applicant’s response to the matters on which the Secretary of State invites further representations (Paragraph 2). Response to Bullet Point Four – Environmental Information Review Appendix: Transport Assessment Review”, paragraph 4.2.2, page 6 ([TR010025 – 002231](#))

³² Stonehenge Alliance “Deadline 2 – Written Representation on Transport Planning and Economics Issues”, TR010025-00758 ([REP2-129](#))

then there has been no ‘most likely’ forecast but a number of different scenarios, with a very wide range between the lowest (very little traffic growth) and the highest (full scale, low cost, electrification). Last year Patricia Hayes, DfT Director of Roads, said that the same would be applied to specific schemes as well: ‘more emphasis will be given to appraising schemes against different scenario tests, reflecting the DfT’s move to scenario forecasts for road traffic’ (Local Transport Today, 17.12.2018). This has not been done, possibly because it is not (yet) strictly required in WebTAG, though it is clearly the official intention. Not to do so will tend to overestimate the estimated benefit against a low traffic growth future, or overestimate the speeds in a high traffic growth future. In both cases the forecasts actually used in the appraisal will be unreliable.”³³

- 4.9 In verbal answers to questions, Patricia Hayes³⁴ specifically mentioned Stonehenge as a case in which such scenarios would be considered. In the event documents submitted to the Examination did not include such scenarios, without explanation.
- 4.10 It is essential to understand how DfT scenarios work, as NH does not fully follow the same approach. The 2018 Traffic Forecasts identified seven different scenarios for the future and did **not** treat Scenario 1 as a ‘most probable’ future in the way NH has chosen to interpret it. Scenario 1 is based on the official thinking on population and economic growth trends, as they were considered at the time, and an assumption that a longer-term decline in trip rates observed in preceding years had now been completed and would not be extended into the future. Scenarios 2 to 5 were variants to allow for the possibility that national expectations on economic growth and population might be wrong. This is sensible since DfT attributed most of its tendency to overestimate traffic growth to tendencies for population and economic growth, both important input assumptions, to be overestimated.
- 4.11 It should be noted that, even before the outbreak of war in Ukraine, fuel prices were significantly higher than assumed in Scenario 3 (Low GDP Growth, High Fuel Prices), providing further evidence that the scenarios are far from extreme. Scenario 6, by contrast, took the same assumptions on economy and population, but allowed for the possibility that the already observed longer term downward trend in trip rates might continue. (This was supported by some research work that DfT had commissioned suggesting that there was a long-term continuing downward trend in young people’s

³³ Stonehenge Alliance, “Summary of Oral Representations made at Issue Specific Hearing 6: Traffic and Transport”, pages 2 & 3, in “Deadline 4 Submission – Summaries of Oral Submissions made at Issue Specific Hearings between 5 and 14 June 2019” TR010025-001193 ([REP4-095](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010025/TR010025-001193-Stonehenge%20Alliance.%20Summaries%20of%20oral%20submissions%20made%20at%20Issue%20Specific%20Hearings_Redacted.pdf))
https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010025/TR010025-001193-Stonehenge%20Alliance.%20Summaries%20of%20oral%20submissions%20made%20at%20Issue%20Specific%20Hearings_Redacted.pdf

³⁴ Said at a Local Transport Today conference, attended by Dr Phil Goodwin

car use, which was slowly filtering through the whole population as people got older³⁵). This scenario showed significantly low rates of traffic growth in the future.

- 4.12 Finally, Scenario 7 was devised to consider what would happen if electrification of cars proceeded faster, reducing the cost of car travel. In this case congestion was forecast to get considerably worse. The discussion about what would follow from that for transport and taxation policy is still continuing. There is no firm outcome yet of those discussions; the Parliamentary Select Committee on Transport has recommended that the loss in tax revenue from transport should be made up by a form of road user charge, which, if it happened, would see a reduction in carbon emissions and car use, and buoyant tax revenue.
- 4.13 The outcome of all this is clearly uncertain, and DfT recommends an ‘uncertainty toolkit’ for appraisal which would test projects and programmes against 5 significantly differing futures.
- 4.14 Against this background, we note also that DEFRA³⁶ has recommended that for appraisal, two different scenarios for climate change should be tested: one, what would happen if we faced a 2°C increase in global average temperature, and the other assuming a 4°C increase. The Office for Budget Responsibility³⁷ has considered the broad economic and social implications of such futures, and notes that they would imply not only a major economic threat to living standards and productive capacity, but also global disruption with even sharper tensions and conflicts – challenges to Budget Responsibility far greater than the typical uncertainties that affect ‘business as usual’ forecasts.
- 4.15 When we look at the NH forecasts, it selects only one major change from its previous calculations, namely the one that relates to an increase in car use and congestion caused by much cheaper electrically powered vehicles (which NH reports increases the value of the time savings that it says would result from expanding the road capacity), but with no adjustments at all to account for the policies listed above to reduce car use (which, by the same argument, would reduce the congestion caused by excessive traffic and therefore the value of time savings).
- 4.16 There are thus no forecasting scenarios allowing declared Government policies and commitments to be successful, and no scenarios investigating the effects on traffic of

³⁵ Chatterjee K et al, Young Person’s Travel – What’s Changed and Why? (January 2018)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673176/young-peoples-travel-whats-changed.pdf

³⁶ DEFRA (2020) Accounting for the effects of climate change
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/934339/Accounting_for_the_Effects_Of_Climate_Change_-_Supplementary_Green_Book_...pdf

³⁷ Office for Budget Responsibility (2021) Fiscal Risks Report
https://obr.uk/docs/dlm_uploads/Fiscal_risks_report_July_2021.pdf

current trends in climate change. The scenario chosen as the base for appraisal is one where: climate change is not a problem; climate-oriented policies have no significant effect; and there is far more traffic as a result of a pronounced growth in traffic due to much cheaper running costs of electric vehicles, unmoderated by either charging policy or any other instruments. We suggest this combination is inherently implausible, but even if it is allowed as a speculative possibility, it is not in accord with current Treasury, Defra, BEIS and DfT guidance on how to handle an uncertain future. NH only considers a future on which it asserts it can recommend approval of the scheme. Accordingly, our previous criticisms remain valid and have been further strengthened by policy changes since the Examination.

4.17 They have been strengthened even further by the changes in travel behaviour that have occurred since the start of the COVID-19 pandemic. COVID-19 has led to a number of major changes to travel patterns over the last two years. Some of these are likely to be short term and to be reversed as the pandemic retreats, while others represent the acceleration of long-term changes that were already evident. The following changes are particularly significant:

- *Increased remote working, especially working from home.* There were already signs that there was an increasing trend towards working remotely, at least for part of the time, before the pandemic. This has accelerated and become the norm for many more workers.
- *Reduction in business travel.* The pandemic led to a major shift from face to face to on-line business meetings. As a result of the increased demand, technology companies have enhanced their products and people have become more familiar with making best use of it. While there is likely to be some reversion to in-person meetings, it seems unlikely that the volume of business travel will reach its pre-COVID level.
- *Switch to on-line shopping.* The pandemic led to a rapid acceleration in the switch to on-line shopping. This accelerated a trend that was already evident and is unlikely to be fully reversed. The implication of this is an overall reduction in shopping-related trips, but with an increase in the number of delivery vans partially offsetting the lower number of car trips.
- *An increase in holidays in the UK at the expense of foreign travel.* During the pandemic, foreign travel became difficult and subject to rapidly changing restrictions. As a result, many people decided to holiday in the UK. As restrictions ease in the UK and in most of the major holiday destinations favoured by British citizens, this is likely to be reversed over the next two to three years.

- *A switch from public to private transport.* Public health messaging during the height of the pandemic led to a marked shift away from using public transport. As the threat of COVID has retreated the messaging has changed and public transport usage is recovering, especially for leisure travel. There is a strong incentive on government to encourage increased public transport use, both because of the environmental benefits and because of the financial cost of supporting public transport operators.

4.18 New research by CREDS³⁸ confirms the impact of these factors and shows that overall car use remained below pre-pandemic levels as the economy recovered. There has been a reduction in the sale of new cars, which is not surprising given production constraints, but also in used cars, which might be expected to increase to compensate. Overall, there has been a small reduction in car ownership.

4.19 Clearly the net effects of the above changes are uncertain and the overall conclusion is that the pandemic has made future trends in travel behaviour even more uncertain than before. This makes the importance of a scenario-based approach to travel demand forecasting even more important, while the scenarios themselves may need to be revised and expanded. The scenarios that are considered cannot be confined to the assumption of ‘business as usual but with cheaper car use therefore more car traffic’. There is a prima facie case that scenarios with less car use are more probable, either because of the economic disruption due to unhalted climate change, or because of the success of initiatives to counter climate change by encouraging more sustainable travel and living patterns. (Clearly these two are not equivalent, one being very unpleasant and the other being potentially a significant improvement in the quality of life, so they represent two different scenarios, not a combined one).

4.20 Most of the discussion above is concerned with how travel demand could change in a “business as usual” scenario without any specific government interventions to encourage changes in travel behaviour. National Highways’ forecasting approach predates the development of the 6th carbon budget and more recent policy statements including the Transport Decarbonisation Strategy. As noted in paragraph 3.9, above, a 9% reduction in car travel is expected by 2035, rising to 17% by 2050, compared with the background trend. This would result in substantially less growth than forecast by National Highways, even if its forecasting approach was reliable, which it is not.

³⁸ Anable, J., Brown, L., Docherty, I. and Marsden, G. (2022) “Less is more: Changing travel in a post-pandemic society”. Centre for Research into Energy Demand Solutions

5. Business Case

5.1 NH has not published an updated Business Case for the project as part of its submission to the Secretary of State. The Stonehenge Alliance considers that this is important to the overall assessment of the project and should be provided. We are aware that NH considers that the Business Case is only relevant to the funding decisions of the Treasury and Department for Transport, and not to the decision on the Development Consent Order. This is wrong for five reasons:

1. Whatever the outcome of the current review of the NPSNN, the existing version already encourages the support of a project by a business case which will 'assess the economic, environmental and social impacts of a development' and states that the information 'will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development.' (4.5)
2. The Business Case presents the costs and many (though not all) of the impacts of the project in consistent monetary terms, thus presenting summary statistics for those impacts that can be monetised. These can then be weighed against the impacts (such as damage to historic heritage), which cannot realistically be expressed in money terms, as part of the overall assessment. This is critical to determining whether the positive impacts of the scheme outweigh the negative ones, which include its cost.
3. There is little value in approving a scheme with a poor business case, which has little chance of being funded, as this would only create ongoing uncertainty for all parties.
4. NH's argument that a revised business case is not necessary relies on the common practice at an earlier stage not to include the business case when seeking approval in principle, since a business case would not yet have been calculated and will be done for presentation to the Examining Authority.
5. NH has used 'cost' as part of its argument to dismiss some of the alternatives. It therefore must demonstrate that the business case for its proposed scheme is robust.

5.2 The business case has already been calculated and is faulty. Not to update it at this stage implicitly proposes either:

- that the same business case will be relied on - and the Secretary of State is being asked now to approve it, without change, which would constrain the independence of the new Examiners - or

- that the old one is abandoned and a completely new one will be presented for a new public examination - in which case the scope of what remains and what is abandoned must be made clear before the Secretary of State can make a decision.

5.3 The Stonehenge Alliance has argued that the Business Case presented at the Examination was very weak, subject to a high level of uncertainty and fundamentally flawed. Our views on the Business Case were set out in our Written Representation on Transport Planning and Economics Issues³⁹ and in subsequent responses to Highways England (as they then were) and should be read on conjunction with this submission. The business case is discussed further below, with reference to changes since the Examination.

5.4 In summary, the Business Case presented at the Examination⁴⁰ was as shown below:

Benefit component	£m (discounted to 2010)
Total Transport Benefits	£353
‘Cultural Heritage Benefits’	£955
Total Benefits	£1307
Total Costs*	£1206

5.5 Particular concerns expressed at the Examination included:

- 73% of the claimed benefits relate to the assumed value of removing the A303 from the view from Stonehenge. This is based on a single piece of Stated Preference research as discussed below;
- Most of the remaining claimed benefits are derived from the traffic model and therefore partly depend on the uncertain traffic growth forecasts discussed above;

³⁹ Stonehenge Alliance “Deadline 2 – Written Representation on Transport Planning and Economics Issues”, TR010025-00758 ([REP2-129](#))

⁴⁰ Stonehenge Alliance “Deadline 2 – Written Representation on Transport Planning and Economics Issues”, TR010025-00758, ([REP2-129](#)),

- In spite of these over-favourable assumptions, the Business Case is still very weak, with a Benefit: Cost ratio of only 1.08, well below the threshold that would normally be required to take the project forward.
- 5.6 In the Business Case presented to the Public Examination, it was very clear that the claimed savings in journey time resulting from the extra road capacity – normally by far the largest category of benefits in NH appraisals of its road proposals – were not nearly enough to justify the very substantial cost of the tunnels. NH reported that it had commissioned a report showing that the ‘heritage benefit’ of moving traffic away from Stonehenge would be valuable enough to make up the shortfall. So the scheme was announced as having benefits more than the cost. Clearly the ‘heritage benefits’, are absolutely essential to the business case.
- 5.7 The study which produced these ‘benefits’ was a small piece of consultancy work concluding that removing traffic from Stonehenge had ‘heritage benefits’ worth £1.3 billion, of which £1.2 billion was based on a telephone survey in which 1,159 people representing the general population said they would hypothetically, in principle, be willing to pay an average of £14.41 extra tax per year for 3 years, for the public and environmental benefit of taking traffic away from Stonehenge. This was then multiplied by the adult population of 30.4 million, a small amount added for visitors and passers-by, who were surveyed separately, and discounted back to 2010 prices to give the £955m shown.
- 5.8 As noted during the Examination, there were a number of technical weaknesses in the methodology, especially that it is not ‘Scaleable’; if the same methodology were to be applied to all sites of heritage importance in the country, it would produce answers suggesting that the population as a whole could be prepared to pay more in taxes than they actually had, which is of course untenable, but is an inherent potential outcome of this form of valuation.
- 5.9 However, the Inspectors then concluded that, far from delivering ‘heritage benefits’, the proposed tunnel would cause:
- “... Permanent, irreversible harm, critical to the outstanding universal value, would occur, affecting not only our own, but future generations.”⁴¹*
- 5.10 They advised that the scheme should be rejected. The Secretary of State agreed with key conclusions of the ExA (including the one above) as recorded in the judgment of the High Court.

⁴¹ Examining Authority’s Report, para 7.2.32 of <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/TR010025/TR010025-002181-STON%20%E2%80%93%20Final%20Recommendation%20Report.pdf>

5.11 Stonehenge WHS has dedicated and well-informed supporters, one of whom, Suzanne Keene, has been asking FOI questions about exactly how the business case will be updated – what assumptions, what methods, what conditions. The answers triggered serious concerns about this project. In the paragraphs below, we set out three of her questions, and the crucial extracts from the answers from National Highways, followed by our comments.

5.12 ***Heritage Value: Question 1: the project team say the cost benefit analysis is to be updated, does that mean there will be a new contingent valuation survey, or will it be by a more conventional analysis?***

Answer from NH: The cost benefit analysis will focus on the traffic, economic and environmental impacts of the scheme. There have been no material changes to the scheme design therefore we'll retain the existing contingent valuation study.

5.13 This almost completely misses the case for redoing the contingent valuation study, whose main underpinning has been radically undermined by the Inspectors' report and the Secretary of State's conclusion that the project would cause serious irreversible harm to the WHS. Crucially the framing of effects given to respondents did not include any possibility that there would be environmental damage at the scale concluded by the inspectors, biasing the results. The inherent problem is that the answers you get from such hypothetical methods are – as everybody who has worked in this area knows full well – very sensitive to the exact question asked. The question was predicated on the tunnel protecting Stonehenge from traffic. But the Inspectors and Secretary of State, looking at the World Heritage Site as a whole, concluded that the tunnel would actually cause damage. The proper question would then become 'and how much would you pay in extra tax for a tunnel that Inspectors concluded would cause irreversible harm to the site?' This would be an easy, swift, and low cost piece of research – using all the work done to design the original survey, changing one question, and putting it to a similar size sample. Given careful safeguards in terms of transparent scrutiny and shared control, there is no conceivable reason for not doing such a simple piece of work, other than it would come to a different answer reducing or negating the heritage benefit. 'No material changes to the scheme design' is not a relevant response.

5.14 ***Carbon Value: Q.2 - In the cost benefit analysis of the scheme, how will National Highways take account of the new appraisal values for carbon issued by BEIS in September 2021?***

Answer from NH. The current versions of the TAG and the Greenhouse Gases Workbook refer to the BEIS damage costs from 2019. We anticipate that the more recent BEIS damage costs for greenhouse gases may be incorporated in future

updates of TAG and Greenhouse Gases Workbooks, for future schemes to then adopt in future appraisals.

- 5.15 National Highways did not plan to implement the new values for this scheme. The actual situation now is that the BEIS damage costs⁴² have been updated, and they have been included in TAG. Applying them would be extremely easy to do – it is just a matter of a simple multiplication in a spreadsheet that already exists. The more important reason for doing so is that the updated values are a large increase in the values of carbon. The new figures for 2021 are in the order of ten times higher than the figures for 2021 issued in 2018, and 3-4 times higher for 2030, all still significantly increasing year by year up to 2050. There are very likely to be further increases. The new values demonstrate acceptance that carbon has been substantially undervalued in all appraisals until now. There is simply no justification, now, for continuing to use past assumptions about the future when we can so easily replace them by present assumptions about the future.
- 5.16 Does it make a difference? We do not have access to the calculations NH has done (we request that they are published and consulted upon before the Secretary of State takes any decision on this proposal), but we comment that the estimated increase in user and operational carbon dioxide attributed to this scheme was about 2 million tonnes, valued at £87m, implying a (discounted) average value of £44 per tonne. NH also reports nearly half a million tonnes of carbon for construction works, which is not included in the 2 million tonnes above. The revised carbon prices published in September have low, medium and high versions, all increasing over time, ranging from a little over £110 a tonne CO₂e to over £815, with £347 in the middle of the medium values. Discounting carbon is a controversial question, but in this case that doesn't need to be resolved: whether you discount or not, the new values of carbon would give a total greater than the previously estimated net present value of the project, £101m, and its net present value would turn negative - even with the flawed heritage benefit included, and the increased construction cost excluded. So the indications are that it would make a substantial difference. The only reason for reluctance to use the new values would be that difference. The Secretary of State should ensure that this highly material information is provided prior to any decision being made.
- 5.17 ***Climate Change: Q.3 - And the Supplementary Green Book guidance issued by DEFRA in November 2020?***

Answer from NH. Neither DMRB nor TAG require a financial valuation or cost benefit analysis of these climate impacts. This will therefore not be included as a monetised

⁴² BEIS (September 2021) Valuation of greenhouse gas emissions: for policy appraisal and evaluation <https://www.gov.uk/government/publications/valuing-greenhouse-gas-emissions-in-policy-appraisal/valuation-of-greenhouse-gas-emissions-for-policy-appraisal-and-evaluation>

impact in the updated cost benefit analysis of the scheme. However, all of the relevant environmental impacts will be considered within the qualitative non-monetised assessment as part of the appraisal summary table.

- 5.18 It is worth highlighting that when it comes to carbon emissions, NH wants to have its cake and to eat it. In the first instance it is saying that the cost of carbon is not a consideration, but in any case carbon impacts will be considered under the assessment of environmental impacts. Yet when it comes to examine the carbon a scheme will generate or consume, it dismisses this carbon as insignificant without any evidence to substantiate its position. The upshot being that NH seems to believe the carbon impact of the scheme has no relevance whatsoever despite the fact that we are in a climate emergency as declared by Parliament.
- 5.19 It is true that the 2020 DEFRA⁴³ recommendations do not require (or exclude) a ‘financial valuation or cost benefit analysis of these climate impacts’. What they say is that appraisal of policies and projects should include (‘at least’) two different climate scenarios in baseline forecasts. The two scenarios DEFRA recommend are one baseline that would be consistent with a 2°C global temperature rise, and the other with a 4°C global temperature rise. The current baseline calculations assume no global temperature rise at all, not even the 1.5°C rise which is our present target. This approach has been less and less tenable year by year. The global effects of climate change and the local effects of national policies to combat it are both now recognised as much more important.
- 5.20 In practice, this now means that a new set of factors will have to be considered. Climate change at some level will occur, and this will affect the predicted traffic growth on which all proposed road schemes have been based. Climate affects risk registers, the patterns of national and international trade, supply chains, flash floods, heatwaves, water and sewage security, run-off, shortages, price changes, available incomes for cars, holidays and everything else, and the attractiveness of different locations.
- 5.21 A preliminary version of such discussion was indeed given in the original Stonehenge Environmental Statement, October 2018, based on aging guidelines and regulations and risk assessments derived from the period 2010 to 2015, under the heading of ‘climate resilience’. It concluded that

⁴³DEFRA, “Accounting for the Effects of Climate Change”, Supplementary Green Book Guidance. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/934339/Accounting_for_the_Effects_Of_Climate_Change_-_Supplementary_Green_Book_...pdf

*“none of the potential impacts would be significant (and are therefore classed as non-significant)”.*⁴⁴

- 5.22 That conclusion would seem difficult to defend in the state of knowledge then. It is not possible to assert it with any confidence now.
- 5.23 In principle the ‘qualitative, non-monetised assessment’ promised could be more substantial. In a new appraisal the Appraisal Summary Table could, for example, state firmly that this comforting picture is no longer one that represents current risk levels, the probabilities of drastic weather impacts are very much greater, the probability of traffic growth on the forecast scale very much less – even before the traffic-reducing elements of the decarbonisation strategy itself start to take effect – and therefore the traffic forecasts and operating conditions previously assumed can no longer be relied on. The potential impacts **would** be significant.
- 5.24 Apart from the issues raised by these questions it should be recognised that, since the Examination, the planned opening date for the project has been put back by three years. Construction price inflation will mean that the costs will now be higher than presented at the Inquiry (even when expressed in 2010 prices), which can be stated with much greater confidence than the potential off-setting factor of increased benefits arising from the unreliable assumption of an inexorable increase in traffic. As noted above, the traffic growth forecasting approach is not robust.
- 5.25 As shown above, a number of changes since the Examination fundamentally undermine the already weak Business Case for the project. It is therefore essential that an updated Business Case is provided, together with NH’s detailed justification for it.

6. Project and Programme

- 6.1 National Highways has assessed the A303 Stonehenge project as a freestanding scheme, rather than as a component of a programme to upgrade the whole A303/A358 corridor between the M3 and M5 to Expressway standard. Its traffic forecasting assumes that two other sections of the corridor will be upgraded in parallel with or before the Stonehenge section opens: A303 Sparkford to Ilchester and A358 Taunton to Southfields. This leaves significant sections of single carriageway west of Stonehenge.
- 6.2 However in its policy justification for the project NH places considerable weight on the assertion that it is part of a programme to upgrade the whole A303 corridor, stating that ***“the Government’s aim, announced in the Road Investment Strategy for the***

⁴⁴ [APP-052](#), paragraph 14.9.14

2015/16 to 2019 Road Period (“RIS1”) is to upgrade all remaining single carriageway sections of the A303 between the M3 and the A358 to create a high quality dual carriageway route to the South West on which mile-a-minute journeys are the norm.⁴⁵ NH notes that this has been carried forward into RIS2 and further upgrades to the A303 are included in a list of projects that are part of the RIS3 pipeline⁴⁶. This is helpful to National Highways by providing a strategic justification for the project. However, this is not how it has been assessed.

- 6.3 If the scheme is regarded as a free-standing project, its effects, in catering for the traffic growth that National Highways claims will occur, will be limited by the constraints imposed by the remaining single carriageway sections of the route. In practice it would simply result in vehicles getting to the back of the next queue more quickly. The increase in traffic forecast to use the A303 (both induced demand and vehicles shifting from other routes) would lead to worse congestion on the remaining single carriageway sections. This might later be helpful to National Highways in improving the business case for upgrading other sections, where the justification for doing so is very weak, but considered as a scheme on its own this will reduce its benefits.
- 6.4 Alternatively, if it is considered to be part of an overall programme, the combined impacts of the programme will be much greater than assessed. The amount of induced traffic will be higher with consequent impacts on carbon emissions, making National Highways’ assertion that the project does not impact on the achievement of the carbon reductions in the 6th Carbon Budget even less tenable. Such effects must be assessed cumulatively.
- 6.5 For the strategic justification for the programme as a whole, National Highways relies on the outputs of the 2002 SWARMMS study⁴⁷ and the 2015 CH2M Hill Feasibility Study⁴⁸ for the route, both of which recommended dualling throughout. For SWARMMS this was seen as part of a multi-modal package which also included enhancements to the parallel rail routes – most of which have not occurred. In any case SWARMMS was carried out in a very different policy environment, where the urgent need to reduce carbon emissions was much less well understood than it is today, and carbon considerations were not considered material to the appraisal. In addition, there has been a change in the policy of the Welsh Government about its own road programme, whose projects have been paused and are now subject to an

⁴⁵ National Highways “A303 Amesbury to Berwick Down. Statement of Matters issued 30 November 2021: Applicant’s response to the matters on which the Secretary of State invites further representations (Paragraph 2). Response to Bullet Point Two - Policy” ([TR010025 – 002236](#)), Table 1, page 4

⁴⁶ Highways England “Delivery Plan 2020 – 2025”, Annex D, 2020

⁴⁷ Government Office for the South West, “London to South West and South Wales Multi-Modal Study: SWARMMS Final Report”, 2002

⁴⁸ CH2M Hill, “A303/A30/A358 Feasibility Study”, Highways Agency, 2015

independent review. Taken together, the 2002 SWARMMS study is no longer a valid base for a strategic justification. The 2015 feasibility study did not seriously consider alternatives to road building and there has also been a further significant shift in policy since then, as discussed in Section 3 above.

- 6.6 It is clear that a business case and Strategic Environmental Assessment should have been carried out for the programme as a whole to give a more informed position on the full impact of upgrading the A303 and A358. This should have been in addition to the specific business case and Environmental Assessment for the A303 Stonehenge project, including cumulative impacts. Without an assessment of the cumulative impacts, the full impacts arising from the scheme cannot be assessed. We consider that this is essential information and that the DCO cannot reasonably be approved without it.

7. Summary and Conclusions

- 7.1 There have been substantial changes to Government policy since the Development Consent Order (DCO) application was made, including further important changes in policy since the Examination of the project concluded. These changes include the declaration of a Climate Emergency by the UK Parliament (during the Examination), the setting of the 6th carbon budget following advice from the Climate Change Committee, the publication of the Government's Net Zero Strategy and the De-Carbonising Transport White Paper. The Government has also committed to a 68% cut in carbon emissions by 2030 (on 1990 levels) as part of its National Determined Contribution for the Paris Agreement to limit global warming to well below 2 degrees and preferably 1.5 degrees Celsius. This represents achieving much deeper cuts than set out in the 5th carbon budget. These changes have not yet been resulted in a formal new version of the National Policy Statement for National Networks (NPSNN), which is currently under review, as the Government has recognised that it needs revision. However, the changes in policy are already in place, and not contingent on a revised NPSNN.
- 7.2 Transport is now the largest single carbon emitting sector of the economy and radical measures are needed to reduce emissions to achieve net zero. In addition to a switch to electric vehicles, the Government policy documents make it clear that car use will need to fall, by a shift of some car trips to improved alternatives (bus, rail, and active travel) both in towns and long distance, increased vehicle occupancy, shifts in destinations including a proportion of working from home, and improved land-use planning. The A303 Stonehenge project would *increase* car use and emissions, which is directly contrary to policy. NH claims the increase in carbon from this project alone is not sufficient to jeopardise the achievement of the UK's carbon targets. However, any increase in emissions makes the targets harder to achieve and this scheme is only one

of many in Road Investment Strategy 2, so the cumulative effect needs to be recognised. This weighs heavily against the proposal.

- 7.3 The World Heritage Committee has expressed its serious concerns about the proposed scheme's impact on the Stonehenge World Heritage Site and it has indicated that its construction would lead to the removal of the site from the World Heritage list. This would make the United Kingdom the first country ever to have two sites de-listed.
- 7.4 Contrary to the position of NH, both the Examining Authority and the Secretary of State found that the project would have a profoundly negative impact on the historic heritage of the World Heritage Site and therefore alternatives to the current project should be considered. In the recent Judicial Review, Mr. Justice Holgate found that the Secretary of State acted unlawfully in not considering alternatives. The fact is that there are credible alternatives to the proposal as set out in our paper on alternatives. The evidence presented by NH on this issue is fundamentally flawed.
- 7.5 In any event, the heritage harm presented by the proposal has in fact been underestimated by the Secretary of State as recent evidence demonstrates. That harm is not outweighed by the public benefits of the proposal.
- 7.5 NH's approach to travel demand forecasting based on developing a single Central Case set of forecasts, with a relatively narrow range of uncertainty around it, was always unreliable. Since 2018 the Department for Transport (DfT) has adopted an approach based on examining the impact of a wider range of plausible scenarios and DfT recommends an 'uncertainty toolkit' for appraisal which would test projects and programmes against five significantly different futures. COVID-19 has resulted in major changes in travel behaviour. While some of these may be temporary, others represent the acceleration of trends (for example in home working and on-line shopping), which were already apparent. This only serves to increase the level of uncertainty about the forecasts and increases the likelihood that NH's projections are a significant over-estimate. In addition, government policy is now to take action to reduce traffic levels below the levels which had been forecast as a 'business as usual' scenario, though such a concept is now less valid. The need case for the scheme is weak.
- 7.6 NH's business case was always highly dependent on the alleged value of cultural heritage benefits due to the project, since the transport benefits claimed for the project are very much less than the construction costs. Given that both the Examining Authority and the Secretary of State consider that the project would have a *negative* impact on cultural heritage it is not plausible to incorporate these alleged benefits. It is also important to note that the valuation of carbon emissions has increased greatly since the Examination and the delay to construction will lead to higher costs (above the level of general inflation). All these factors will have made an already weak

business case much weaker. It is not acceptable that NH has not – so far – been willing to publish an updated business case.

- 7.7 The A303 Stonehenge project is part of a programme to upgrade the A303/A358 route between the M3 and M5 motorways to an Expressway standard. This proposal dates back to the recommendations of the SWARMMS study, which reported in 2002 (almost 20 years ago) when the policy environment was very different. NH significantly relies on this programme to justify the need for the project but have not produced either a business case or a Strategic Environmental Assessment for the programme as a whole. It should be recognised that the combined impacts of the programme will be much greater than the current assessment, which considers the Stonehenge section in isolation. Notably, the amount of induced traffic will be higher with consequent impacts on carbon emissions, making NH's assertion that the project does not impact on the achievement of the carbon reductions in the 6th Carbon Budget even less tenable.
- 7.8 The proposed project is so flawed, and its negative impacts are so great, that the Secretary of State should refuse the Development Consent Order. This is due to a failure to take account of and assess the scheme against the latest Government policies. Also, the negative impacts of the proposal outweigh its benefits. DfT officials, working with relevant agencies including NH, should be requested to bring forward alternative solutions to address transport problems in the London to South West Peninsula corridor.
- 7.9 If the Secretary of State is unwilling to reject the DCO at this stage, the Application should be referred back to the Infrastructure Planning Inspectorate for further Examination, with a brief to engage fully with those who have made a critique of the technical, economic, environmental, heritage and logical underpinning of NH's case in the light of the major changes that have occurred since 2019, and to properly consider alternatives.

Annex A

Copy letter from DfT to Sub-national transport bodies, 18.1.2022, giving its list of Government policy changes since 2019 which they are requested to consider in relation to reviewing the Major Road Network (MRN) / Large Local Major (LLM) programme.

We consider that this confirms our assessment that these policy changes are real and relevant to road appraisals. They should also be applied to NH schemes for the Strategic Road Network.



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STB – by e-mail

18th January 2022

Dear xxx,

I am writing to set out the position on the Major Road Network (MRN) / Large Local Major (LLM) programme following the Spending Review. As with many areas, the SR has challenged Ministers to make choices and to focus on key departmental priorities. As a result, it is likely that we will not have sufficient funding to continue to fund all the schemes currently in the programme to the current scale or timing. In addition, since the programme was set up in 2019 there have been changes to Government policy around transport investment, analytical requirements especially on carbon impacts, the impact of new forecasts and of course the effects of Covid on delivery and future demand. It is therefore right that we now take the opportunity to review the programme. I am writing to all Sub-National Transport Bodies (STBs) to seek your help in undertaking this review.

As a first step we would like to give all scheme promoters and the relevant STBs the option to reconsider the schemes in the current programme. Certain schemes may no longer be a priority because they have increased in cost, cannot be progressed in a timely fashion or no longer fit with the local authority's latest transport objectives.

Second, we ask that all local authorities (LAs) and STBs consider whether schemes in the programme will meet either the original objectives of the MRN programme which are:

- Reducing congestion
- Supporting economic growth and rebalancing
- Supporting housing delivery
- Supporting all road users
- Supporting the Strategic Road Network

or more recent, wider objectives of Government transport investment. These include:

- Strategic case – does the scheme still meet the objectives of the MRN programme and/or the latest objectives/policies of the LA or STB?
- Value for money (VfM) – as a result of recent changes to Transport Analysis Guidance and other issues, is the scheme likely to be low or poor VfM?
- Timely progress – what progress has been made on the scheme since it was added to the programme in 2019 and will the scheme be ready to start construction by the end of the forthcoming Spending Review period i.e. March 2025
- Local support – is the scheme actively supported by the local MP(s) and others in the wider community?

In addition, the importance of decarbonisation has increased since May 2019 so consideration of whether the scheme is likely to make carbon worse and lead to a lower VfM, especially now the cost of carbon has been increased substantially, should also be a factor in your reconsideration. Active travel and bus improvements are also issues that

have grown in importance and any opportunities to promote these in major schemes should be reflected, where possible.

Given your role in the original development of the programme, I would be grateful if you could co-ordinate within your area a response to this request based on the issues and questions above and return to the Department by Tuesday 1st March.

Any LA choosing to withdraw a scheme will not be penalised in any future funding rounds . We are also conducting our review and Ministers reserve the right to consider the status of all schemes in the programme against overall programme affordability. The starting point for the review is that any scheme that already has approval at Outline Business Case stage will not be considered for removal unless the LA/STB decides otherwise or unless the case for the scheme changes significantly.

We are writing in similar terms to all local authorities with schemes currently in the programme.

We would be happy to discuss.

A handwritten signature in black ink that reads "Philip Andrews". The signature is written in a cursive style with a large, sweeping flourish at the end.

Philip Andrews
Head of Road Investment, Policy and Pipeline Development