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

Scheme Reference: TR010025

Response to Highways England's Document "8.49-Comments on any further Information Requested by the ExA and Received at Deadline 7", REP 8-013, Inquiry Reference TR010025-001616

Sections on Transportation

For

The Stonehenge Alliance (Reference No. 2001870)

By

Dr. Simon Temple

1. Overview

1.1 This document provides The Stonehenge Alliance's response to Highways England's document "8.49 – Comments on any Further Information Requested by the ExA and received at Deadline 7" (Rep 8-013). We focus on responding to Section 6 of the document, which comments on The Stonehenge Alliance's submissions. This document deals with transportation planning and transport economics issues. The Stonehenge Alliance is responding separately on other matters. The absence of a comment on a particular issue does not imply that we agree with Highways England on this point.

1.2 Highways England's document is set out in tabular form with a paragraph number, a summary of the point on which they are commenting and then their comment. In this document, we quote their paragraph number to which we are responding, a brief summary of the subject matter and then our response. For clarity, this document should be read alongside Highways England's submission.

2. Response to Section 6.1 – Comments on Second Written Question Responses

2.1 Paragraph 6.1.1 Uncertainty in Traffic Forecasts

The Stonehenge Alliance stands by the statements we made in REP 7-048, some of which are quoted by Highways England. They assert that their REP 3-013 has "explained that, based on evidence in Highways England's Post-Opening Project Evaluation (POPE) there is no evidence of consistent bias or overstatement in trunk road traffic forecasts." In fact, Paragraph 16.4.70 of REP 3-013 concedes that while "59% of forecasts reviewed were within 15% of the observed flows post-opening, there was a tendency over the period to overstate rather than understate traffic volumes." We note that Table 4-7 of Highways England's 2015 POPE report[1] shows that outturn flows were less than forecast in 64% of projects, and the discrepancy was more than 15% for 27% of schemes. For road widening schemes, the discrepancy is greater, with outturn below forecast in 83% of projects and by more than 15% in one third of schemes. It should be noted that even a 15% discrepancy is significant given that this relates to volumes one or five years after opening. Highways England attribute the discrepancy between forecast and outturn traffic volumes to the economic downturn. While this is a convenient excuse, inadequacies in the forecasting methodology may be, at least partly, responsible. It is also worth noting that the document also states (on page 32) that "major scheme appraisals have generally assumed traffic flows without the scheme to be higher than have actually occurred". The implication of this is that the extent of the problem that the project is intended to address has been over-stated.

[1] Highways England "Post Opening Project Evaluation of Major Schemes Meta-Analysis 2015"

Much of the rest of Highways England's response is a defence of their mechanistic application of WebTAG guidance. As there is a disconnect between this guidance and DfT's ambition to move to a scenario-based approach in scheme assessment, this is of limited relevance to the issue of whether the traffic forecasts are subject to greater uncertainty than Highways England assume. As DfT note "while uncertainty in road traffic forecasting has always existed, it is perhaps now more uncertain than ever given the changes that are being experienced in the system and the changes that could lie ahead."[2]

Highways England assert that all the scenarios tested by DfT produce growth forecasts within the range that they tested, with the exception of Scenario 7 (which assumes a rapid transition to zero emission vehicles). This is not correct. Scenario 6, which assumes that the recent trend of declining car trip rates continues, shows much lower growth than Scenario 3, which Highways England state is consistent with their low growth scenario. This is clearly illustrated in Figure 25 of Road Traffic Forecasts 2018.

Even within the narrow range tested by Highways England, the transport user benefits are reduced by £64 million in the Low Growth scenario. It should be noted that this excludes any impact on the claimed reliability benefits, which would also reduce as there would be less unreliability in the Do Minimum scenario. Even ignoring this, the impact would be to reduce the already low net benefits of the project from £102 million to £38 million and the Benefit: Cost Ratio from 1.08 to 1.03. Clearly even a small increase in cost or further reduction in benefits would be sufficient to make the monetised costs exceed the benefits. As we argue elsewhere there is significant uncertainty, and potential bias, in Highways England's estimates, increasing the likelihood of the true Benefit: Cost ratio being less than 1.0. This, of course, excludes the non-monetised negative impacts of the project.

2.2 Paragraph 6.1.2 Need for Project if Traffic Growth Does Not Occur

Highways England deny that they assert that the project is needed irrespective of the level of future traffic growth. However they state in REP 6-032 "The conclusions of the assessment are not sensitive to the Stonehenge Alliance's concerns about future traffic growth and congestion on the M3."[3] It is hard to see how these statements are consistent with each other.

As we note above, the already weak economic case for the scheme would come close to being negative at the low end of the narrow range of forecasts that Highways England have adopted and would become even poorer if traffic levels are lower.

[2] Department for Transport, "Road Traffic Forecasts 2018", Paragraph 3.1
[3] REP 6-032 response to ExA question Tr 2.1, paragraph 5

Irrespective of the economic case, the Stonehenge Alliance argued in REP 2-129 that the strategic case for intervention is weak even based on Highways England's Central Case forecasts. Clearly, if traffic growth is lower, the case would be wreaker still.

2.3 Paragraphs 6.1.3 and 6.1.4 Possible Impact of Congestion on the M3

The Stonehenge Alliance disagrees with Highways England and continues to consider that weaknesses in the modelling mean that the impact of future congestion on the M3 is not fully assessed. This could have a significant impact on traffic using the A303 at Stonehenge and therefore on the case for the project. Our position on this issue is set out in detail in REP 5-021 and REP 8-054.

2.4 Paragraph 6.1.5 Use of Trafficmaster Data

The Stonehenge Alliance continues to be concerned that the Trafficmaster data has been presented to the Inquiry in a way which starts from an unrealistic baseline – in effect free flow conditions – and therefore exaggerates the alleged need for the project. We also think that providing additional information would have promoted informed debate, as noted repeatedly. As this would have been easy to provide, we are concerned that Highways England's reluctance to release it may be because it would not be helpful to their case.

2.5 Paragraphs 6.1.6 and 6.1.7 Monetisation of the Alleged Cultural Heritage Benefits

As we have set out in detail elsewhere (REP 5-021, REP 7-048 and REP 8-054) , the Stonehenge Alliance strongly disagrees with Highways England's position that the monetisation of the alleged cultural heritage benefits is not relevant to the Examining Authority's assessment of whether the negative impacts of the project exceed its benefits. We note that they have not sought to respond to our specific point that Highways England wish the Examining Authority to take account of some monetised social welfare benefits, including non-business travel time savings, but not the alleged social welfare benefits assessed in the cultural heritage survey. In our view, this position is illogical, inconsistent with the economic theory that underpins the Treasury Green Book and out of line with the requirements of the Planning Act.

As Highways England is well aware, our position is not – as they appear to allege – that the assessment should be done solely 'by numbers'. However the validity, or otherwise, of the numerical analysis is highly relevant to the Examining Authority's decision making.

3. Response to Section 6.2 – Comments on Deadline 4 Comments (REP5-003)

3.1 Paragraph 6.2.10 Calibration of Traffic Model

The Stonehenge Alliance responded to Highways England's totally inadequate explanation of the calibration of the Variable Demand Model (set out in REP 7-021 and repeated in REP

8-013) in our submission REP 8-054. Our comments in the latter document are repeated below for ease of reference by ExA.

The Stonehenge Alliance cannot comment on whether the Variable Demand Model has been calibrated and validated in accordance with WEBTAG Unit M2 as claimed by Highways England. This is because we have not had access to the calibration and validation report for the South West Region Traffic Model (SWTRM), and especially the variable demand modelling element of it. From the very limited information provided in Highways England's response, we understand that they are claiming that national parameters defined in guidance were found to be appropriate to the regional traffic models and that the evidence of sensitivity of these parameters is based on national not local sensitivities. From this it is hard to escape the conclusion that the *variable demand modelling* element of SWTRM was based on national, not regional or local, responses. In any case our original concern was that the model was calibrated on data for the whole of the South West rather than local data; and might not reflect the responses of potential future users of the A303. Therefore calibration at either regional or national level is a concern.

Highways England stress that they have complied with the guidance in WEBTAG Unit M2. However we note that this document states:

a) "Variable demand models should be **calibrated on local data**, to reflect the local strengths of the choice mechanisms, or where this is not possible; **the illustrative parameter values presented in this unit may be used**" (Para. 1.3.1, DfT emphasis). It appears that the "illustrative" values have been used by Highways England, although they have provided no evidence that using local values was "not possible".
b) "No matter how carefully the model has been constructed and coded, if the parameter values are wrong the appraisal will be wrong" (Para. 5.6.2); "locally calibrated parameters should be used wherever possible" (Para. 5.6.3). We agree with both these statements.
c) "The [illustrative] parameter values for main mode choice and destination choice have been derived from "Multi-Modal Data Provision" by MVA, dated June 2005. Information was also obtained from Rand Europe PRISM model of the West Midlands…….These illustrative parameter values represent the current best estimates but are necessarily uncertain" (Para. 5.6.4). We agree that they are uncertain but they are also dated. The models assessed by MVA for their 2005 report must have been calibrated prior to their study, based on data collected even earlier. Accordingly they do not reflect the important changes in travel behaviour over the past 15 years, as discussed in our original Written Representation [REP 2-129].

We also note that the illustrative parameter values for main mode choice and destination choice are based on a small number of studies, as shown in Tables 5.1 and 5.2 of Unit M2.

These range from 7 studies for commuters' destination choice to only one study for mode choice for non-home based employer's business.

3.2 Paragraph 6.2.11 Comparison of 1998 and 2016 Cultural Heritage Valuations

Our understanding is that the 1998 study was undertaken by a research institute funded by the UK Government Economic and Social Research Council, and the specific research was funded by English Heritage, a government agency. Given that Highways England is a government owned company, the Stonehenge Alliance finds it hard to believe that it could not have obtained permission to deposit the 1998 study report with the Inquiry, particularly given English Heritage's position in relation to the project.

We thank Highways England for clarifying the source of the data on individual responses, although we think it is inappropriate to rely upon it since we have no access to the original data source, nor any documentation that explains precisely how it was derived.

3.3 Paragraph 6.2.12 Monetisation of Cultural Heritage Valuation

The Stonehenge Alliance is pleased that Highways England is no longer falsely claiming that we consider that the overall value of the project can be "expressed as a limited sub set of monetised benefits". However we continue to consider that the analysis is flawed as we set out in REP 2-129, REP 2-130, REP 4-055, REP 4-056 and REP 6-085.

3.4 Paragraph 6.2.25 Whole Corridor Assessment

The Stonehenge Alliance continues to believe that the inclusion of the A303 Sparkford to Ilchester and A358 Taunton to Southfields in the Core Scenario pre-judges the outcome of the planning process for these projects.

More importantly, the A303 Stonehenge project is being promoted as part of an overall programme to create a near-motorway standard expressway between the M3 and M5. While Highways England seek to downplay this when it suits their case, this ambition is clearly set out in Road Investment Strategy 1 and in the recent NAO Report. Given this, it is surprising that Highways England describe other projects in the corridor as "hypothetical" – they are clearly much more than this. In their response, Highways England argue that the impacts of the whole corridor programme are irrelevant because there is sufficient forecast spare capacity on the A303 Stonehenge route section to accommodate the growth in traffic that would result. Even if this is true, it ignores important issues that need to be considered, including the cumulative emissions impact of the programme and the capacity of the motorways at each end to accommodate the volume of additional traffic that would result. Accordingly, the Stonehenge Alliance considers that it is essential for a business case and environmental assessment to be prepared for the full corridor programme as well as for this specific project, and that the A303 Stonehenge scheme should not progress at least until this is available.

3.5 Paragraph 6.2.26 Assessment of Alternative Modes

The Stonehenge Alliance notes that Highways England have not challenged our assessment that they set an unnecessarily high and unrealistic threshold against which to assess a potential public transport alternative. Instead they argue that this is irrelevant because the maximum potential transfer to rail would not be sufficient to remove the need for intervention. However the assessment of potential transfer is flawed because:

1) Only trips with an origin and destination within 5 kilometres of a rail station were considered in-scope for switching to rail. In reality, many people are willing to drive significantly further to access an inter-city railhead. This is demonstrated by the success of stations such as Tiverton Parkway, which has a very small population within 5 kilometres and (according to Office of Rail and Road data) served 504,000 passengers in 2017/18.
2) It is based on a 2003 TRL report compiled at a time when rail patronage was only 56% of its 2017/18 level. Since 2003 there has been a marked increase in people's propensity to travel by train (and a reduction in their propensity to travel by car) and this indicates that relationships established at that time are no longer likely to be valid.

3.6 Paragraph 6.2.27 Option F010

The Stonehenge Alliance is glad that Highways England accepts that Option F010 would lead to a reduction in flows through the villages to the north of the route, contradicting the impression that they gave in previous statements that there would be an increase. It is also important to note that the Do Minimum flows are relatively low.

Highways England assert that there is no evidence to support our view that moving the A303 further from the villages would reduce the likelihood of rat running through them. However this should be self-evident as the additional distance travelled by people rat running would be greater, making this less attractive. We agree that, in principle, there might be more rat running on other roads further south if the A303 was diverted along the option F010 alignment, but in reality it is hard to see any realistic rat running opportunities given the limited road network available.

3.7 Paragraph 6.2.28 CO_2 Emissions

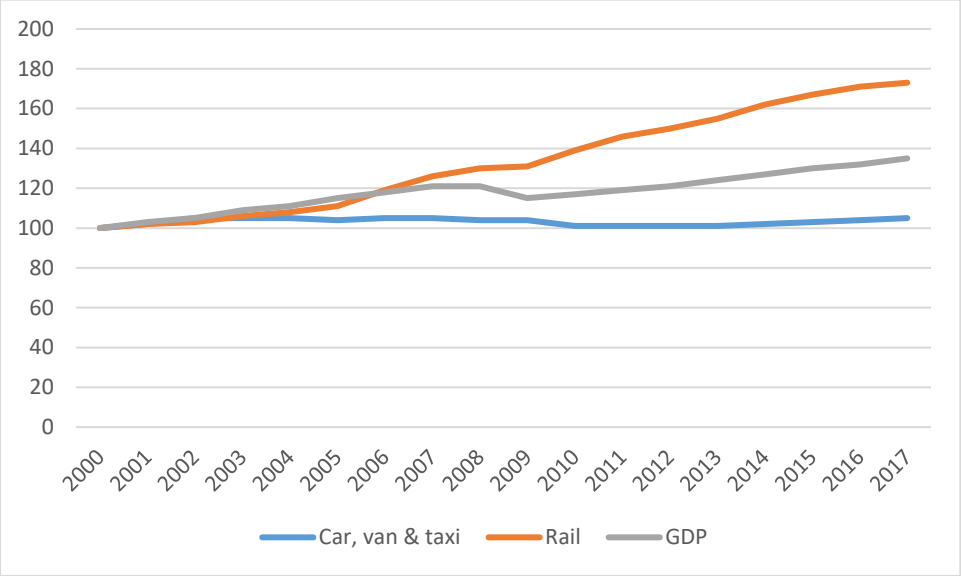
Highways England have not produced any new information in their response on this point. The Stonehenge Alliance remains convinced that it is inappropriate to approve projects that are forecast to result in increased CO_2 emissions, especially since Parliament declared a Climate Emergency. We also note that Highways England have only assessed the impacts from the A303 Stonehenge project and not the cumulative effect of the overall A303

programme to create a continuous Expressway between the M3 and M5, which will inevitably be much greater.

3.8 Paragraph 6.2.29 Traffic Growth

The Stonehenge Alliance continues to hold the view that there is increasing evidence that the long term growth in road traffic has largely stalled and the apparent linkage between economic and traffic growth has been broken. The evidence to support this is set out in REP 2-129 and Figure 2 from this document is reproduced below.

Passenger Travel Trends and Economic Growth since 2000



This throws considerable doubt on to the validity of future traffic growth forecasts and makes them highly uncertain, as discussed in Paragraph 2.1 above.

In relation to the specific points raised by Highways England in their comments, the Stonehenge Alliance strongly supports an evidence-based approach to decision-making. Accordingly, we analysed road traffic growth over the past 20 years in REP 2-129 and this showed that road traffic levels peaked in 2004. Our subsequent discussion about changes in travel patterns used this as a starting point, and we pointed out the significant difference between using 2000 and 2004 as a starting point for analysing rural A road growth in REP 4-056. We did not assert that Highways England were seeking to “exaggerate” growth, merely that the use of different base years leads to significantly different results. For the reasons set out above, we consider that 2004 is a more appropriate base year. On the substantive point that there has been some growth on rural A roads, we have acknowledged that this has occurred but it is implausible to expect that there will be a large disparity between these roads and the road network as a whole in the longer term. It is also important to note two factors that are relevant to the specific data on rural A road growth:

1) There was a change in the categorisation of A roads in the statistics in 2017, which appears to have led to some A roads being re-classified from "urban" to "rural", resulting in an exceptional increase in "rural" A road traffic and a reduction in "urban" A road traffic. This may account for about a quarter of the growth since 2004.[4]
2) As noted previously, the limited growth that has occurred in the past few years is likely to be impacted by government decisions to freeze fuel duty levels, while increasing rail fares above the CPI measure of inflation.

Highways England assert that capacity constraints on the A303 have restricted traffic growth on the route at Stonehenge. However they do not present evidence to support this supposition. We note that the average speed in their validated inter-peak model is 87 km/h as compared to 95 km/h on the fastest day (REP 6-032). There is little variation in journey time through the day, except on summer Fridays to Sundays, as shown in Figures 2-1 and 2-2 of the Case for the Scheme (APP-294). Accordingly congestion is not sufficient to have a significant effect in suppressing traffic growth outside peak times. While we acknowledge that there is significant congestion at weekends during holiday periods, these are times when other routes are also congested, so it is unlikely that conditions on A303 have significantly reduced growth.

3.9 Paragraph 6.2.30 Driver Information and Diversionary Routes

This issue arises from the position set out in paragraph 3.6.2 of REP 2-129 which is addressing the issue of how to manage blockages of the A303 in the specific context of improving network resilience. Among other measures, the Stonehenge Alliance suggested that "improved driver information systems – both on-line and through roadside signage – would assist drivers to avoid any blockages. Improved information systems would also give drivers greater certainty and might assist in reducing rat running."

The Stonehenge Alliance does not, and never has, made the "supposition that the traffic problems between Amesbury and Berwick Down might be addressed by driver information systems." Instead, our position is that the case for intervention is weak and Highways England have not put forward convincing arguments for the need for a scheme of the proposed scale.

Highways England then claim that the consequence of better driver information systems would be "more drivers diverting from the A303 [which would] increase the impacts caused by those drivers on local roads and communities." The absurdity of this argument can be demonstrated by comparing two scenarios. In both cases there is a major blockage resulting

[4] This is based on assuming that there was a one off increase in rural A road traffic equal to the reduction in urban A road traffic.

in the A303 being closed for some time between the Countess and Longbarrow roundabouts.

In Scenario 1, no driver information is provided. Long queues develop in both directions and drivers are unaware that there is a problem until they are delayed. They do not know the nature of the problem and how long it is likely to last. Inevitably a proportion of drivers will seek to avoid the problem through rat running along local roads, in turn causing problems in communities such as Shrewton. As drivers will not know of these problems, they will continue to divert exacerbating the issue.

In Scenario 2, drivers will be advised of the problem as soon as it occurs. Those close to Stonehenge may have few options and may resort to rat running, but – as a minimum – can be advised once this starts to cause knock-on problems. Those further away can be advised to use alternative A roads. In the case of the most severe incidents, some drivers could be advised to use the M4/M5 alternative. With a properly designed system, the consequence would be less rather than more impact on local communities.

The logic of Highways England's position appears to be that providing better driver information is counter-productive, which begs the question of why they are investing heavily in it elsewhere on their network.

3.10 Paragraph 6.2.31 Induced and Diverted Traffic

The Stonehenge Alliance is pleased that Highways England now agrees with our assessment of their evidence on the volume of diverted and induced traffic that would use the A303, if the project is implemented.

3.11 Paragraph 6.2.32 Capacity of connecting motorways

Highways England has misunderstood the position set out by the Stonehenge Alliance. In our view, one of several reasons for undertaking an assessment of the full programme to create an Expressway between the M3 and M5 is to determine whether the connecting motorways have the capacity to accommodate the additional traffic that would arise. We agree with Highways England that the traffic model has the *capability* to assess the impact on the M5. However this capability has not been utilised because Highways England have not undertaken a test of the impacts of the full programme. In the case of the M3, the model is based on an assumption of fixed journey times which do not vary with traffic volumes (for a specific forecasting year). This is problematic for assessing the impact of the A303 Stonehenge project in isolation (see previous submissions including REP 8-054 paragraphs 3.3 to 3.6) and even more so for the greater flows that would arise if the full programme is implemented.

3.12 Paragraph 6.2.33 Corridor Level Emissions

Highways England have deliberately misinterpreted the Stonehenge Alliance's position. As we have previously made abundantly clear, we consider there is an urgent need for a full assessment of the programme to create a continuous Expressway between the M3 and M5. One of several reasons for this is to understand the emissions impact of the programme. As we re-state in Paragraph 3.7, we remain convinced that it is inappropriate to approve projects that are forecast to result in increased CO_2 emissions, especially since Parliament declared a Climate Emergency.

3.13 Paragraph 6.2.34 Devon County Council Submission

Highways England have not provided any new information in their response on this point. However they do stress the aim of "providing a free-flowing and reliable connection between the South East and the South West", which is seen as being achieved through a continuous Expressway between the M3 and M5. Once again, this emphasises the need for a full appraisal of the whole programme including a business case and environmental assessment.