

Stonehenge road scheme doesn't add up!

Briefing on scheme's value for money



"There's no bigger advocate of tunnelling than me, but this just doesn't add up"

Briefing by

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“In September 2022, the Office for National Statistics reported a rise in the price of materials and fuel for manufacturing of 20.5% in the year to August 2022.” National Audit Office, November 2022.

Incredibly, at a time of record inflation and spiralling costs in the construction industry, National Highways has claimed that the Stonehenge Tunnel has suddenly become much better value for money. Its previous calculations were already highly suspect but its new ones are pure fantasy.

It is well known that promoters of ambitious projects tend to downplay their costs and exaggerate their benefits in order to make their schemes look good. We take a look at what National Highways has done to suggest to ministers and officials at the Department for Transport (DfT) that the scheme is feasible. [Note 1]

From no value to low value

In its 2018 application for a Development Consent Order (DCO) for the A303 Amesbury to Berwick Down (“Stonehenge road”) Scheme, National Highways applied a standard appraisal method of costs and benefits over a 60-year period. Costs included construction and maintenance, whilst benefits included expected time savings per vehicle, improved road safety and anticipated economic benefits. These calculations were then expressed in 2010 values to allow comparison between different schemes.

A standard appraisal would have resulted in costs that were over three times larger than the benefits, a net loss of **-£853m**, a Benefit Cost Ratio (BCR) of 0.29: i.e. for every £1 invested the tax payer would **lose** 71p. [See Table 1, Note 2 below]

Since the high cost was due to the tunnel ostensibly protecting the World Heritage Site (WHS), National Highways commissioned a survey to monetise the value of the heritage benefit it would bring.

The survey asked the hypothetical question: *how much would people be willing to pay in annual taxes over a three-year period to support the road scheme? Or, conversely: If the scheme was not acceptable, how much compensation would respondents be willing to accept?* Three categories of respondents were surveyed: visitors, local road users, and the general population. This last group from around the country made up the bulk of the valuation.

The results arrived at an average hypothetical tax increase of **£14.41 per year for 3 years**. This was multiplied by the adult population of 30.4 million, with a small amount added for visitors and passers-by who had been surveyed separately. The total came to around £1.2bn of heritage benefits (or £955m, in 2010 values). The sum of £353m was added to the transport benefits to give a new total of £1.307m. Thus, remarkably, the tunnel scheme turned a **-£853m net loss** to a **net profit of £101m**.

Despite the injection of an extra £955m of benefits, the surplus only shows a small return of 8p for each pound invested, i.e., a **BCR of 1.08**, deemed **low value**. [See Table 2, Note 3 below].

What were survey participants shown?

Surveys of this nature are fraught with causes for concern, and the methodology was questioned by the National Audit Office (NAO), the Scheme Examiners and other transport professionals. The survey questions and visual material presented prompted further probing.

Respondents were told the road would be taken out of only part of the site, but the viewpoints shown to respondents were oriented only towards, or from, the Stonehenge monument and compared the ‘status quo’ with ‘the A303 removed’. What was not made clear was that replacing the present single carriageway with a dual carriageway with massive portals at the tunnel entrances would have a much worse impact on the rest of the WHS site. [Notes 4 and 5]

Images shown to respondents by National Highways

Photo – view of the A303 from the stone circle: Status Quo



Photo – view of the A303 from the stone circle: A303 removed



Photo: View of Stonehenge from the A303: Status Quo



Photo: View of Stonehenge from the A303: A303 removed



The accompanying script explained that both tunnel portals would be within the World Heritage Site but the images and photomontages of the new dual carriageway within the WHS were not shown

Images not shown to respondents



Status quo is busy but not always nose to tail. © Stonehenge Alliance



The above images by National Highways produced for the Examination were not shown to respondents.

Survey method lacked credibility

Stonehenge Alliance specialist advisors considered the heritage value should be treated with caution and not used as a basis to justify the scheme. Some reasons are listed below. [See Notes 6 and 7]

Reappraisal of the scheme defies credibility

Following the Examiners' advice against approving the scheme (2020), UNESCO's consistent condemnation of the scheme, and the quashing of the DCO in the High Court, the Transport Secretary is redetermining the scheme, and has asked National Highways for further information. [Notes 8, 9 and 10].

As things stand, we fear that Ministers and DfT officials could be misled into thinking that the scheme is viable. National Highways has recently conjured up new figures claiming that **costs have fallen**, and **benefits have increased**, and the scheme has a **BCR of 1.55** which is simply not credible.

Given that the Examiners and UNESCO say the proposal will harm the WHS, and that even the former Transport Secretary agrees, **the heritage benefits have not reduced but remained exactly the same**. In response to our query, National Highways continued to defend the flawed heritage valuation refusing to acknowledge that their rose-tinted view of the scheme is not a sound basis for the survey when it has been so roundly condemned. [Note 11]

The scheme's latest construction and maintenance costs are now in the order of **£2.5bn** in current prices and are only likely to soar with current inflation.

Furthermore, to claim higher benefits in new calculations is looking particularly unlikely. All the major critical developments that have happened since the original appraisal was carried out would lead to **reducing the expected rate of traffic growth**, i.e. Covid, Brexit, the energy crisis, increases in inflation, revised assessments of climate change, the new unfavourable assessments of economic prospects for

a considerable time, and tight budgetary pressure on both public and private expenditure. Therefore, it is doubtful that the calculated growth of congestion in the absence of the tunnel will materialise.

In a recent report, the National Audit Office recommended that National Highways needs to carry out a value for money review of its major schemes such as Stonehenge to ensure they still provide value for money. [Note 12]

Calls for a new heritage valuation survey

Professor Phil Goodwin has suggested that it would be quite simple to update the survey. He has said:

“The proper question suddenly becomes ‘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 there is no reason for not undertaking such a simple piece of work, other than it might come to a different answer reducing or negating the heritage benefit. [Note 13]

Conclusions and recommendations

1. The Heritage Valuation is critical to the success or otherwise of the business case for the Stonehenge road scheme, but **it** lacks credibility.
2. Any value-for-money review (as recommended by the NAO) should reflect UNESCO’s, the Examiners’, and former Transport Secretary’s verdicts that the scheme would permanently damage the WHS, as well as the impact of spiralling construction costs based on the latest traffic projections, valuations and models.
3. If the value-for-money review fails the Department’s and Treasury’s revised funding criteria, we would urge DfT to test as soon as possible a package of measures that:
 - are low impact,
 - are low carbon,
 - respects the entire Stonehenge WHS,
 - improves the quality of life of local communities, and
 - could be used as exemplars for action where hitherto the countryside is seen as a problem, something to be passed through swiftly to speed the flow of interurban long-distance traffic. [Note 14]

A low-cost package would be in line with the NAO’s recommendation that criteria should include demand management in collaboration with other ministries. [Note 15]

NOTES AND REFERENCES

1. “Understating the risks, both to costs and to benefits, is standard practice...”: Former Chancellor and Transport Secretary, The Rt Hon. Lord Philip Hammond of Runnymede, in [response to Q51 to the Transport Select Committee, 17 March 2021](#).
2. Tables 1 and 2 below were created by Professor Phil Goodwin¹ for webinar: [Saving Stonehenge WHS: Transport & Economics](#), 3 June 2021, derived from Tables 5.4 and 5.5 on page 5-24 in DCO

¹ Phil Goodwin, BSc (Econ), PhD (Civ. Eng.), FCILT, FCIHT, MTPA, is Emeritus Professor of Transport Policy at UCL and UWE. Senior Fellow 2020-2022 at the Foundation for Integrated Transport, he was formerly a transport economist at the Greater London Council, director of the Oxford University Transport Studies Unit, a member of SACTRA (Standing Advisory Committee on Trunk Roads Assessment), Chair of the panel of advisors for the 1998 Transport White Paper, a non-executive director of the Port of Dover, and Professor Emeritus of Transport Policy at UCL and UWE.

document, extracted from Tables 5.5 and 5.6 in National Highways Case for the Scheme page 5-24, 2018.

Table 1: Benefits and Costs of A303 Amesbury to Berwick Down according to DfT appraisal methods without heritage benefits.

**Benefits and Costs of A303 Amesbury to Berwick Down
According to DfT Appraisal Methods**

Benefit component	Lifetime £m (discounted to 2010)
Economic Efficiency of Transport System (mostly time savings)	£252
Indirect tax revenue	£87
Reduction in accidents	£4
Journey time 'reliability'	£61
'Wider Economic Benefits'	£35
Losses from extra pollution	-£86
Total Transport Benefits	£353
Total Costs	£1206
Net Loss (BCR)	-£853 (0.29)

3. **Table 2:** Total costs of A303 Amesbury to Berwick Down according to DfT appraisal methods with heritage benefits added.

**Benefits and Costs of A303 Amesbury to Berwick Down
when you add on heritage benefits**

Benefit component	£m (discounted to 2010)
Total Transport Benefits	£353
"Value of removing road from WHS (contingent valuation)"	£955
New Total Benefits	£1307
Total Costs	£1206
Net Surplus (BCR)	£101 (1.08)

4. National Highways, 6 Feb 2017: [Valuing Heritage Impacts: Appendices](#) Contingent valuation – survey and images shown
5. National Highways, 6 Feb 2017: [Valuing Heritage Impacts](#), Methodology and results. Contingent valuation – report and analysis
6. Extracts from Alan James, 2019: '[Cultural Heritage Value: Valuing Heritage Impacts Appraisal of Arup/ Atkins/Simetrica Report to Highways England](#)', representation to the Examiners for the Stonehenge Alliance -
- "The heritage value accounts for almost 75% of the benefits, and without them the road makes no economic sense at all.*
- Of the £955 million of 'benefits', no less than 94.2% of the benefit is attributed to the 'general population' group, most of whom by definition are unlikely to have experienced the site as it is and are unlikely to have a stake in how it might appear in future with the scheme in place.*
 - There are numerous areas of potential bias in the survey, the most significant of which are*

- i. *the bias inevitably introduced by asking questions about the subject;*
 - ii. *the use of potentially misleading photographs and photomontages, particularly important with the large general population group who do not know the site very well; and*
 - iii. *the hypothetical bias of asking people what they would be prepared to pay when they know they will never have to pay it.*
 - c. *The study did not consider options that remove the A303 entirely from the World Heritage Site, so cannot provide any comparative evidence to support the proposed scheme or to reject the alternatives.”*
7. National Highways, 2019: [Responses to criticisms of Contingent Valuation](#) pp13-166 to 13-179
 8. UNESCO 2021:
 - a. the postponed and extended 44th session of the World Heritage Committee maintained its position concerning the A303 Stonehenge scheme and confirmed, in its [Decision](#) of 22 July that, should the High Court allow the scheme to proceed and it is not “fundamentally amended”, consideration would be given to placing Stonehenge, Avebury and Associated Sites World Heritage Site on the [List of World Heritage Sites In Danger](#) at its next meeting.
 - b. A UNESCO World Heritage Centre and ICOMOS [Advisory Mission report](#) (April 2022) says that ideally the road should be taken outside the WHS, but stated that any tunnel should extend at least to the western WHS boundary. However, no decision should be taken on the scheme before the next World Heritage Committee meeting.
 9. Planning Inspectorate’s Examining Authority, 2020: [Recommendation to the Secretary of State](#) concludes:
 - a. “The overall effect on the WHS OUV would be significantly adverse.” (Para. 5.7.321).
 - b. In respect of images not shown to survey respondents: “As can be seen from the aerial views, sections of the existing A303 running alongside the footprint of the proposed cutting are embanked above the natural ground level. This would give the cutting greater visibility to users of the byway, with the likelihood of views directly into the cutting and into the entrance to the tunnel.” (Para. 5.7.222); and “... the current proposal for a cutting would introduce a greater physical change to the Stonehenge landscape than has occurred in its 6,000 years as a place of widely acknowledged human significance. (Para. 5.7.225)
 10. The Hon Justice Holgate, 2021: Stonehenge WHS Ltd v SoS for Transport, Highways England and Historic England, Judgment [Summary with link to full judgment](#)
 11. National Highways, 17 August 2022: Response to committee member’s enquiry
 12. NAO, 2022: [Road enhancements: progress with the second road investment strategy \(2020 to 2025\)](#)
 13. Goodwin, Phil: “[If you’re in a hole... it must be time to rethink Stonehenge scheme](#) “ Oct 2021, Local Transport Today.
 14. For example see Hagyard, Tim: [Respect Stonehenge: An alternative](#), 2021 *A proposal for a package of traffic measures that should be trialled before considering an expensive and massively intrusive landscape intervention*
 15. NAO op. cit., p38 Fig 12: “The Department for Transport’s six draft objectives for its third road strategy, from April 2025 to March 2030”