

A303 Stonehenge Improvement

Scheme Review - Stage 2 Report

July 2006

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Executive Summary

The Stonehenge Scheme Review is concerned with finding a solution to the mix of heritage and transport problems that exist in the World Heritage Site (WHS), coupled with providing a bypass for the village of Winterbourne Stoke immediately to the west.

In 1984 the Government ratified the UNESCO World Heritage Convention (see Glossary) and nominated the first UK sites, including Stonehenge, for inscription in 1986. In accord with the Operational Guidelines of the World Heritage Committee, the *Stonehenge WHS Management Plan* was published in 2000 by English Heritage on behalf of the Government. The A303 Stonehenge Improvement scheme is fundamental to delivering many of the Management Plan objectives. The developing ideas for the WHS have been reported to the World Heritage Committee regularly, and they have been content with the proposals to place the A303 in a 2.1km long bored tunnel, with the accompanying closure of the A344 and relocation of the Visitor Centre outside the WHS.

On the 20 July 2005, the Inspector's Report on the Public Inquiry into the A303 Stonehenge Improvement was published. In his Report, the Inspector recommended in favour of the Published Scheme promoted at the Inquiry, and he further recommended that the Scheme Orders should be made, subject to some minor modifications. On the same day, the Minister of State for Transport announced that, as a result of a substantial increase in the cost of the Published Scheme, the Government had decided to review whether the Scheme still represented value for money and the best option for delivering improvements to the A303 and to the setting of Stonehenge. A cross-government steering group was then established to take forward the Review. Its Terms of Reference were announced by the Minister of State for Transport on the 31 October 2005 (see Appendix A).

The Review has been taken forward in two stages. The Stage 1 Report (published in January 2006) identified five possible options as being worthy of further more detailed consideration (see Figure 2.2). These were presented for public consultation over a period from 24 January 2006 to 24 April 2006.

This Report comprises Stage 2 of the Review and presents the results of the consultation exercise and of the more detailed assessment of each option.

Responses to the consultation exercise came largely in the form of completed questionnaires which were distributed either with the consultation leaflet or were available to fill in electronically through the Highways Agency's website. A public exhibition was held in both Salisbury and London and specific consultation also took place with Wiltshire County Council, Salisbury District Council, all the relevant statutory environmental bodies and with key stakeholders including the Ministry of Defence, the National Trust, RSPB, the UK National Commission for UNESCO and the Society of Antiquaries of London. Many written responses were received and have also been taken into account in the analysis. A total of 4805 responses were received, with the Published Scheme being the most supported option and the Southern Route being the most opposed option, but with many other comments also being expressed about all the options.

Detailed assessment work has progressed throughout the Review, in parallel with the public consultation, to establish the benefits and disbenefits of each option. An overall appraisal of each has been prepared as the basis for comparing options. Appraisal Summary Tables showing the results of this process are included in Appendix E.

A comparison of the assessments for each option against the Government's objectives shows that the Published Scheme and the Cut & Cover Tunnel option have beneficial effects for most of the assessment criteria, but with some adverse effects. The Cut & Cover Tunnel in particular would change the landform in Stonehenge Bottom to an extent that English Heritage and others, both within and outside the heritage sector, find unacceptable. Both tunnel options are largely compatible with the *World Heritage Site Management Plan* objective for removing roads and traffic from the setting of Stonehenge. The Published Scheme can be considered to be the easiest to deliver since it has successfully completed a Public Inquiry and enjoys majority support, especially from all the relevant statutory bodies. However, among others, the National Trust, as a key stakeholder and landowner holding inalienable land, has stated that it finds the Published Scheme unacceptable and has indicated its readiness to challenge any decision to proceed

with a 2.1km long tunnel. In addition, the review of the Published Scheme costs has shown that there are no substantial savings to be made.

Another point in relation to the Published Scheme is that the planning permission granted by Salisbury District Council and Heritage Lottery funding for English Heritage's proposed new Visitor Centre at Countess East are both conditional on the Published Scheme going ahead.

The Northern and Southern Routes have better economic benefit to cost ratios compared with the tunnel options, but have significant adverse environmental impacts, notably affecting biodiversity and cultural heritage. Both routes are opposed extensively by the environmental sector, including English Heritage, RSPB and the National Trust. The Northern Route has an overall greater level of impact as recognised by the joint response from English Nature, the Countryside Agency and the Rural Development Service and also in the responses from the Environment Agency and from Defence Estates on behalf of MOD. These surface routes would improve the setting of Stonehenge but fail in other areas to meet the objectives of the *World Heritage Site Management Plan*. The lower costs of these routes would make them more affordable, but the level of opposition apparent from the consultations indicates that they would be difficult to deliver.

The Partial Solution would be the least expensive option but would also have the lowest benefits, though the ratio of economic benefit to cost would be higher than the tunnel options. The environmental assessments indicate there would be a mix of beneficial and adverse impacts. The Partial Solution would provide some minor beneficial effects for Stonehenge from the closure of the A344/A303 junction as well as providing a bypass for Winterbourne Stoke and grade-separation of the Countess Roundabout. However, this option would substantially fail to meet the objectives of the *World Heritage Site Management Plan*. It would also not fulfil the Government's overall strategy for upgrading to dual carriageway all the single carriageway sections of the A303/A358 corridor to the M5 at Taunton. The consultation indicates that this option would be opposed due to its lack of benefit both for Stonehenge and for the traffic congestion problems that would continue along the A303 past the Stones.

An alternative approach for the Partial Solution would be to treat it as the first stage in the construction of the Published Scheme. However, this would raise questions about the efficiency of such an approach. For instance, fill material for the Winterbourne Stoke Bypass would have to be imported when it would otherwise be obtained by making use of the surplus material excavated from the tunnel. Also, if the tunnel was built subsequently, the excavated material would have to be disposed off-site rather than being used in the construction of the Winterbourne Stoke Bypass.

Routes put forward by other consultees have been assessed, and in the main have been shown to be either not feasible or substantially less attractive than the five main options, which themselves have emerged from a background which has seen a multitude of different routes and solutions investigated over a period going back to the early 1990s. A route corridor suggested by the National Trust (see Figure 5.1) is one of those options previously investigated, but has nevertheless been considered again in some detail and its assessment reveals greater overall adverse impacts against most of the Government objectives, making it less attractive than the Northern and Southern Routes shortlisted. Strong opposition from local residents and the MOD would also be inevitable.

Overall this Review has illustrated the different performance of each option set against the Government's objectives, and the consultation exercise has generated a large and well-informed response. The Review has shown there is no ready solution that satisfies all the criteria of being affordable, acceptable and deliverable. The Published Scheme would clearly secure the objectives and is preferred by the majority, but still has affordability problems. On the other hand, while there are less expensive options that would secure the objectives at least in part, these also have a greater degree of adverse impact that for some interests make them unacceptable and so raises questions about their deliverability. This Report sets out the issues to inform a decision on the way forward.

1 Introduction

1.1 Ministerial Announcements

On the 20 July 2005, the Minister of State for Transport, Dr. Stephen Ladyman, announced the Government's plans to carry out a detailed review of the options for the A303 Stonehenge Improvement Scheme. This was combined with an announcement that the Public Inquiry Inspector was satisfied that the case for the Published Scheme had been made and recommended that the Scheme Orders should be made, subject to some minor modifications.

The reason for the Review is that there has been a significant increase in the estimated cost of the Scheme since the Public Inquiry. Given the scale of the cost increase, the Government decided to re-examine whether the Published Scheme still represents value for money and is the best option for delivering improvements to the setting of Stonehenge and to the A303.

Subsequent to the announcement in July 2005, a cross-government steering group was established to take forward the Review, the details and Terms of Reference for which were announced by the Minister of State for Transport on the 31 October 2005 (See Appendix A).

1.2 Scope of Work for This Report

This Report comprises Stage 2 of the Review, covering items (e) and (f) of the Terms of Reference, which are as follows.

“e) review consultation responses and complete a full assessment of the performance of the published scheme and the shortlisted options against the Government's objectives, looking in particular at each option's overall value for money, compatibility with the Stonehenge Management Plan and plans for a new visitor centre, environmental impacts, relief of congestion on the A303, affordability and deliverability;

f) prepare a report to Ministers on the results of the consultation exercise and the performance of each shortlisted option in relation to the factors listed at (e) above.

The review will also consider whether there are any implications for the strategy of improving other sections of the A303/A358 corridor to the west of Stonehenge.”

This Report is supported by a separate *Scheme Review Stage 2 – Detailed Assessment of Options Report*, which contains the detail of the option assessments, and a *Scheme Review Stage 2 – Public Consultation Report*, which gives detailed results and analysis of the public consultation response.

1.3 Report Format

The remainder of this Report comprises a further six chapters as follows:

Chapter 2 provides background information and explains the derivation of options put forward for public consultation.

Chapter 3 presents a summary of the public consultation. It identifies additional options suggested during consultation and states whether further assessment work has been needed in order to make comparisons with the shortlisted options put to the public consultation.

Chapter 4 summarises the more detailed assessment of the shortlisted options presented for public consultation.

Chapter 5 covers the assessment of additional options arising from the consultation process, as identified in Chapter 3.

Chapter 6 compares the shortlisted options and their performance against the criteria listed in the Review's Terms of Reference.

Chapter 7 draws together the main conclusions from the consultation and assessment of each option.

2 Background

2.1 Context

The stretch of A303 under review and its route through the Stonehenge World Heritage Site (WHS), along with other significant, proximate constraints, is shown on Figure 2.1.

Stonehenge is one of the most important and visited monuments in Britain, drawing millions of visitors from all around the world. In 1986, Stonehenge, Avebury and Associated Sites was inscribed onto the World Heritage List, having been nominated by the Government. At the time of its inscription UNESCO's World Heritage Committee were pleased to hear reassurance from the Government that the closure of the A344 was receiving serious consideration as part of the overall plans for the future management of the Site. Today two main roads pass close to the monument, severing it from the rest of the important archaeological and historic landscape. As shown on Figure 2.1, the busy A303 trunk road passes within 165m of Stonehenge and the A344 cuts across The Avenue very close to the Heel Stone (an outlier of the main stone circle standing immediately alongside the A344).

In 2000 the *Stonehenge World Heritage Site Management Plan* was published by English Heritage on behalf of the Government in order to meet the UK's obligations under the World Heritage Convention (ratified by the Government in 1984). The Plan (which was agreed by all the major stakeholders) was published in accordance with the Operational Guidelines of UNESCO's World Heritage Committee (the body responsible for overseeing WHSs around the world) and has been adopted by Salisbury District Council as Supplementary Planning Guidance; it meets the Government's requirements for all WHSs to have management plans as set out in PPG15 and conforms with the guidance produced by ICCROM and ICOMOS as well as UNESCO (see Glossary). The implementation of the Plan is overseen by the Stonehenge WHS Management Committee which draws on representatives from all major stakeholders. The overarching aim of the Plan is to set out a management framework whereby Stonehenge and its associated historic environment within the WHS is preserved and passed on to future generations.

The Stonehenge Project, a partnership principally between English Heritage, The National Trust and the Highways Agency, is a specific project which seeks to deliver many of the objectives of the *WHS Management Plan*. It has three components:

- Development of a new Visitor Centre at Countess East, outside the WHS, and removal of the existing facilities on the A344 close to Stonehenge.
- Cessation of arable farming on the National Trust estate within the visible environs of Stonehenge, and, where possible, extension of the Defra funded grassland reversion scheme to other landowners.
- The A303 Stonehenge Improvement which seeks to remove the A303 from the vicinity of Stonehenge by placing the road in a 2.1km bored tunnel, whilst also upgrading the road through the WHS to dual carriageway standard, in turn enabling Wiltshire County Council to close the A344.

The full realisation of the first two components is dependent upon the delivery of the third, namely the A303 Stonehenge Improvement. In particular, the proposed new location for the Visitor Centre at Countess East anticipates the new grade-separated junction proposed at Countess Roundabout as part of the Published Scheme being able to accommodate a new safe access into the Centre. This has recently been reinforced by Salisbury District Council (on 10 July 2006) conditioning the granting of planning permission for the new Visitor Centre to the Published Scheme for the A303 going ahead. In addition, part of the funding for the Centre is a £25m contribution from the Heritage Lottery Fund, with a condition attached that the funds will not be released before final approval is secured for the A303 Improvement. The National Trust's estate management proposals are also anticipating the removal of roads and traffic for its objectives to be secured fully within the WHS.

The A303 Stonehenge Improvement arose from the acceptance by the Government that the sum of the traffic and environment improvements proposed at Stonehenge was sufficient to warrant its inclusion into the Targeted Programme of Improvements as an "*exceptional environmental scheme*". Without the A303 Stonehenge Improvement the Stonehenge Project would fail, the proposed relocation of the Visitor Centre could not proceed and the *WHS Management Plan* would have to be revisited for the future of the Stonehenge monument.

Further background details on the cultural heritage and transport problems that are addressed by the Stonehenge Project can be found in the *Scheme Review - Stage 1 Report*, published in January 2006.

2.2 The Scheme Review: Stage 1

The *Scheme Review - Stage 1 Report* covered items (a) to (c) of the Terms of Reference (see Appendix A) and culminated in a shortlist of options deemed worthy of further consideration and assessment. These (shown on Figure 2.2) were:

- *The Published Scheme*: namely the scheme heard at Public Inquiry, including a 2.1km long twin-bored tunnel for the A303 past Stonehenge.
- *Cut & Cover Tunnel*: substantially the Published Scheme, but with the proposed 2.1km bored tunnel replaced by a 2.1km cut & cover tunnel (with consequential slight alignment changes).
- *Northern Route*: formerly known as the Purple Variant Route (in the mid-1990s), and then Objector's Alternative Route 3 (AR3) during the Public Inquiry, since modified with a short section of tunnel and a northern re-alignment west of Larkhill to mitigate a number of adverse impacts.
- *Southern Route*: formerly known as the Grey Route (again in the mid-1990s), comprising an alignment to the south of the existing A303 through the World Heritage Site. This route was considered in earlier studies, but was dropped in 1994 because it was a new route through the World Heritage Site. The route is nearer Stonehenge than the remoter southern route alternatives put forward at Public Inquiry, all of which were rejected by the Inspector on either economic or environmental grounds, or both. The Southern Route consultation option could be adjusted to have little or no visibility from Stonehenge.
- *Partial Solution*: elements of the Published Scheme, namely the Winterbourne Stoke Bypass and flyover improvement at Countess Roundabout, along with closure of the A344 junction with the A303 at Stonehenge, but otherwise retaining the existing A303 through the World Heritage Site.

The rationale for selecting this shortlist of options is explained below.

The trigger for the Review has been the increase in cost of the Published Scheme, with its 2.1km long bored tunnel. This led to the Government's decision to re-examine whether there are less expensive, affordable, deliverable options capable of securing the scheme objectives which are to:

- Remove roads and traffic from the heart of the World Heritage Site around Stonehenge
- Provide a bypass for the village of Winterbourne Stoke
- Reduce accidents and congestion on this stretch of the A303

The starting point for identifying the shortlist of options to be taken forward for public consultation in Stage 2 of the Review was the Published Scheme itself. This would deliver the above objectives, was the Inspector's recommended solution following the 2004 Public Inquiry and would provide a benchmark against which other options could be compared. The challenge was to review the methods for boring the 2.1 km long tunnel, in the light of the discovered

ground conditions along the A303 past Stonehenge, to determine whether cost savings are achievable. However, it was recognised that any savings were unlikely to reduce significantly the cost of the Published Scheme.

The only way of achieving a significant reduction in cost and still deliver a tunnel solution along the line of the A303 is to revert to the Cut & Cover type of tunnel that had previously provided the basis for developing the scheme (up to the end of 2002 when the Secretaries of State for Transport and Culture, Media and Sport made their decision to adopt the bored tunnel solution). This would secure budget savings in excess of £100m, but would create adverse impacts and would still be very expensive to build. Nevertheless, these issues were to be explored further in Stage 2 of the Review.

For further reductions in cost to be achieved, it is necessary to abandon tunnel solutions and instead explore surface solutions for improving the A303. Any surface solution on the line of the existing A303 would fail to secure the first objective of the scheme, namely the removal of roads and traffic from the setting to Stonehenge. This led to options being explored to the north and south of the existing A303, to ensure that roads and traffic would be taken further away from the Stones. The examination of options was conducted in the context of the long history of this scheme extending back to the early 1990s. Since that time a multitude of routes and different solutions has been examined north and south of the existing A303, within and beyond the boundaries of the World Heritage Site, leaving no stones unturned. With that background, the northern and southern options identified for further review were considered to be the best routes possible north and south of the existing A303, taking into consideration the many constraints that exist in this area. Notwithstanding the fact that these routes were considered the least damaging alignments, they would still give rise to significant adverse impacts which were to be assessed further and which could affect their deliverability.

In the light of the above, there was a perceived risk that it would not be possible to find an affordable, deliverable 'whole scheme' solution. In that event, there remains the option to undertake partial improvement of the A303, including the Winterbourne Stoke Bypass and Countess Roundabout sections of the Published Scheme. This, therefore, became the fifth option to be taken forward into Stage 2 of the Review. (If all else fails, there remains, of course, the option of doing nothing.)

Each of the identified options has been fully assessed and tested against the scheme objectives, looking in particular at overall value for money, compatibility with the Stonehenge *World Heritage Site Management Plan* (including plans for a new Visitor Centre), environmental impacts, relief of congestion and improved safety on the A303, plus affordability and deliverability.

3 Summary of Public Consultation

3.1 Introduction

This Chapter summarises the public consultation that was undertaken into the five options selected for Review. The consultation period ran from 24 January to 24 April 2006 and included the publication of a leaflet and questionnaire (attached at Appendix B), two public exhibitions and two public meetings. The full results are presented in the *A303 Stonehenge Improvement, Scheme Review Stage 2 - Public Consultation Report*. Appendix C herein contains tables giving details of responses received during the consultation.

3.2 Public Consultation Options

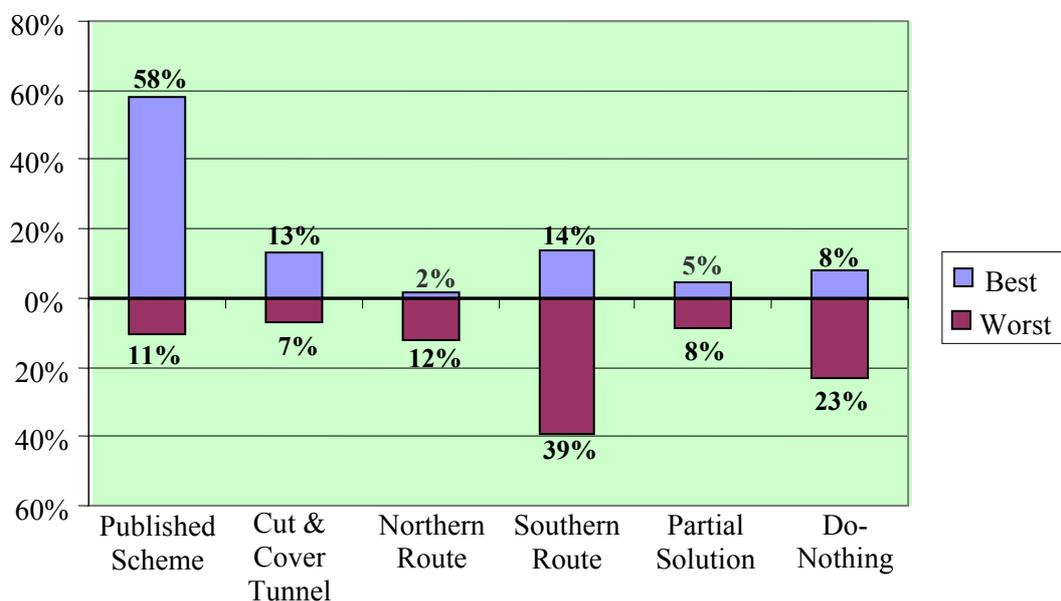
As described in Section 2.2 and shown on Figure 2.2, the following five options were selected for the public consultation:

- The Published Scheme
- Cut & Cover Tunnel
- Northern Route
- Southern Route
- Partial Solution

The public's views were invited on each option in the knowledge that less definitive information was available for the Northern and Southern Routes where they depart from the corridor of the Published Scheme. This is due to the fact that extensive surveys have been carried out in the past for the Published Scheme which are also relevant for the Cut & Cover Tunnel and Partial Solution, but a similar depth of survey would be needed in the future for the Northern and Southern Routes should either of these options be taken forward.

As described in Paragraph 3.4.1 below, a total of 4805 responses (questionnaires and letters/emails) were received from the consultation and Chart 3.1 below presents the overall results of respondents' option preferences. These results are broken down and further analysed in the remainder of this Chapter.

Chart 3.1 Option preference of all respondents



3.3 Consultation Arrangements

A public consultation leaflet was produced to present the options under consideration. A questionnaire seeking the public's views was included with each leaflet, together with a prepaid envelope. Copies of the leaflet and questionnaire are included at Appendix B.

A press release to announce the start of the consultation period was published on 14 January 2006. In addition, newspaper advertisements were placed in the Salisbury Journal, Wiltshire Times, Evening Standard and the London Metro.

Approximately 21,560 leaflets were distributed during the consultation period and electronic versions of both the leaflet and the questionnaire were available via the Highways Agency's website. Hard copies of the leaflet were distributed or made available as follows:

- By post to stakeholders, statutory and non-statutory authorities and organisations, and to people who presented evidence at the Public Inquiry
- By post and by hand to households and businesses within approximately 300m of the route options
- On 'stands' placed in selected public buildings and at petrol filling stations along the A303
- Through distribution at the two exhibitions and at public meetings
- Through distribution with the March/April 2006 edition of the journal British Archaeology
- By post as and when requested

The exhibition comprised 16 panels describing the history of the scheme and the options under consideration. Copies of the Stage 1 Report were available for reference at the exhibitions, as were the various supporting reference documents referred to in the Stage 1 Report. These same documents were available at various local deposit points during the consultation period. The Stage 1 Report was also available for download from the HA website.

The first exhibition was held at The White Hart Hotel in Salisbury from Thursday 9 to Saturday 11 February 2006 and was attended by 603 individuals. The second exhibition was held at The Society of Antiquaries, Burlington House, Piccadilly, London on Friday 17 and Saturday 18 February 2006 and was attended by 264 individuals. In addition public meetings were held in Amesbury and Durrington, and presentations were made to the UK National Commission for UNESCO, the Society of Antiquaries and to the Freight Transport Association.

3.4 Effectiveness of Consultation

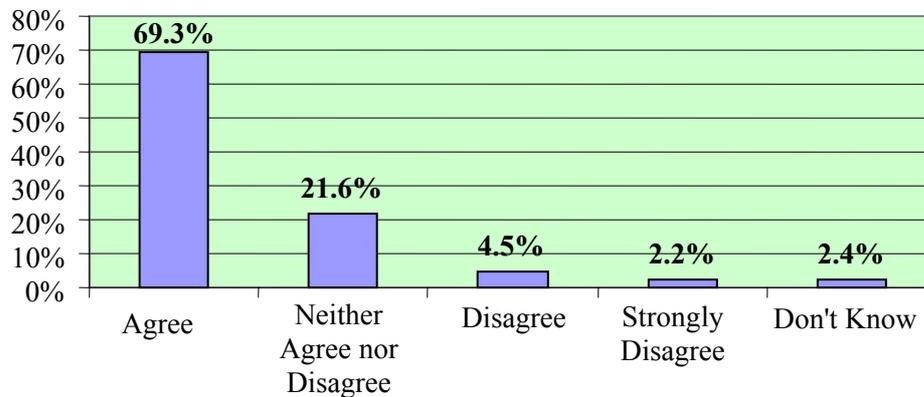
3.4.1 Response Rate

A total of 4,658 questionnaires were submitted to the Highways Agency, 2,845 in hard copy and 1,813 electronic via email. However, 857 of these hard copy responses were photocopies of the original questionnaire, so 1,988 of the 21,560 questionnaires sent out were returned. In addition, 178 written responses (letters and emails) were received, with 31 of these being from individuals or organisations who also submitted a questionnaire, so the total number of individuals and organisations that responded to the consultation is 4,805 (4,658+178-31).

3.4.2 Respondent Feedback

The final question of the questionnaire asked whether the leaflet was informative and helped in understanding the scheme options. Respondents were asked to tick against boxes labelled 'Agree', 'Neither Agree nor Disagree', 'Disagree', 'Strongly Disagree' or 'Don't Know', with the results indicated in Chart 3.2 below.

Chart 3.2 Feedback on whether leaflet was informative



This would appear to indicate quite strongly that the vast majority of respondents (69.3%) were satisfied with the way in which the information was presented and only 6.7% expressed dissatisfaction.

Respondents were also invited to enter a comment in this part of the questionnaire. These were not only about the leaflet, but also about the questionnaire and consultation process in general. In addition, comments on the questionnaire and consultation were received in written responses and these were also included in the analysis. A summary of these comments is presented in Appendix C.

3.5 Method of Analysis

3.5.1 Data Entry

The details of each questionnaire were entered into a spreadsheet developed specifically for this purpose. The spreadsheet was developed to suit the format of the questionnaire and to enable easy data retrieval and analysis. The main aim was to ensure that all details from each questionnaire were captured and fully recorded, with nothing missed.

A similar spreadsheet was developed for the logging of details from written responses. Where letters were received with questionnaires, the comments made were logged with the questionnaire response.

3.5.2 Analysis

Tick-Box Questions on Questionnaire

Questions 1, 3, 4 and 5 of the questionnaire invited respondents to tick boxes to indicate preferences and views. These questions were simply analysed through automatic counts in the spreadsheets, except for Question 1 which asked respondents for their option preference, by choosing their best and worst option. It was possible for respondents to select more than one option as their best or worst, as many did. Where this was the case, when a respondent chose 2 best options then each was allocated 0.5 votes, and so on down to 0.2 votes for each when 5 options were selected. This avoided bias in the total counts of preferences.

Where option preferences were indicated within written responses (letter or email), these results have also been included.

Written Comments and Responses

The questionnaire contained four parts where written comments or responses could be added and respondents could also attach additional sheets or letters. In addition, letters and emails were received by both the Highways Agency and the Department for Transport, including via

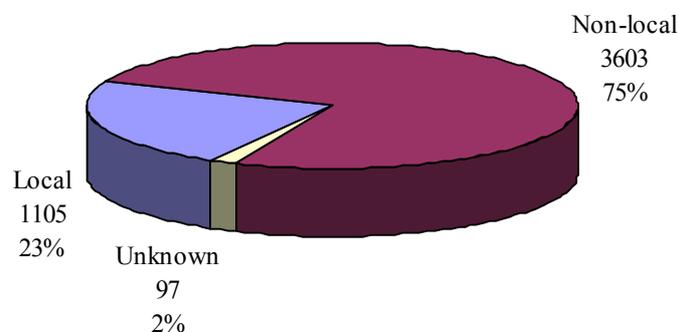
Members of Parliament. For all these written responses, an analysis of the individual comments was undertaken. This was pursued by developing lists of generic responses, against which individual comments could be logged. This approach categorised the individual comments and allowed simple statistical analysis of them.

Local/Non-Local Responses

The analysis of the responses was split by local respondents (defined as those within the zones shown on Figures 3.1 and 3.2) and non-local respondents. Further to this, local respondents were grouped by local area (eg. Durrington, Larkhill, Amesbury, as illustrated on Figures 3.1 and 3.2) to enable a more detailed analysis.

When respondents did not provide a full address or postcode then all reasonable effort was made to establish the postal area from which the submission was made to enable a local or non-local categorisation to be made. If this was not possible then they were categorised as from 'unknown' location. 97 responses fell into this category and Chart 3.3 below shows these as a proportion of all responses received.

Chart 3.3 Origins of Responses



For the purpose of the analysis all responses from 'unknown' locations have been included with the non-local responses. This is on the basis that many will be from non-local respondents and the allocation will not result in any significant statistical bias.

Alternative Routes

A number of respondents have either proposed alternative routes or supported routes previously proposed by others. These have been noted and are discussed later in Section 3.10.

3.5.3 Group Responses

Group responses are those generated by an organisation or other action group. Whilst these are all valid responses and warrant full inclusion in the analysis, they can influence the results. Where such an influence is possible, an analysis with those group responses removed has been carried out in addition to the analysis of the whole data.

Three group responses have been noted, from the RSPB (Royal Society for the Protection of Birds), Heritage Action and the Stonehenge Alliance. These responses are discussed below.

RSPB

Amongst the 4805 responses received, it appears that 1526 (32%) have been submitted in response to a campaign by the RSPB, many of which are on photocopies of the original questionnaire. These responses were identified through a combination of patterns in the voting on the questionnaire and by specific comments the same as or similar to those suggested by the RSPB in their campaign. Where there was any doubt as to whether a response was stimulated by the RSPB campaign then it was assumed not to be, so the actual number of responses arising from the campaign could be higher than the 1526 assumed.

The main aim of the RSPB's campaign has been to protect habitat that supports roosting and breeding Stone Curlews, as well as breeding Skylarks, Corn Buntings, Lapwings, Barn Owls

and Short Eared Owls. The RSPB's primary concern is the protection of the Normanton Down reserve that would be severed by the Southern Route. RSPB also objects to the Northern Route, which they consider to have negative impacts on the Salisbury Plain Special Protection Area (SPA).

The RSPB offered points that may be used by respondents, as follows:

- *"The RSPB considers that the published tunnel option is the best of the five routes presented.*
- *The southern bypass will destroy the Normanton Down reserve, and the crucial habitat it provides for breeding stone-curlews.*
- *Neither the northern or southern bypass option significantly diminishes the huge impact of the A303 on this World Heritage Site, the primary objective for the whole project."*

The RSPB also noted specific concern over the "leading" nature of Questions four and five, relating to non-tunnel options and the Partial Solution junction options, and urged members not to complete these questions.

They went on to suggest that members should choose to say in Question 6, for comments, that "*...the published 2.1 km bored tunnel represents an 'exceptional environmental scheme'*".

Due to the large number of questionnaires submitted in response to the RSPB campaign, the voting and numbers of comments have been influenced accordingly. To ascertain the effects, the analysis of the option preference has been carried out with and without the RSPB contribution.

Heritage Action

A smaller number of responses (67 equating to 1.4%) have been submitted in response to a campaign by Heritage Action through a website entitled:

http://www.heritageaction.org/?page=heritagealerts_stonehenge

Heritage Action feels a start should be made on implementing short-term improvements in advance of agreement on any long-term solution. They urge the UK Government to work towards improving the immediate setting of Stonehenge without further delay, ensure that this work can be undertaken as an immediate stand-alone project without prejudice to the form of future improvements, and to close the A344. They ask their supporters to complete the on-line questionnaire and in particular to select Do-Nothing in Questions 1 and 4.

This comment/reason has been noted and counted amongst other comments and reasons and reported, but no adjustment was needed to the reported results due to the relatively small numbers involved.

Stonehenge Alliance

A number (23) of letters have been received in a common format in response to a campaign by the Stonehenge Alliance.

The Alliance objects to all five options presented for consultation and calls on the Government to "*stop spending public money, supposedly intended for protecting our heritage, on road-building schemes that would do nothing of the sort.*"

Respondents have submitted a relatively standard letter that generally urges the Government to investigate realistic, affordable solutions that respect the integrity of the whole World Heritage Site. They suggest closing the A344 and investigating low-cost, low-impact, quick-to-implement measures to improve traffic congestion and safety near Stonehenge.

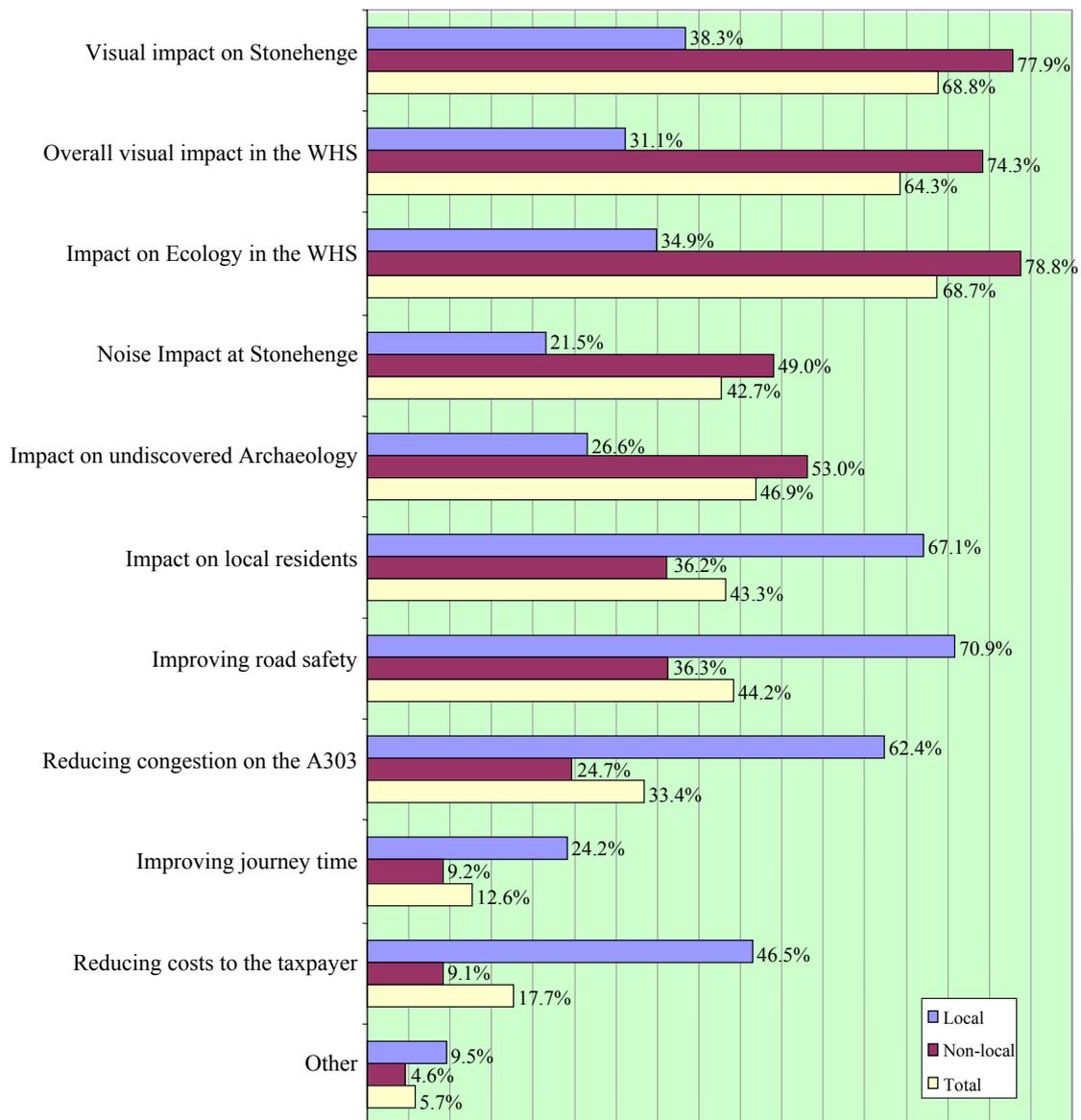
This comment has also been noted and counted amongst other comments and reasons and reported, but again no adjustment was needed due to the relatively small numbers involved.

3.6 Factors Affecting Option Choice

Question 3 of the questionnaire asked the respondent to indicate which factors from a list of 10 they considered ‘very important’, ‘quite important’ or ‘unimportant’ bearing in mind the aims of the A303 Stonehenge Scheme.

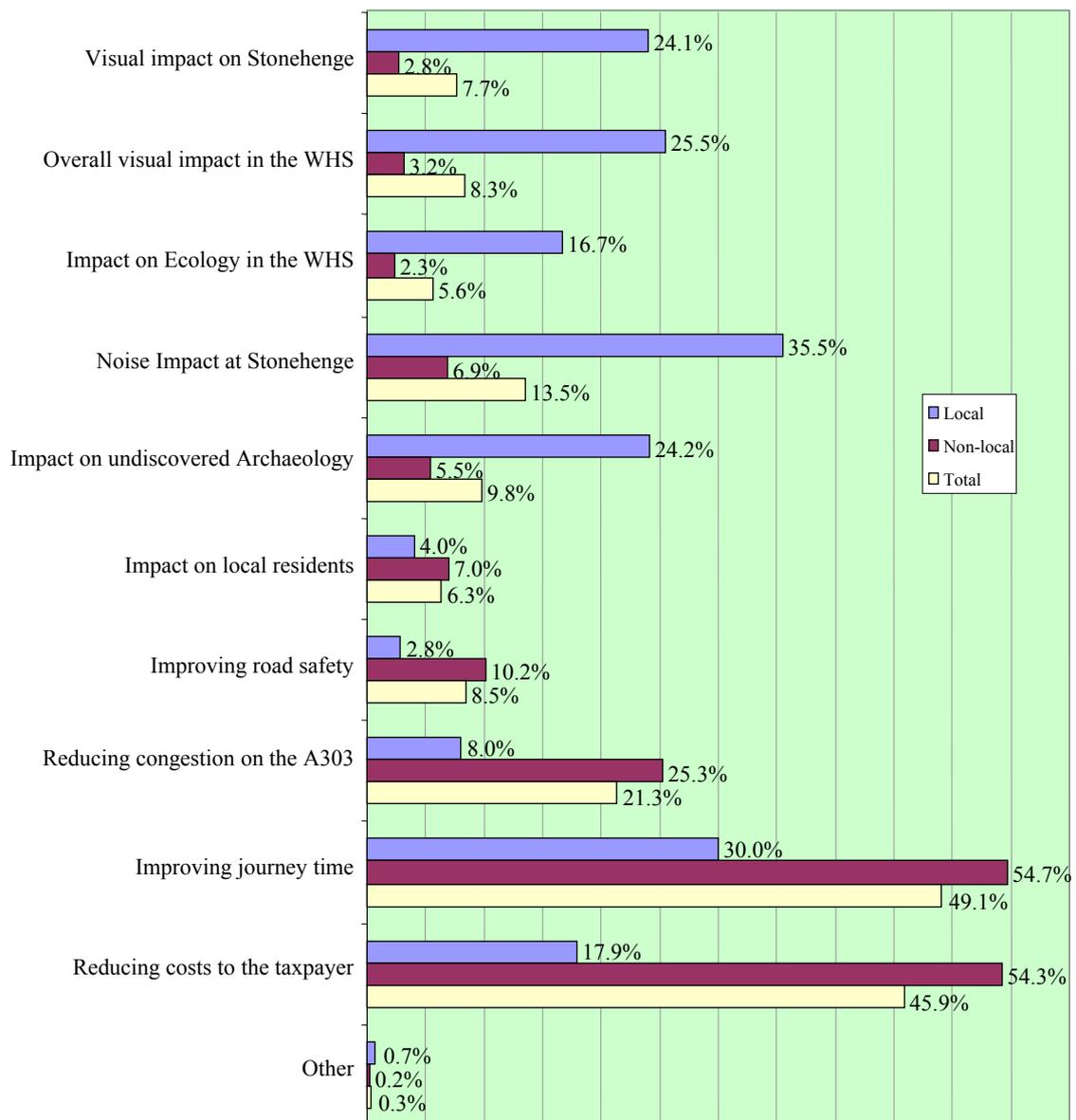
Charts 3.4 and 3.5 below illustrate the results of the ‘very important’ and ‘unimportant’ choices. The full results are presented in Appendix C.

Chart 3.4 ‘Very Important’ factors affecting option choice



As can be seen, local respondents consider the issues of improving road safety (70.9%), impact on local residents (67.1%) and reducing A303 congestion (62.4%) to be the most important factors. Whereas non-local respondents consider impact on ecology (78.8%), visual impact on Stonehenge (77.9%) and on the World Heritage Site (74.3%) to be the most important factors. Overall, all respondents also consider ecology, visual impact on Stonehenge and on the World Heritage Site to be the most important factors.

Chart 3.5 ‘Unimportant’ factors affecting option choice



In terms of what is unimportant, local respondents consider that noise impact on Stonehenge is the most unimportant factor (35.5%), followed by improving journey time (30.0%) and visual impact in the WHS (25.5%). Non-local respondents consider improving journey time (54.7%) and reducing costs to the taxpayer (54.3%) to be the most unimportant factors. Overall, all respondents also consider improving journey time and reducing costs to the taxpayer to be the most unimportant factors.

Respondents were also invited to enter other issues that they felt were important. The full analysis of these comments is given in Appendix C.

3.7 Local Responses

3.7.1 Introduction

This Section presents a summary of the results from the 1072 questionnaires and 33 letters submitted by local respondents, where appropriate split by local area. The full results are presented in Appendix C.

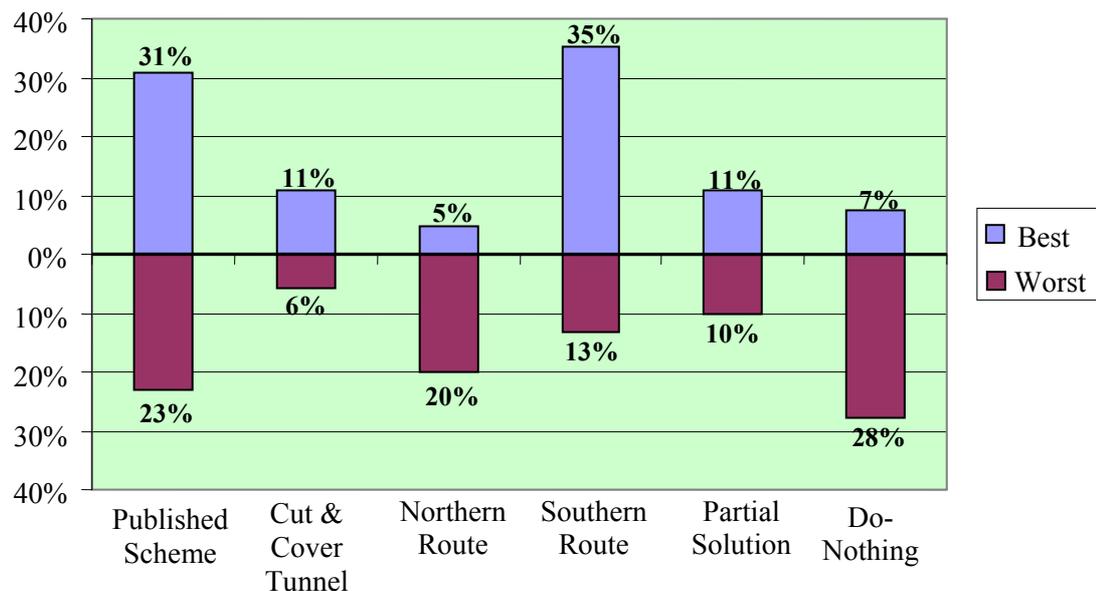
Only a relatively small number of local respondents (60) were identified as responding in accordance with the RSPB campaign, so no separate analysis with and without these responses is deemed necessary in this Section.

3.7.2 Analysis

Option Preference

Chart 3.6 below illustrates the results from Question 1 of the questionnaire that asks respondents for their option preferences, together with any option preference noted in the written responses. The full results are given in Appendix C.

Chart 3.6 Option preference of local respondents



It can be seen that local respondents (35%) prefer the Southern Route, with the Published Scheme as their second preference (31%). The Published Scheme also comes out as the second worst option (23%), only eclipsed by a Do-Nothing scenario (28%). The Northern Route, the Cut & Cover Tunnel and the Partial Solution gain little support (5%, 11% and 11% respectively). Figures 3.1 and 3.2 show these same results broken down by local area.

Respondents from the Woodford valley (55%), villages to the east of the general area (46%) and Salisbury and Wilton (41%) generally prefer the Published Scheme. Conversely, respondents from the Wylde valley (38%) and Amesbury (31%) consider this the worst option. Respondents from villages to the west of Salisbury (Chilmark etc) have selected the Published Scheme as both best (35%) and worst option (28%).

Respondents from Larkhill, Durrington, Bulford, Netheravon and Tidworth consider the Northern Route to be the worst (41%), being the areas that would be most affected by it. No area considers the Northern Route to be the best option

Respondents from Larkhill and area (46%), Shrewton and area (41%), Amesbury (39%), Winterbourne Stoke (36%) and the Wylde valley (34%) all consider the Southern Route to be the best, though respondents from villages in the Woodford valley consider it to be the worst option (51%), as this is the route that would have the most impact upon them.

None of the areas considers the Cut & Cover Tunnel or the Partial Solution to be either the best or the worst. However, the Cut & Cover Tunnel achieved reasonable support from respondents in the Woodford valley (19%) and respondents from Winterbourne Stoke selected the Partial Solution as their second worst choice (25%).

Most areas agree that a Do-Nothing option is a poor choice, being either the first or second worst choice for all areas.

Reasons for Option Preference

Question 2 of the questionnaire asked respondents to indicate the reasons for their option preference. Table 3.1 below lists the three main reasons stated for each of the options (including Do-Nothing) being selected as a best or worst choice. The number of respondents stating each reason is given along with the corresponding percentage that the number represents of the total preferring the option in Question 1 of the questionnaire. The full results are given in Appendix C.

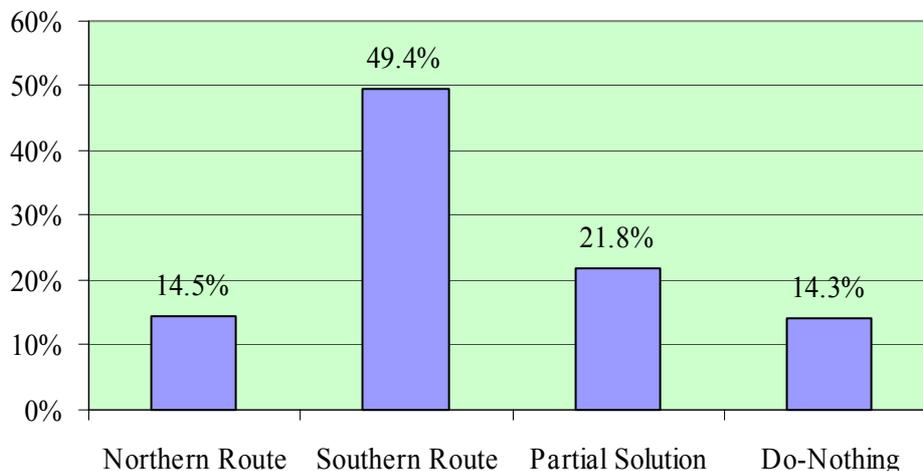
Table 3.1 Main reasons for local respondents choosing each option as best or worst

		Reason	No.	% of local preference
Published Scheme	Best	Improves/protects Stonehenge setting/views/removes clutter	36	11.4%
		It solves the existing traffic problems	30	9.5%
		To minimise environmental impacts	29	9.2%
	Worst	Scheme/Tunnel costs too much	62	26.8%
		Will cause traffic chaos if an accident happens	5	2.2%
		It is complete over-kill/unnecessary/unsustainable	5	2.2%
Cut & Cover	Best	Cost effective solution / best value for money	22	19.6%
		To minimise environmental impact	18	16.1%
		Cut & Cover is cheapest tunnel solution	15	13.4%
	Worst	Would leave visible legacy (mound)	5	8.5%
		Damage to archaeology / new finds would delay work	3	5.1%
		Environmentally damaging	3	5.1%
Northern Route	Best	Takes road furthest from Stonehenge/core of WHS	9	18.8%
		Cheap / good value for money	5	10.4%
		Least environmentally damaging	4	8.3%
	Worst	Too much impact on Larkhill / Durrington	78	39.6%
		Negative impacts on the WHS/cultural heritage	19	9.6%
		It has large impacts on environment	17	8.6%
Southern Route	Best	Good value for money/cheapest	146	40.6%
		Least impact on residents of Larkhill & Durrington	115	31.9%
		Short route	26	7.2%
	Worst	Adverse impact on Stone Curlew habitat at Normanton Down (RSPB encouraged response)	24	18.5%
		Because it cuts through scenic downland / reserve	18	13.8%
		Because it has large impacts on environment	12	9.2%
Partial Solution	Best	Cheapest / value for money	26	23.6%
		Solves problems at Winterbourne Stoke/Countess /A344	20	18.2%
		Keeps views of Stones	19	17.3%
	Worst	It will do nothing significant to reduce congestion	23	22.8%
		It is expensive with little gain	12	11.9%
		Does not meet the scheme objectives	7	6.9%
Do-Nothing	Best	Keeps views of Stonehenge from A303 / attracts tourists	9	11.8%
		Benefits few people / money could be better spent	8	10.5%
		See no problem with current road	8	10.5%
	Worst	It does nothing to relieve the existing traffic problems	25	9.0%
		This is not an option / something needs to be done	14	5.1%
		Leaves road safety and local access problems	10	3.6%

Non-Tunnel Option Preference

Questions 4 of the questionnaire asked respondents to indicate their option preference should the Government decide that a tunnel was too expensive. Chart 3.7 illustrates these results graphically. The full results are given in Appendix C.

Chart 3.7 Non-tunnel option preference of local respondents

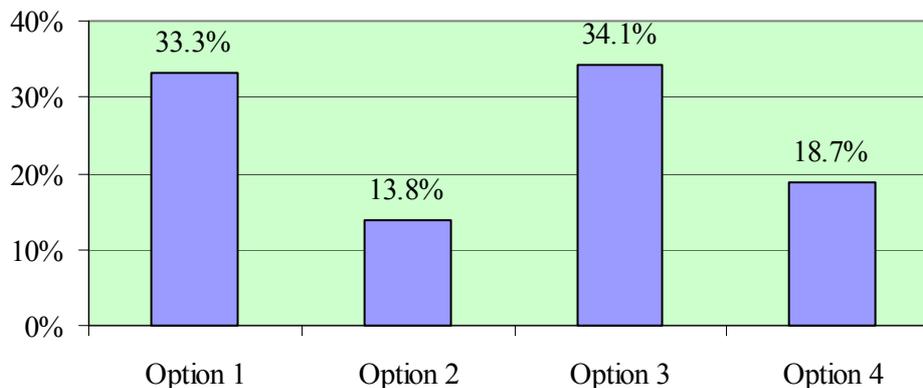


It can be seen that almost half of local respondents (49.4%) would favour the Southern Route should the Government decide that a tunnel was too expensive.

Partial Solution Junction Preference

Question 5 of the questionnaire asked those respondents who preferred the Partial Solution to indicate their preference from the four junction options presented. Chart 3.8 illustrates these results graphically. The full results are given in Appendix C.

Chart 3.8 Partial Solution junction option preference of local respondents



As can be seen, most local respondents favour Junction Option 3 (34.1%), with Option 1 (33.3%) being close second. Both of these Options provide relatively low-cost, at-grade solutions. The least favoured arrangement is Option 2 (13.8%), which would have no connection between the A303 and A360 and could lead to local rat-running.

Comments

Question 6 of the questionnaire invited respondents to offer further comment. Table 3.2 below summarises the most frequent comments. The full results are given in Appendix C. The percentage against each comment is relative to the total number of questionnaires and written submissions submitted by local respondents.

Where respondents proposed, supported or objected to alternative routes and proposals, these are presented separately in Section 3.10.

Table 3.2 Most frequent comments made by local respondents

Comment	No.	% of total local response
Supports simple on-line dualling (through the WHS)	118	10.7%
Make a decision / get on with it!	103	9.3%
Too much is being / has been spent in preparation / consultation etc. without action	49	4.4%
A344 / A303 junction is dangerous and needs to be closed as soon as possible	48	4.3%
Winterbourne Stoke Bypass is essential / urgent.	45	4.1%
Supports the West/Mills on-line proposal	44	4.0%
Want to have views of Stonehenge from the A303	43	3.9%
Supports simple on-line dualling in cutting	30	2.7%
Archaeological finds are important but should not be put ahead of peoples' needs and safety	24	2.2%
Partial Solution is a waste of money; it is not a solution at all/achieves nothing	23	2.1%
Project has cost far too much to the tax payer	21	1.9%
Supports AR4 (Parker Route)	21	1.9%
We should get on and build the Published Scheme, despite the cost, to deliver long term benefits to Stonehenge / the WHS	20	1.8%
It is disgraceful that after so many years of studies nothing has happened.	19	1.7%
Doing nothing is not an option / will just have to do something in the future at higher cost	18	1.6%
The safety of road users is more important than cost /current situation is a black spot / action must be taken	17	1.5%
It is important to dual this whole section as soon as possible.	17	1.5%
The 2.1km bored tunnel represents an "exceptional environmental scheme" (RSPB encouraged response)	17	1.5%
Improvements to Countess Roundabout are essential	17	1.5%
Only the Published Scheme is acceptable - other options will cause damage to WHS/heritage/environment/biodiversity/habitat	15	1.4%
The longer this is left without any action or proper solution the greater the cost will be in the future	15	1.4%
It is wrong that elite / heritage organisations are ruling this local issue	14	1.3%
Believe HA and EH have not listened to the views of the local people / locals should be put first	14	1.3%

As can be seen, the most frequent comment was support for a simple on-line dualling (10.7%), closely followed by "make a decision / get on with it" (9.3%). Comments supporting on-line solutions through the WHS totalled 17.4% of the local response.

3.8 Non-Local Responses

3.8.1 Introduction

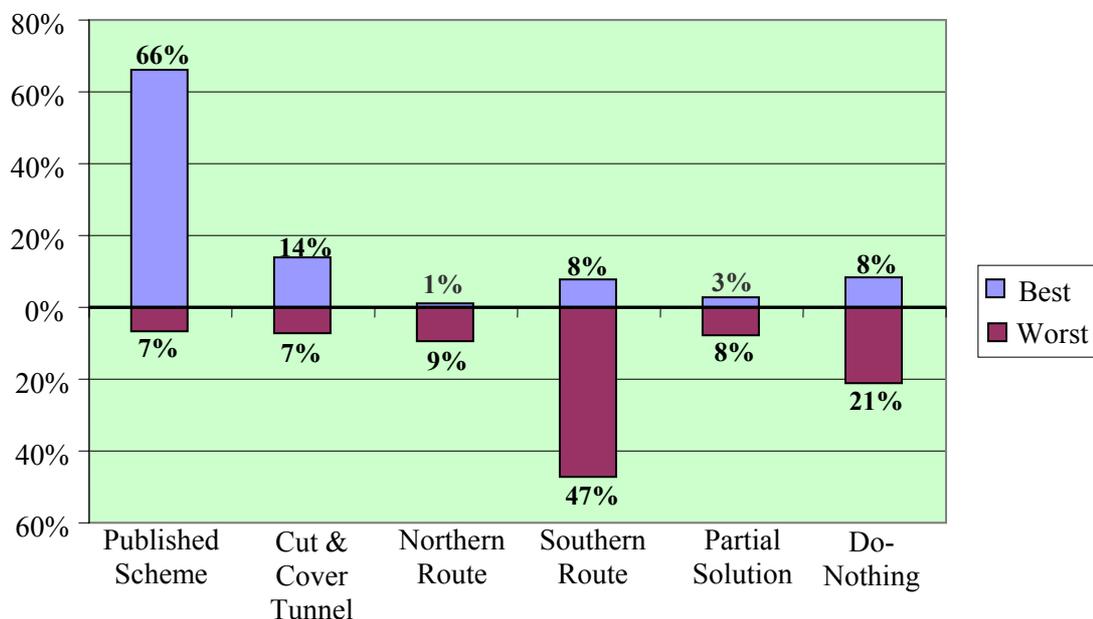
This Section presents the results from the 3505 questionnaires and 98 letters submitted by non-local respondents. The 97 responses submitted from unknown addresses are included in these numbers.

3.8.2 Analysis

Option Preference

Chart 3.9 below illustrates the results from Question 1 of the questionnaire that asks respondents for their option preferences, together with any option preferences noted in written responses. The full results are given in Appendix C.

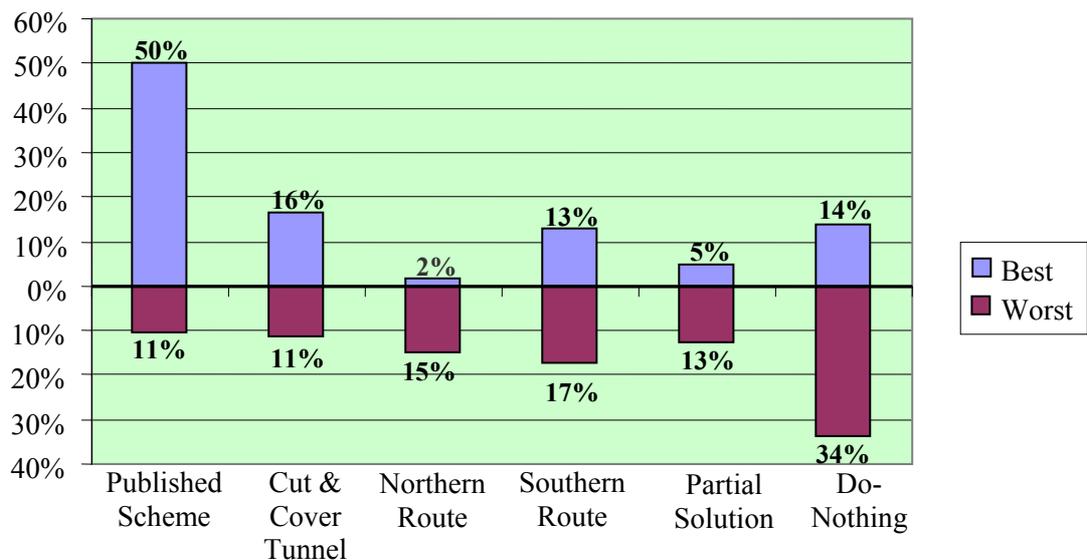
Chart 3.9 Option preference of non-local respondents



It can be seen that the Published Scheme is by far the preferred option of non-local respondents, with 66% of best votes and only 7% selecting it as their worst choice. Conversely the Southern Route attracted only 8% of best votes but 47% of worst.

However, as discussed earlier in Section 3.5.3, the large proportion of questionnaires submitted following the RSPB campaign format has had a significant affect on this outcome. Chart 3.10 below shows the results with the RSPB influence excluded.

Chart 3.10 Option preference of non-local respondents excluding RSPB influence



As can be seen, the Published Scheme is still the option favoured by non-locals, but with a lower 50% of the best votes.

The worst option is now seen to be the Do-Nothing scenario (34%), with the Southern Route changed from worst option to second worst with 17% of the votes.

Reasons for Option Preference

This Section presents the results from Question 2 of the questionnaire that asked respondents to indicate the reasons for their option preference. Table 3.3 below lists the first three reasons stated for each of the options (including Do-Nothing) being selected as a best or worst choice. The full results are given in Appendix C. The number of respondents stating each reason is given along with the corresponding percentage that the number represents of the total preferring the option in Question 1 of the questionnaire.

Table 3.3 Main reasons for non-local respondents choosing each option as best or worst

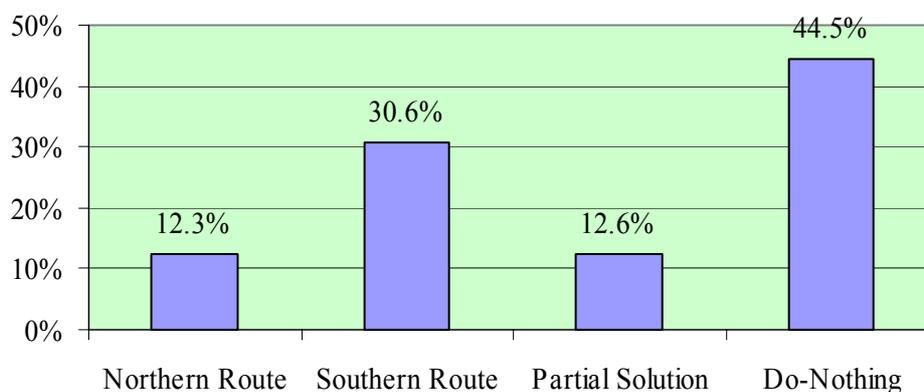
		Question 2 - Reasons for Route Choice	No.	% of non-local preference
Published Scheme	Best	Least impact on biodiversity and chalk downland habitat (RSPB encouraged response)	841	35.6%
		Has minimal effect on monuments / cultural heritage / archaeology	220	9.3%
		It improves / protects Stonehenge setting / views / removes clutter	182	7.7%
	Worst	Scheme / Tunnel costs too much	23	11.0%
		Negative impacts on history / WHS / irreversible scar on landscape	10	4.8%
		Too environmentally damaging	8	3.8%
Cut & Cover	Best	Impact on ecology/biodiversity minimised - habitat reunited	104	21.1%
		To minimise environmental impact	58	11.8%
		To protect the World Heritage Site/monuments/archaeology	57	11.6%
	Worst	Damage to archaeology / new finds would delay work	45	20.0%
		Would leave visible legacy (mound)	25	11.1%
		Changes the landscape / does not preserve landscape	8	3.6%

		Question 2 - Reasons for Route Choice	No.	% of non-local preference
Northern Route	Best	Takes the road furthest from Stonehenge / core of WHS	18	46.2%
		Cheap / good value for money	6	15.4%
		Furthest from Normanton Down / interferes least with barrows	4	10.3%
	Worst	Negative impacts on the WHS / cultural heritage / archaeology	45	15.2%
		Too much impact on Larkhill / Durrington	30	10.1%
		Negative impacts on ecology / wildlife	22	7.4%
Southern Route	Best	Good value for money / cheapest	98	35.9%
		Has least impact on residents of Larkhill and Durrington	55	19.9%
		Gets traffic away from Stonehenge / returns it to peace	45	16.3%
	Worst	Adverse impact on Stone Curlew habitat at Normanton Down (RSPB encouraged response)	684	47.9%
		Will affect undiscovered archaeology / impacts on archaeology	32	2.1%
		Negative impacts on ecology/biodiversity/wildlife	29	1.9%
Partial Solution	Best	Causes the least damage to monuments / archaeology	22	21.4%
		Solves problems at Winterbourne Stoke/Countess /A344	21	20.4%
		Options are left open for future better ideas	15	14.6%
	Worst	It is expensive with little gain	24	9.6%
		Will do nothing significant to reduce congestion	18	7.2%
		Will cost more in the future when a proper solution needs to be found	18	7.2%
Do-Nothing	Best	No further damage to undiscovered archaeology / heritage	45	15.2%
		Less disruption to wildlife / biodiversity / ecology	33	11.1%
		Keeps views of Stonehenge from A303 / attracts tourists	28	9.4%
	Worst	This is not an option / something needs to be done	56	8.4%
		Perpetuates 'national disgrace' of Stonehenge	29	4.3%
		Does nothing to relieve the existing traffic problems	21	3.1%

Non-Tunnel Option Preference

Chart 3.11 below illustrates the non-local results to Question 4 of the questionnaire that asked respondents to indicate their option preference should the Government decide that a tunnel was too expensive. The full results are given in Appendix C.

Chart 3.11 Non-tunnel option preference of non-local respondents



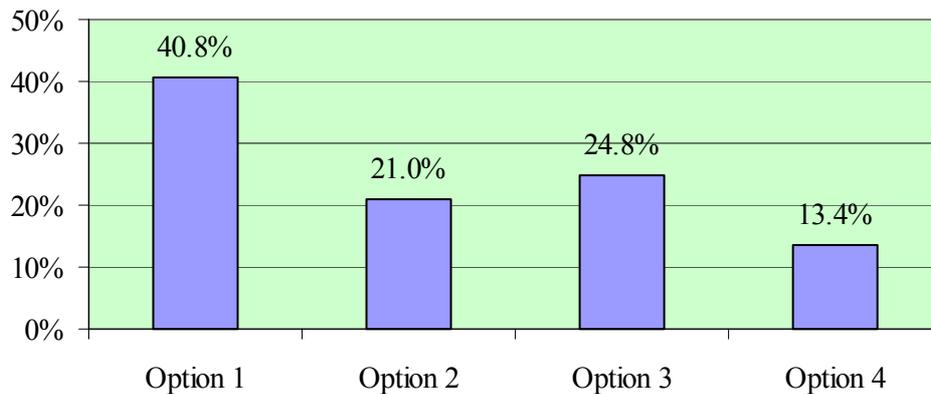
It can be seen that almost half of non-local respondents (44.5%) would prefer to do nothing should the Government decide that a tunnel was too expensive. A significant proportion

(30.6%) would favour the Southern Route, with less support for the Partial Solution (12.6%) or the Northern Route (12.3%).

Partial Solution Junction Preference

Chart 3.12 below illustrates the non-local results to Question 5 of the questionnaire that asked those respondents who preferred the Partial Solution to indicate their preference from the four junction options presented. The full results are given in Appendix C.

Chart 3.12 Partial Solution junction preference of non-local respondents



As can be seen, most non-local respondents favour Junction Option 1 (40.8%), which would provide the simplest and cheapest at-grade solution. The least favoured arrangement is Option 4 (13.4%), which would provide a relatively expensive grade-separated solution.

Comments

Table 3.4 below shows the most frequent comments by non-local respondents recorded in Question 6 of the questionnaire and in written responses. The full results are given in Appendix C. The percentage against each comment is relative to the total number of questionnaires and written responses submitted by non-local respondents.

Where respondents proposed, supported or objected to alternative routes and proposals, these are presented separately in Section 3.10.

Table 3.4 Most frequent comments made by non-local respondents

Comment	No.	% of total non-local response
The Published Scheme represents an 'exceptional environmental scheme' (RSPB encouraged response)	542	14.6%
Neither Northern nor Southern Routes reduce huge impact of A303 on the WHS, the primary objective of the whole project (RSPB encouraged response)	348	9.4%
Only the Published Scheme is acceptable - other options will cause damage to WHS/heritage/environment/biodiversity/habitat	153	4.1%
Heritage / archaeology should take precedence over cost / traffic	117	3.2%
Environment should prevail over all other factors including cost	112	3.0%
Costs are insignificant compared with other government/infrastructure spending	101	2.8%
Make a decision / get on with it!	103	2.7%
We should get on and build the Published Scheme, despite the cost, to deliver long term benefits to Stonehenge/the WHS	90	2.4%
Too much is being/has been spent in preparation/consultation etc. without action	71	1.9%
Supports Heritage Action	67	1.8%
Government should bite the bullet and undertake the best scheme / get on with the Published Scheme, whatever the cost	61	1.6%

Comment	No.	% of total non-local response
Benefits of the Published Scheme outweigh costs involved - increase in tourism will offset costs	57	1.5%
Road improvements do not solve congestion / give long term solution - they just create more traffic	53	1.4%
Supports a longer bored tunnel	49	1.3%
The longer this is left without any action or proper solution the greater the cost will be in the future	48	1.3%
Partial Solution is a waste of money, it is not a solution at all / achieves nothing	38	1.0%
We should take the one chance to construct a prestigious scheme / secure future of Stonehenge, and the environment for the pride of the country / to set standards to others.	37	1.0%
A tunnel is the only sustainable option for the future / achieves the aims of the project / long term solution	37	1.0%
Want to have views of Stonehenge from the A303.	34	0.9%
Government lacks courage / commitment to get on with the task / is not competent / is not committed to the WHS & Environment.	34	0.9%
Due to importance of project, no expense should be spared / can afford it / should spend more to get it right.	34	0.9%
A303 / A344 junction is dangerous and needs to be closed ASAP	33	0.9%

It can be seen that the most popular comments by far are those encouraged by the RSPB campaign in support of the Published Scheme and against the Northern and Southern Routes. The next most frequent comment also supports the Published Scheme (4.1%).

Seven of the most frequent comment categories relate to respondents' opinions that costs are less important relative to the potential benefits of the scheme. Summing these comments makes a total of 15.4%. Conversely only 1.9% of respondents express a view that too much money is being spent.

3.9 Corporate Responses

Numerous stakeholders, statutory and non-statutory authorities, organisations and bodies were sent questionnaires by post at the start of the consultation period. Many of these, and some others, have submitted responses and this Section summarises their various views. A summary table of corporate bodies' option preferences is included in Appendix C.

3.9.1 Statutory Environmental Agencies

English Heritage

English Heritage stated that it considers only the Published Scheme to be acceptable and are strongly supportive of this option. All other options are deemed unacceptable because they either damage archaeology and the WHS or fail to deliver the aims of the *WHS Management Plan*.

English Nature, the Countryside Agency and the Rural Development Service

These three bodies sent a joint response in their future guise as Natural England. They consider that the Published Scheme presents the greatest net benefit for landscape in the World Heritage Site. They consider the next least damaging option to be the Partial Solution which they would favour should the Published Scheme not proceed, but noting that it does not lessen the impact of the A303 on the World Heritage Site and Stonehenge, and also suggesting a smaller-scale Winterbourne Stoke Bypass. The Northern Route is considered the worst option due to severe adverse impacts on the landscape and biodiversity, and it is considered that further work would be needed to mitigate such impacts on this and on the Southern Route, should either be pursued.

The bodies consider the Cut & Cover Tunnel option to be visually intrusive in its effect on the landform setting to Stonehenge.

Environment Agency

The Environment Agency considers the Published Scheme to be acceptable in all respects. It would not object in principle to the Cut & Cover Tunnel, Southern Route or the Partial Solution, although there are some issues to be addressed if these options were to proceed. It has no objection in principle to any of the consultation routes subject to agreement during detailed design on construction methods and mitigation to protect private abstractions close to the route. It would object to routes within the National Trust Larkhill Corridor. These are considered unsuitable because of the risk of polluting groundwater supplies.

3.9.2 Local, Regional and National Government Organisations

Wiltshire County Council

Wiltshire County Council (WCC) resolved as follows.

- WCC considers that the continuing uncertainty about the Government's commitment to promoting a solution to traffic problems on the A303 at Winterbourne Stoke and Stonehenge must be brought to an end without further delay
- WCC re-states its existing policy to oppose closure of the A344 at Stonehenge until the A303 is improved to dual carriageway standard
- WCC reaffirms its support for the Published Scheme but if cost increases make this unaffordable it would support the Cut & Cover Tunnel as the next best option
- WCC encourages the Department for Transport to consider an online dual carriageway scheme as proposed by Councillors Mills and West as it commands much local support and has the advantage of affordability

The second resolution above means that WCC would oppose the Partial Solution, since this option allows for closure of the A344 without improvement of the A303 to dual carriageway standard.

Salisbury District Council

Salisbury District Council supports the Published Scheme as the best option to deliver both the critical infrastructure and environmental improvements for Stonehenge and the WHS. It rejects all other options presented for consultation because they would all produce outcomes in conflict with the objectives of the *WHS Management Plan* and Local Plan Policies.

It rejects all other options presented for consultation because they would produce outcomes in conflict with the objectives of the *WHS Management Plan* and Local Plan Policies.

Berwick St James Parish Council

Berwick St James Parish Council had previously expressed support for the tunnel as they understood that without the tunnel the Winterbourne Stoke Bypass may not go ahead. Now they express a unanimous support for a landscaped unobtrusive surface dual carriageway along the line or within 200m of the existing A303 due to the fact it would provide a short, direct route and would have minimum effect on the countryside and local people. It would provide a cheaper and quick solution, keep the views of the Stones from the A303 and accommodate provision for a Visitor Centre car park.

Durrington Parish Council

Durrington Parish Council rejects both the Published Scheme and the Cut & Cover Tunnel on the basis of cost and does not support the Northern or Southern Routes. It rejects the Partial Solution as it does not provide a dual carriageway solution. Instead it supports the idea of a surface on-line dual carriageway improvement of the A303 through the WHS.

Winterbourne Stoke Parish Council

Winterbourne Stoke Parish Council reaffirms its support for the Published Scheme but offers no view on the other options presented for consultation. It does, however, consider that the Winterbourne Stoke Bypass should proceed regardless as a stand-alone scheme and, if the Published Scheme is unaffordable, that the A303 through the WHS should be upgraded to dual carriageway in cutting.

South West of England Regional Development Agency

The South West of England Regional Development Agency (SWRDA) advises that the A303 Stonehenge Improvement forms part of the Second Strategic Route from London to the South West that arose from the London to South West and South Wales Multi-Modal Study (SWARMMS) with Ministerial support. SWRDA states that only options which would allow delivery of the Second Strategic Route should be taken forward. It has not taken a view on which option best meets the balance between local, regional and national interests. However, SWRDA does have concerns over the Partial Solution, which would not achieve the commitment to the Second Strategic Route. It also notes the limits on the Regional Funding Allocation for transport investment and the need for national funds to meet the associated heritage costs of this scheme.

SW Regional Assembly

The South West Regional Assembly expressed the same views as SWRDA.

Defence Estates

The Defence Estates' response comments only on the Northern Route and on the National Trust's alternative northern corridor (see Para 3.10.4), as both these would affect Ministry of Defence (MOD) assets. It is concerned about unacceptable noise levels for residents, the proximity of the Fargo ammunition compound and safety issues related to a major new highway running adjacent to the area of Salisbury Plain used for live artillery firing. Based on the impacts above, consideration would have to be given to relocating the MOD facility. All of these concerns would also apply to the National Trust corridor, but in addition a route through Larkhill would have significant impact on the barracks and married quarters, a church, a school and a medical centre, and pass too close to Fargo ammunition compound. The operation of Larkhill Garrison could be severely compromised, possibly necessitating closure with considerable relocation expense estimated to be in the order of £500m. For all these reasons, the Defence Estates would raise strong objections to such northern options.

All Party Parliamentary Group on World Heritage Sites

The Group voted unanimously, on 27 June, to back the Published Scheme for the A303 at Stonehenge, giving cross-party support for the (2.1 km) short-bored tunnel. The Group also agreed to write to the Department for Transport with a strong message of support for the tunnel.

3.9.3 Other Organisations

A36/A350 Corridor Alliance

The A36/A350 Corridor Alliance considers the Published Scheme to be hugely damaging to the WHS and the four other options presented for consultation to be worse. It opposes all road-building in the WHS and calls on the Government to develop a strategy to reduce traffic along the A303.

CBI South West

The CBI South West stresses the importance of the Second Strategic Route. It also highlights the strategic national importance of the scheme and the need for national funding to top up the Regional Funding Allocation. It notes that a Partial Solution would not deliver value for money and states that a full solution option must be selected and implemented without delay.

Council for British Archaeology

The Council for British Archaeology (CBA) states that whilst the four 'whole-scheme' options have some advantages, these are outweighed by significant adverse impacts on the landscape and topography of the WHS, on its archaeology, setting and natural heritage.

The CBA finds the Northern and Southern Routes wholly unacceptable. It notes that the bored tunnel of the Published Scheme would have less impact than the Cut & Cover Tunnel, but that the major infrastructure required for both routes would be unacceptable intrusions into the WHS. The CBA considers the Partial Solution does not provide a satisfactory solution and would like to see a more sensitive junction option for the A303/A360 wholly outside the WHS.

However, it considers the Do-Nothing option to be unacceptable and instead suggests that small-scale interim measures could be put in place while a more sustainable solution is explored.

The Council for British Archaeology Wessex Region (CBA Wessex) submitted a response that provided some support for the Partial Solution but otherwise put forward similar views to those of CBA noted above.

Country Land and Business Association

The Country Land and Business Association (CLA) considers the only sensible option to be the Published Scheme, with the next best alternative being an on-line widening. It believes the Northern and Southern Routes to be wholly unacceptable due to impacts on the natural and historic environment and on local communities.

CPRE Wiltshire and National

The Campaign to Protect Rural England (CPRE) Wiltshire and National do not support any of the five options presented, and would prefer a longer (4.5km) tunnel or for the route to be re-routed outside the World Heritage Site. In the short-term CPRE proposes that interim measures such as closure of the A344 and traffic management solutions at Longbarrow Crossroads and Airman's Corner should be implemented.

Friends of the Earth (South West England)

Friends of the Earth (South West England) recommend the rejection of all five options presented. Instead it recommends short-term, small-scale, less intrusive and more affordable means of meeting the *WHS Management Plan*. Such measures include closure of the A344 and encouraging modal shift.

Guildford Environmental Forum

The Guildford Environmental Forum shares the concerns of the RSPB about the Northern and Southern Routes and supports the Published Scheme.

International Council on Monuments and Sites UK (ICOMOS-UK)

ICOMOS-UK considers that none of the options presented offers a solution that fully respects the international significance of Stonehenge as a World Heritage Site.

It considers that severance caused by the Northern, Southern and Cut & Cover Tunnel Routes would inflict serious damage on the archaeology and spatial arrangements of the landscape. The Partial Solution would damage barrows to the west of the Site and would lead inexorably to a future on-line widening solution. ICOMOS-UK objected to the Published Scheme at the 2004 Public Inquiry and remains of the view that it would be "*highly detrimental to the value and integrity of the World Heritage Site as a whole*".

However, ICOMOS-UK does not consider that doing nothing is acceptable. Instead it calls for a staged approach, including short-term measures such as closure of the A344 past Stonehenge, traffic calming in the WHS and improvements to Longbarrow Crossroads and Countess Roundabout. It also calls for the consideration of other options, such as a route to the north of the WHS.

Pagan and Druid Communities

This response was on behalf of three organisations: Honouring the Ancient Dead (HAD), The Druid Network (TDN) and the Council of British Druid Orders (CoBDO). The organisations consider the Published Scheme to be the most favourable option, as it would remove the noise and view of the road from Stonehenge and not disturb open countryside. The Pagan and Druid community would not support the Northern Route, due to archaeological and environmental impacts and the severing of Stonehenge, Durrington Walls and Woodhenge, and consider that a road protest would ensue should this route be pursued. The group sees the Southern Route as superior to the Northern Route, though notes that modification and mitigation would be required to minimise impacts on Normanton Down. The Pagan and Druid Community would not support the Cut & Cover Tunnel, largely due to the open excavation during construction and the resultant embankment in Stonehenge Bottom, and consider that a major road protest would ensue were this option pursued. Similarly the Partial Solution would not be supported and would provoke protest.

RAC Foundation for Motoring Ltd

The RAC considers that the Published Scheme best protects the unique environment of the WHS and should be implemented without delay. It considers the Cut & Cover Tunnel would have a greater impact on archaeological remains and should not be recommended. The RAC states that surface routes (i.e. the Northern and Southern Routes and the Partial Solution) are a false economy in that environmental costs should be considered above financial ones.

Road Block

Road Block objects to all five options. It supports the Do-Nothing option and the closure of the A344.

Royal Archaeological Institute

The Royal Archaeological Institute wishes to see a solution that "*respects the integrity of the Stonehenge with Avebury World Heritage Site*", and comments "*that the current schemes still fail to do this*". It therefore objects to all the options presented for consultation.

Royal Society for the Protection of Birds

The RSPB considers the Published Scheme to be the best option as it is the only option that meets the objectives of the *WHS Management Plan*. The RSPB is strongly opposed to the Southern Route, which it asserts would destroy its Normanton Down Nature Reserve. It is also strongly opposed to the Northern Route, which it considers would also destroy or damage wildlife. The RSPB notes the benefits of the Cut & Cover Tunnel, but believes the option does not provide an integrated solution that protects both biodiversity and cultural heritage. It does not see the merits of the Partial Solution as it would not meet any of the objectives of the *WHS Management Plan*.

Society of Antiquaries of London

The Society of Antiquaries of London has come to the conclusion that the Published Scheme is the best-balanced option for achieving the objectives of the *WHS Management Plan* and for deriving maximum public benefit.

It considers that the Northern and Southern Routes and the Partial Solution are inferior due to their negative impacts on archaeology and the natural environment of the WHS and their failure to realise the objectives of the *WHS Management Plan*. It considers them a false economy in environmental terms. The Society notes that the Cut & Cover Tunnel would have a far more profound impact on the archaeology and natural environment of the WHS than the Published Scheme and is concerned at the congestion and damage that would be caused by traffic management measures during construction.

It notes the superior advantages that a bored tunnel would bring and also notes the significant delay that consideration of further options would bring. The Society calls on the Government to approve the Published Scheme without further delay.

The AA Motoring Trust

The AA Motoring Trust believes that the removal of roads and traffic from around Stonehenge must be at the heart of the Review, and for this reason the Partial Solution is unacceptable.

With regard to funding it believes that the uniqueness of Stonehenge means that different assessment criteria should be applied and perhaps new sources of funding explored.

It advocates the adoption of innovative solutions with particular reference to the use of tunnels.

The Avebury Society

The Avebury Society considers that none of the five options presented meet the requirements of the World Heritage Convention for the protection of cultural heritage in the Stonehenge and Avebury WHS. They express support for the press release of 30 March 2006 by ten conservation bodies, advocating closure of the A344/A303 junction in the near future.

The British Museum

The British Museum state that they believe the Published Scheme is the best option currently available and achievable to protect and develop the future of the site. They also comment that the Published Scheme appears to be the only scheme which fully delivers the principal objective of the Stonehenge Management Project and urge its adoption.

The National Trust

The National Trust is a key stakeholder and landowner with an inalienable holding of much of the land within the World Heritage Site.

The National Trust maintains its view that there are significant advantages to be gained from a tunnel longer than that included in the Published Scheme. It also considers that the Inspector's findings from the 2004 Public Inquiry in favour of the Published Scheme are flawed. None of the five options put forward for consultation are acceptable to the Trust.

It recommends a further study of options, including longer tunnels and northern routes within a corridor that passes through Larkhill. It suggests that the study should assess environmental costs and benefits over the longer term and take account of the economic value of Stonehenge and its landscape as a tourist attraction, as well as the UK's obligation to protect the WHS.

The Prehistoric Society

The Prehistoric Society opposes the Published Scheme because of the "*inadequate length of tunnel*" and considers that none of the options presented should be accepted.

Transport 2000

Transport 2000 is opposed to the Published Scheme and also rejects the four other options presented for consultation. It considers the Northern and Southern Routes would have unacceptable impacts on the WHS and biodiversity and the Cut & Cover Tunnel would have unacceptable environmental impacts at Stonehenge Bottom. It sees the Partial Solution as partial implementation of the Published Scheme that would inevitably lead to future construction of a tunnel. Like Friends of the Earth, Transport 2000 proposes short-term and more affordable means of meeting the *WHS Management Plan*, such as closure of the A344 and strategic traffic management measures.

UK National Commission for UNESCO

The United Kingdom National Commission (UKNC) for UNESCO urges the Government to meet its responsibilities under the UNESCO World Heritage Convention for this iconic Site, to identify, protect, conserve, present and transmit to future generations the outstanding universal heritage values of Stonehenge.

UKNC considers the Published Scheme to be the best-balanced option for achieving a sustainable solution to meet the objectives of the *WHS Management Plan*, the principles of the Convention and for deriving substantial public benefit. It considers the Cut & Cover Tunnel would have a profound detrimental impact on archaeological remains and that the Southern and

Northern Routes would be significantly damaging to archaeological and historical sites, to the integrity of the WHS and the setting of monuments, to local residents, and to the natural environment. It notes that the Partial Solution would achieve none of the aims of the *WHS Management Plan*.

Wiltshire Wildlife Trust

Wiltshire Wildlife Trust states that in its view the Published Scheme is the only acceptable option and that the benefits it will provide for the WHS, biodiversity and visual quality of the landscape far outweigh the initial investment. The Trust objects to the Northern and Southern Routes on ecological grounds. The Trust also objects to the Cut & Cover Tunnel which it believes would have considerable consequences for any undiscovered archaeological interest, would decrease habitat connectivity in comparison with the Published Scheme and that the embankment created would be intrusive. The Trust believes that the Partial Solution will not solve the traffic problems or deliver the biodiversity benefits of the Published Scheme and is likely to contribute to an escalated final cost of finding a sustainable solution.

3.10 Alternative Proposals

Of the responses received by letter and questionnaire, approximately 430 suggested or supported a range of alternative proposals. These range from entirely new routes, to modifications of previously proposed routes and alternative junction arrangements. This Section outlines these alternatives, provides a basic assessment of each and makes recommendations about whether further consideration is warranted. Those alternatives that can be represented on plan are indicated on either Figure 3.3 (Alternative Routes outside the World Heritage Site) or Figure 3.4 (Alternative Routes within the World Heritage Site) as appropriate.

3.10.1 Do-Nothing or Do-Minimum Options

Close the A344 and investigate low-cost, low-impact, quick-to-implement measures to improve congestion near Stonehenge

This proposal has been submitted by 23 respondents further to a campaign by the Stonehenge Alliance. The closure of the A344 junction, even if this section of A303 is not upgraded, could be seen as a positive step towards improving safety. But this view is not shared by Wiltshire County Council because of congestion problems that would result at Longbarrow Crossroads. If it were decided not to proceed with a complete solution then such interim measures could be worthy of further investigation, although they may only bring about marginal improvements to the existing situation.

Widening the A303 through the World Heritage Site within existing landtake.

One respondent suggests providing an additional traffic lane for A303 westbound traffic through the World Heritage Site, within existing highway land. However, the width of the highway corridor between fence-lines along this stretch of the A303 is only 12.5m and this would be insufficient for the 10m carriageway, plus 1m hardshoulders and verge, needed to provide a 3-lane highway. In addition, such a proposal would not meet current design standards and would raise safety concerns. It is thus not recommended that this proposal be considered further.

Provide a wall, bund, fence or trees to shield Stonehenge from the road

Twelve respondents propose that the existing A303 should be shielded from Stonehenge by some form of wall, fence, bund or band of trees. These proposals would not be consistent with national and regional plans and policies, and would do nothing to screen the A303 as it climbs King Barrow Ridge in line with Stonehenge. Such mitigation would conflict with the World Heritage Site Management Plan's aim to return the core area to open downland, and would, in itself, form an intrusive feature alien to the chalk downland landscape character. On this basis, no further work is recommended on this option.

Provide a smaller scale bypass at Winterbourne Stoke with the Partial Solution

This proposal is a suggestion by English Nature, the Countryside Agency and the Rural Development Service as a joint response in their future guise as Natural England. It would presumably involve the construction of a two or three lane single carriageway bypass of Winterbourne Stoke, instead of the planned dual-carriageway. This proposal would further reduce the traffic benefits of the Partial Solution and would have marginally less impact on the environment. However, if the Partial Solution is considered worthy of further consideration as a long term solution, then further investigation into reducing the impacts of the Bypass could be undertaken.

3.10.2 On-line Options through the WHS

On-line at-grade dual carriageway

A solution comprising the Published Scheme alignment for the Winterbourne Stoke Bypass, followed by a new at-grade dual carriageway along the line of the existing A303 through the World Heritage Site, was the most popular alternative proposed during the consultation. A total of 188 respondents expressed such a view, including 44 who supported the proposal put forward by local County Councillors Mills and West who were advocating such a solution.

An alternative route of this type was previously proposed by objectors to the Published Scheme and was examined at the Public Inquiry as Alternative Route AR1. In his Report the Inspector summarised that AR1 would be in complete conflict with local and regional plans and with the *World Heritage Site Management Plan* and it would also have adverse effects on numerous cultural heritage sites, including Stonehenge. On this basis the Inspector concluded that AR1 did not warrant further investigation. The *Scheme Review – Stage 1 Report* updated the costs and benefits of this alternative but its assessment can otherwise rely on the evidence submitted to the Public Inquiry.

On-line dual carriageway in cutting

A refinement to the above proposal, to put the new dual carriageway through the World Heritage Site in cutting, was supported by 42 respondents. Whilst this proposal would reduce the potential noise and visual impacts of the route on Stonehenge, and on the wider landscape to some extent, it cannot overcome the fact that the A303 ascends King Barrow Ridge on a line visible from Stonehenge, so a cutting would do nothing to screen noise and traffic from the Stones in this direction. Such a route, known then as the Yellow Route, was assessed previously in the *A303 Amesbury-Berwick Down, Preliminary Appraisal Report* (Halcrow, 1993). The assessment found that the route would have an adverse impact on views to and from Stonehenge, would intrude into the World Heritage Site and on this basis was not considered an acceptable, deliverable solution. This view remains unchanged and no further work is recommended on this option.

Other on-line proposals

Various other proposals were made to upgrade the A303 to an on-line dual carriageway within the WHS, with a range of specific features, as described below. The number of supporters is shown in brackets.

- An on-line route with museum/viaduct within the WHS, as examined at the 2004 Public Inquiry as Alternative Route AR9 (4)
- An on-line route with a wall, bund or trees to shield the road from Stonehenge (8)
- An on-line route, keeping the A344 open and leaving Countess Roundabout as it is (1)
- An on-line route, with a roundabout at the A344 and lay-bys for drivers to stop and view Stonehenge (1)
- An on-line route, with the existing A360 upgraded to dual carriageway from Longbarrow Crossroads to Airman's Corner and keeping the existing Visitor Centre at Stonehenge (1)
- On-line dual carriageway – “open, split-level, contour conscious” (2)
- On-line solution, but with A360 and A344 forming a one-way system for eastbound traffic (1)

None of these has any additional/net benefit over the on-line options described above so no further work is recommended on them.

3.10.3 Tunnel Options

Bored tunnel for westbound traffic, with eastbound traffic following the existing A303

One respondent proposes a new bored tunnel for westbound traffic, with eastbound traffic following the existing A303. This option would be technically feasible and would achieve the objective of improving the road without new construction adjacent to Stonehenge, albeit with new works within the World Heritage Site. It would be a relatively expensive option, though cheaper than the Published Scheme and so would provide better economic returns. However, the option would perpetuate the existence of a trunk road adjacent to Stonehenge and would not meet the objectives of the *WHS Management Plan*. It is therefore not recommended that this option be considered further.

Longer tunnels

Longer tunnels, either specifically 4km or 4.5km long or unspecified, were proposed by 56 respondents. Tunnels longer than the proposed 2.1km were considered in the report *Comparison of Tunnel Options* (Mott MacDonald, 2002) and in the *Longer Tunnels Scheme Assessment Report* (BBCJV, 2003). Longer tunnels were then duly considered by the 2004 Public Inquiry and in his Report the Inspector did not find in favour of any of these, mostly on

the basis of weighing the additional relatively marginal benefits achieved by tunnels longer than 2.1km against significantly increased costs. It is considered that the issue of longer tunnels has been thoroughly investigated and, with the added knowledge that even the 2.1km tunnel may now be considered unaffordable, further consideration of such options is not recommended as part of this Review.

Larger tunnels, to incorporate 3 lanes

Three respondents propose that the tunnels should be increased in diameter to provide 3 lanes of traffic in either direction to cope with future demand. Such tunnels would need to be approximately 14m in diameter, compared with 10.5m for the Published Scheme, creating a greater engineering challenge and perhaps doubling the costs of the Published Scheme. Consideration was given to providing 3 lanes in each direction during the design of the Published Scheme, and indeed the predicted traffic flows in the design year would fall into the bracket where 3 lanes could be considered. However, this option was not pursued due to the very high cost, the additional impacts on the WHS and the fact that the remainder of the A303 has no more than 2 lanes in each direction, and that a dual 2 lane solution would provide an operationally acceptable scheme. Nothing has happened that would change this assessment and further consideration of this proposal is thus not recommended.

A series of shorter tunnels to remove the need for ventilation systems

One respondent proposes that, rather than one tunnel 2.1km in length, a series of short tunnels could be constructed, with the stated advantage that ventilation systems would not be needed and operational costs would be reduced. Such a scheme would be feasible and could protect key features such as The Avenue, King Barrow Ridge, Stonehenge and other Scheduled Monuments from the worst impacts of the improved trunk road. However, the intervening open cuttings would lead to continued visual and noise impacts at Stonehenge and the fleeting views of the Stones from the A303 could be distracting for drivers and present safety issues. The length of tunnels could be in the region of 1.5km and would not offer significant savings over the Cut & Cover Tunnel option so it is not recommended that this proposal be considered further.

Cover new or existing A303 adjacent to Stonehenge with a grassed arched roof

Two respondents propose that the new or existing A303 adjacent to Stonehenge should be covered with a grassed arched roof. Such proposals are technically feasible and similar arched construction methods are used commonly to reclaim land over existing roads and railways for development. However, in this case the resultant structure would be in excess of 13m high, dwarfing the Stonehenge monument (in which the largest stone is just under 7m high) and blocking views to the south. In addition, views of the existing A303 at King Barrow Ridge would remain, resulting in minimal overall visual benefit for Stonehenge visitors. Further consideration of this proposal is not recommended.

3.10.4 Northern Routes

National Trust Corridor

The National Trust suggests an alternative northern corridor for investigation as shown on Figure 3.4. Routes within the corridor would largely avoid National Trust land, would pass through Larkhill and close to Durrington and Bulford before rejoining the A303 to the east of Amesbury. This corridor has some advantages (and disadvantages) compared with the Northern Route put forward for consultation and has therefore been considered in more detail later in this Report.

Far northern route

Two respondents propose a northern route wholly outside the World Heritage Site (indicative partial alignment by one of the respondents is shown as route FNR1 on Figure 3.3). This would run to the north of Larkhill, Durrington and Bulford and re-join the A303 to the east of

Amesbury. Far northern routes have been considered and dismissed previously (*The A303 Amesbury-Berwick Down, Preliminary Appraisal Report* (Halcrow, March 1993), *The A303 Amesbury-Berwick Down, Tunnel Options – Planning & Design Considerations* (Halcrow, June 1994) and *the A303 Stonehenge Improvement, Scheme Review – Stage 1 Report*). Such routes would have major adverse impacts on the Salisbury Plain Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). Additionally, Salisbury Plain is the largest armoured vehicle and live-firing area in the country and regarded by the MOD as essential to training. Any route north of Larkhill would sever the link between the barracks and the training area and would impinge on the live firing area. The constraints to the north of Larkhill rule out further consideration of such northerly routes.

3.10.5 Southern Bypasses of Winterbourne Stoke

Nine respondents propose southern bypasses of Winterbourne Stoke, with most routes then continuing to cross the World Heritage Site to the south of Stonehenge. Alignments for a Winterbourne Stoke bypass have been considered in the past, most recently in Halcrow's 1993 Preliminary Appraisal Report, which concluded that southern bypasses would have greater impacts on landscape, archaeology and the setting of the village, and so only northern bypasses were presented for consultation in 1994. In addition, the principle of a northern Winterbourne Stoke Bypass passed through Public Inquiry without objection, so clearly residents of the village and surrounding area are supportive of this alignment.

It is concluded that the consideration of a southern Winterbourne Stoke Bypass would not be justified on its own merit and does not warrant further assessment, but if a route south of Stonehenge was deemed worthy of further consideration, then the possibility of continuing on a southerly alignment to bypass Winterbourne Stoke could be investigated at the same time.

3.10.6 Near Southern Routes (across the World Heritage Site)

Local realignment of existing A303 adjacent to Stonehenge

Two respondents propose that the A303 through the WHS be improved mostly on-line but with minor realignment southwards by some 50m adjacent to Stonehenge (shown as route NSR1 on Figure 3.4). Such minor realignments have been considered before, notably in Halcrow's 1993 *A303 Amesbury-Berwick Down Preliminary Appraisal Report*. The Report found that although a southerly realignment would provide significant benefits with a reduction in visual intrusion from traffic adjacent to Stonehenge, traffic to the east would still be visible and the necessary high embankment across Stonehenge Bottom would result in significant adverse impacts. The proposal would also be in conflict with the aims of the *WHS Management Plan*. For these reasons such minor realignments have been rejected in the past and are not now recommended for further consideration.

Extended Southern Route to pass to the south of Amesbury

One respondent proposes that the Southern Route presented for consultation should be extended to pass to the south of Amesbury, cutting through Boscombe Down airfield between the runways and the buildings, then northeast along Byway Amesbury A34 (shown as route NSR2 on Figure 3.4). This route would be about 6km longer than the Southern Route, require a second crossing of the River Avon, disrupt Boscombe Down airfield, cut through Amesbury Down and remove 2km of existing byway. It would provide a second Amesbury bypass but this is not an objective of the scheme. This route has no benefits over the Southern Route and is therefore not recommended for further consideration.

Minor Revision to Southern Route presented for consultation

Six respondents propose relatively minor realignments to the Southern Route as presented for consultation. These would comprise modifications to the proposed junction at Longbarrow Crossroads and minor adjustment of the route to the east of the junction with the aim of reducing the impact on certain archaeological features. Should the Southern Route be taken forward, then such minor realignments could be reviewed as part of its further development.

Southern bypass of Winterbourne Stoke and thence across the World Heritage Site, entirely above existing ground levels

One respondent proposes a southern bypass of Winterbourne Stoke that would cross the A360 2km south of Longbarrow Crossroads and then the World Heritage Site to rejoin the existing A303 to the east of The Avenue (shown as route NSR3 on Figure 3.4). The route includes a grade-separated junction with the B3083 south of Winterbourne Stoke and improvements to the B3083 northwards to Shrewton. The new road across the World Heritage Site would be built entirely above existing ground levels, thus retaining all existing undisturbed archaeology. Noise bunds, of unspecified nature, are proposed on either side of the carriageway to minimise noise and visual intrusion.

This proposal would significantly increase predicted traffic flows on the B3083 north of Winterbourne Stoke and on the A303 between Winterbourne Stoke and the A360, and would lead to rat-running via the A345 and The Packway, increasing flows through Larkhill. This option has superficial attraction in allowing the removal of the existing A303 to the east of Winterbourne Stoke and part of the A360, thus greatly improving the setting of the group of barrows at Longbarrow Crossroads. However, the alignment of the option near the Lake group of barrows is difficult topographically and the proposed B3083 extension past Shrewton would impact severely on the village in terms of noise and visual intrusion. Despite the potential for buried archaeological remains to be preserved beneath the route, the direct impacts arising from the construction of embankments would result in extensive damaging effects through the WHS.

This alternative proposal is not deemed worthy of further consideration because of its adverse effects.

Four other respondents propose a route along a similar horizontal alignment, but on a 'normal' vertical alignment that would include cuttings as well as embankments. Such a route would also be very damaging and so is not recommended for further consideration.

Southern route across the World Heritage Site entirely above existing ground levels with wall/bund to northern side

One respondent proposes a similar above-ground alignment across the World Heritage Site to the previous option, but following a line closer to the Southern Route put forward for consultation (Shown as route NSR4 on Figure 3.4). The new road would be built following existing ground levels. To avoid the road and traffic being seen and heard from the monument a concrete wall would be laid alongside the road and the ground made up behind it to model the typical terrain and vegetation. The walls would be of prefabricated units, in the order of 5m high, and would be topped with a 2m high noise barrier plus hedge. On the other side a 2.5m noise barrier would be provided and both walls/barriers would incorporate storm water drainage collection systems.

This route crosses the grain of the landscape south of Stonehenge, and the topography is such that to comply with design standards it would cross Stonehenge Bottom on a large embankment, perhaps 12m high. The visual effects of this feature in full view of Stonehenge, combined with an artificial bund and a hedge on top, would alone be sufficient to eliminate this option from further consideration. The route generally would be extremely damaging and it is not considered worthy of further assessment.

One other respondent proposes a route along a similar alignment but to a normal vertical alignment that would include cuttings as well as embankments. Such a route would have no net benefit over the above-ground-level version and so is not recommended for further consideration.

Southern route through Wylve valley and then along Avon valley to A303 at Vespaian's Camp

One respondent proposes a route that would comprise a new road along the Wylve valley north of Steeple Langford and Stapleford, then continuing eastwards across the A36 and turning north-east to follow the Avon valley to rejoin the existing A303 at Vespaian's Camp (shown as

route NSR5 on Figure 3.4). A similar route was considered as route S1(B) in the *A303 Amesbury-Berwick Down Preliminary Appraisal Report* (Halcrow, 1993). The Report concluded that remote southern routes such as this would provide benefits in terms of taking traffic well away from Stonehenge. However, the existing A303 would have to remain open for local traffic and the routes themselves would have more severe environmental effects than local corridors. It was thus considered that these routes were unacceptable and should not be considered further. There is no reason to change that assessment and no further work is recommended on this route.

3.10.7 Far Southern Routes (South of the World Heritage Site)

The Jackson Route (AR2)

This route (see Figure 3.3), which was presented at the 2004 Public Inquiry as Alternative Route AR2, has been resubmitted as an option by one respondent during the consultation period with support from one other respondent. This route would pass through Boscombe Down airfield, requiring its closure, and would cross the Woodford valley south of Great Durnford to join the existing A36 at Stapleford. In his Report the Inspector summarised that due to the impact on Boscombe Down airfield, the route's poor value for money and the damage that would be caused to the landscape, heritage and ecology, the route did not warrant further investigation. This route was reconsidered during Stage 1 of the Scheme Review and its costs and economic benefits were updated. Otherwise the evidence presented at the Public Inquiry can be relied upon for its consideration.

The Parker Route (AR4)

Twenty eight respondents have expressed support for the Parker Route (see Figure 3.3), which was presented as Alternative Route AR4 at the 2004 Public Inquiry, though 2 people have expressed opposition to it. This route is 25km long, runs to the north of Salisbury and includes an Eastern Link to provide a notional bypass of the A36 around Salisbury. The Parker Route was assessed for the Public Inquiry and examined by the Inspector. In his Report the Inspector noted that Wiltshire County Council objected to the route because it would be contrary to the adopted Structure Plan and would not support the proposed Eastern Link. He also noted the significant environmental damage that the route would cause in the Bourne and Woodford valleys and its poor economic performance. The Inspector summarised that these disadvantages significantly outweighed the benefits that the alternative could deliver. This route was also reconsidered during Stage 1 of the Scheme Review and its costs and economic benefits were updated. Otherwise the evidence presented at the Public Inquiry can be relied upon for its consideration.

The Case Route (AR7)

This route (see Figure 3.3), which was also presented at the 2004 Public Inquiry as Alternative Route AR7, has been resubmitted as an option during the consultation period. Like the Parker Route above it would comprise a long bypass, crossing the River Avon north of Salisbury. Unlike the Parker Route it would join an upgraded A36 at Steeple Langford, but it would also include an Eastern Link to act as a bypass for the A36 around Salisbury. The Case Route was assessed in detail at the Public Inquiry and examined by the Inspector. In his Report the Inspector stated that this route would be in serious conflict with the Development Plan, and would cause environmental and cultural heritage damage. He also noted that its economic viability would rely upon the Eastern Link road, which the responsible highway authority would not wish to build. He concluded that, as an A303 diversion, the route would provide very poor value for money and that overall the disadvantages would significantly outweigh the benefits the route could deliver. This route was also reconsidered during Stage 1 of the Scheme Review and its costs and economic benefits were updated. Otherwise the evidence presented at the Public Inquiry can be relied upon for its consideration.

The Lawrence Alternative

Two respondents offer support for the Lawrence Alternative (see Figure 3.3) that was also presented at the Public Inquiry, though not as an official Alternative Route. In his Report the Inspector summarised that the route's poor value for money, and damage to the environment of a substantial area of open countryside would outweigh the benefits it could deliver. The evidence presented at Public Inquiry can be relied upon for any consideration of this route.

Lawrence Alternative/Parker Route combination

One respondent suggests a route (shown as route FSR1 on Figure 3.3) that is similar to the Lawrence Alternative in the west and the Parker Route in the east, including a link to the A36 to act as a Salisbury Bypass, similar to that proposed with the Parker Route. This route would also cause extensive adverse environmental impacts and would result in a poor economic performance, and is therefore not considered worthy of further consideration in this Review.

Case Route/Parker Route combination

One respondent suggests a route that would be similar to the Case Route but on a more southerly alignment, and including the same link to the A36 proposed with the Parker Route to act as a Salisbury Bypass. This route would again cause extensive adverse environmental impacts and would have a poor economic performance. It is therefore not considered worthy of further consideration in this Review.

More northerly Case Route/Parker Route combination

Another respondent suggests a route that would be similar to the above Case Route/Parker Route combination but with a more northerly crossing of the Avon, and also including a link to the A36 to act as a Salisbury Bypass (shown as route FSR3 on Figure 3.3). Again, this route would cause extensive adverse environmental impacts and would have a poor economic performance. It is therefore not considered worthy of further consideration in this Review.

Southern bypass of Winterbourne Stoke, then across the Woodford valley and south of Amesbury

Two respondents suggest a southern bypass of Winterbourne Stoke followed by a route across the Woodford valley and thence south of Amesbury, though no specific alignment was proposed. A route of this type was considered in the *A303 Amesbury-Berwick Down, Preliminary Appraisal Report* (Halcrow, 1993), being a combination of the two major options identified as S1 and S2. The Report concluded that such remote southern routes would provide benefits in terms of taking traffic well away from Stonehenge. However, the existing A303 would have to remain open for local traffic and the routes themselves would have more severe environmental effects than local corridors. It was thus considered that these routes were unacceptable and should not be considered further. There is no reason to change that assessment and no further work is recommended on this route.

Southern (or northern) bypass of Winterbourne Stoke, then south of Great Durnford and south of Amesbury, passing under Boscombe Down airfield

One respondent proposes such a route (shown as route FSR2 on Figure 3.3), following a line broadly similar to the S1/S2 option identified in Halcrow's 1993 Preliminary Appraisal Report. This route would have the benefit of passing south of the World Heritage Site, but would result in severe environmental damage and would provide poor economic returns. An additional major problem with this route would be the proposed cut & cover tunnel under the length of the existing Boscombe Down airfield. Not only would this be extremely expensive, it would also have significant and unacceptable operational impacts on this important military site. This route has few merits and need not be considered further.

3.10.8 Split Carriageways

Split carriageways to north and south of Stonehenge

One respondent proposes splitting eastbound and westbound carriageways to the north and south of Stonehenge as shown on Figure 3.4. The eastbound carriageway would continue from the Winterbourne Stoke Bypass to cross the A360 to the north of Longbarrow Crossroads, and run briefly along the line of the existing A344 before heading eastwards alongside The Avenue to rejoin the existing A303 close to Vespasian's Camp. The westbound carriageway would follow a similar line to the Southern Route presented for consultation. This same option was suggested to the 2004 Public Inquiry, though towards the end and so was not considered in detail. The Inspector considered and dismissed it in his Report. Options that would result in two new roads through the World Heritage Site would have two sets of adverse effects, and it is difficult to see the benefits that would arise from isolating Stonehenge within these roads. The route is thus not considered worthy of further consideration.

Eastbound carriageway north of Stonehenge and westbound carriageway along existing A303

One respondent proposes that westbound traffic could continue to follow the existing A303, with eastbound traffic following an *"upgraded local road to the north of Stonehenge"*. It is unclear which is the local road referred to, but perhaps the existing A344 or existing roads through Larkhill were intended. Whatever was intended, permanent solutions that involve new roads through the World Heritage Site, but do not remove the existing A303 traffic adjacent to Stonehenge, would be unacceptable and this option is not recommended for further consideration.

3.10.9 Junction Options

Roundabout around Stonehenge

One respondent suggests that a large roundabout, approximately one mile in diameter with Stonehenge at its centre, would resolve the traffic and access issues at Stonehenge. The roundabout would have three arms, one each for the A303 eastbound and westbound and one for the A344. An underpass would be provided for access to a new Visitor Centre to the north-east. Clearly this proposal would have significant new impacts on Stonehenge itself and other features surrounding it, including The Avenue. It would also do nothing to resolve the congestion problems along the A303. It does not warrant further consideration.

New A303 to pass under Countess Roundabout rather than over

One respondent proposes this alternative which would be very similar in plan to the Published Scheme, but with the A303 dropping into an underpass instead of being raised on bridges over the existing Countess Roundabout.

This alternative would provide some environmental benefits by, for example, avoiding the visual impact of the A303 flyover and reducing noise at adjacent properties. These would need to be balanced against the risks of groundwater pollution and pollution to the River Avon that construction below the water table in this area would bring. It would also require significant additional funding to provide long lengths of deep retaining wall in difficult construction conditions and would require a permanent pumped drainage system.

On balance, such a difficult and costly scheme could not be justified for the relatively modest environmental benefits that could be gained.

Cloverleaf junction at Countess Roundabout

One respondent proposes a more extensive grade-separated cloverleaf-shaped junction at Countess Roundabout instead of the flyover proposed for the Published Scheme. Such an option would require numerous structures and significant land acquisition, and would have major impacts on Listed Buildings nearby. Such an extensive solution is not needed and so does not justify further consideration in this Review.

4 Assessment of Options Presented for Public Consultation

4.1 Introduction

From Stage 1 of the Scheme Review five options were identified and put forward for public consultation. In parallel with the consultation further detailed assessment work on those options has been undertaken. The results are summarised below in sequence for each option, namely: the Published Scheme (with bored tunnel); Cut & Cover Tunnel; Northern Route; Southern Route; and Partial Solution. Each option is described briefly and the results of their assessments are summarised under the topics of design, cost and programme, environment, and traffic and economics.

The summary of the Published Scheme is supported by the Environmental Statement published in 2003 and by the evidence presented to the Public Inquiry in 2004. The summaries of the other options are supported by more detailed assessments reported in a separate *Scheme Review Stage 2 - Detailed Assessment of Options Report*, which also contains more details of the value engineering and cost review undertaken for the Published Scheme. As already mentioned in Section 3.2, the Published Scheme has been the subject of more extensive detailed surveys than have other route corridors within the study area. Therefore, where the Northern and Southern Routes depart from the corridor of the Published Scheme, there is greater uncertainty about their potential impact on, for example, as-yet undiscovered archaeology within or outside the WHS, or on protected species dependent on habitats affected by the routes. Such a basis for assessment and comparison is inevitable when one of the options has already been the subject of a full environmental assessment and others are at a preliminary stage.

The assessments for each option are further summarised in Appraisal Summary Tables (ASTs) presented at Appendix E. A comparison of some key aspects is presented in Table 4.1 below.

Table 4.1 Broad Comparison of Options

	Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution (junction option 3)
Construction Costs (2003 prices)	£289m	£195m	£113m	£95m	£78m
Scheme Budget	£539m	£413m	£317m	£273m	£185m
BCR low growth	1.02	1.27	1.97	2.76	2.18
high growth	1.59	1.97	3.46	4.68	3.21
Total length	12.4 km	12.4 km	14 km	12.9 km	7.1 km (12.4 overall)
Length within the World Heritage Site ¹	3.4 km	3.4 km	6.4 km	6.0 km	As existing
Permanent Highway land required in the WHS	20 ha	20 ha	28.6 ha	31.4 ha	2.4 ha
Additional temporary land required in the WHS	0.8 ha	10 ha	1.9 ha	0	0
Number of properties within 100m	9	9	40	5	9
Length of road visible from Stonehenge	0	0	250m	0 ²	As existing
Number of new river crossings (SSSI, SAC)	1	1	1	1	1
Number of Scheduled Monuments directly affected	0	0	0	1	0

¹ Length of road excluding tunnel sections.

² Further detailed design should screen a 120m section of the Southern Route that would otherwise be visible from Stonehenge.

4.2 Published Scheme

4.2.1 Description

The Published Scheme (see Figure 4.1) runs for 12.4km from the existing A303, west of Winterbourne Stoke, to the east of the grade-separated junction proposed at Countess Roundabout. The route includes a northern bypass of Winterbourne Stoke leading to a grade-separated junction with the A360 at Longbarrow Crossroads. Through the World Heritage Site (WHS), the dual carriageway from Longbarrow Crossroads follows the line of the existing A303 and descends into the Western Tunnel Portal before reaching the Normanton Down ridgeline. The tunnel alignment runs to the south of the existing A303, crossing Stonehenge Bottom just below ground-level, where works from the surface are needed to strengthen the top of the tunnel for approximately 120m. The tunnel emerges at the Eastern Tunnel Portal just beyond King Barrow Ridge after which it ties into the existing A303 dual carriageway before reaching the proposed grade-separated junction at Countess Roundabout.

With the Published Scheme, the existing A303 between Longbarrow Crossroads and King Barrow Ridge would be returned to grassland, though all or part would remain as a right-of-way for walkers, cyclists and equestrians.

4.2.2 Design

Grade-separated junctions are provided to accommodate traffic movements between the A303 and the local road network along the route. These include a junction with west-facing slip roads at the west end of the Winterbourne Stoke Bypass, a full-movement, grade-separated junction at the intersection with the A360 at Longbarrow Crossroads, and a flyover with slip road connections to the roundabout below at the intersection with the A345 at Countess.

It is anticipated that the 2.1km long, twin-bored tunnel would be constructed using the sprayed concrete lining (SCL) method. Each of the two bores would accommodate a 7.3m wide carriageway with 1m wide footways and headroom clearance of 5.03m with space for ventilation and other equipment above. A separate service tunnel would be constructed between the two main bores. Cross-passages would provide emergency escape from one bore to the other and would also connect to the service tunnel for maintenance access. Tunnel services buildings would be provided outside each portal and 3 plant rooms and a mid-point sump would be provided at locations between the main bores.

Besides the tunnel, the Published Scheme incorporates eight significant new structures. These are, from west to east:

- Winterbourne Stoke Western Access underbridge
- A 'Green Bridge' providing a pathway for mammals across the new dual carriageway
- B3083 Shrewton Road overbridge
- River Till viaduct
- Bridleway Winterbourne Stoke 6B overbridge
- Longbarrow Crossroads overbridge
- Countess Roundabout west & east bridges

The first five structures (Winterbourne Stoke Western Access underbridge through to Bridleway Winterbourne Stoke 6B overbridge) are located on the Winterbourne Stoke Bypass section of the Scheme. The most significant structure is the River Till viaduct which spans 205m across the River Till and its associated flood plain. The vertical alignment of the crossing would provide nearly 6m clearance above the river to the underside of the bridge. Longbarrow Crossroads overbridge forms part of the new grade-separated junction at Longbarrow

Crossroads, carrying A360 traffic over the A303. The west and east bridges at Countess Roundabout would carry the A303 over the existing roundabout at its junction with A345 just north of Amesbury, also forming a new grade-separated junction. All structures would be founded on spread footings with the exception of the River Till viaduct and the bridges at Countess Roundabout, which would be supported on piled foundations.

Earthworks quantities are balanced in the Published Scheme, with excavated material from cuttings and the tunnel being used for structural embankments and essential mitigation works, particularly along the Winterbourne Stoke Bypass element of the Scheme.

Surface water run-off from the new road would be collected into a series of drainage treatment areas. In these, a series of filtration processes using mainly natural materials, like reed beds, remove harmful substances before the run-off is allowed to return to rivers, streams or groundwater.

Public utilities exist mainly along the line of the existing A303, and in particular near the Countess Roundabout junction with the A345. There would therefore be a need for temporary and/ or permanent diversion of many of these services and close liaison with the relevant statutory authorities.

Departures from design standards have been agreed in principle to enable the use of the latest safety barrier standards, and for the use of a concrete safety barrier at the tunnel approaches. They have also been agreed for the vertical alignment and stopping sight distances at the Countess flyover, where spatial and environmental issues constrain the design.

4.2.3 Cost and Programme

Cost Review

During the development of the Scheme's design and construction planning, a number of reviews have taken place aimed both at reducing the cost and checking that the basis of the estimated cost is reliable. These reviews have been undertaken using specialists from the project team and the Highways Agency as well as a number of independent specialists. A series of workshops and review studies have been completed to scrutinise the estimated cost, both at the detailed level looking at individual cost elements and at a global level using comparisons with other similar projects. Overall it is estimated that £33m of savings have already been secured through this process. In particular the tunnelling elements of the Scheme have been reviewed and over £19m of the savings are tunnel related. The rigor of this process has also served to improve the understanding of the particular issues associated with the Stonehenge site and has resulted in broad agreement on the approach adopted for the design and construction of the bored tunnel structure.

As part of this Scheme Review all aspects of the tunnel design and construction have been revisited with a view to reducing the overall cost. Savings have been identified as a result of reducing the number or changing the type of operational facilities provided as part of the tunnel scheme, without compromising the safe operation of the tunnel. These reductions have been identified by considering elements that were either non-essential, replaceable with cheaper alternatives or were elements of limited or unproven benefit. Although subject to the necessary approvals, the resulting cost savings are considered as real opportunities and are now reflected in the Scheme cost estimate. Overall it is estimated that a saving in the region of £3.5m can be achieved by pursuing these opportunities.

A further reduction in the cost estimate for the tunnel has resulted from a review of the measures necessary to comply with new guidelines for levels of oxides of nitrogen in the workplace set by the Health and Safety Executive (HSE). Ongoing studies by the tunnelling industry, taking advice from the HSE, now indicate that a less onerous limit is likely to be acceptable with a potential saving to the project of around £3.5m. However there is still a significant risk that the required measures will be more onerous and therefore not all of this saving is reflected in the cost estimate.

A number of cost increases and additional risks have also been identified that have had a balancing effect on the overall cost estimate. These include allowances for the potential need for fire suppression, for uncertainty of the availability of suitable labour given the expected construction activity leading up to the Olympic Games and for the possibility of increased concrete thicknesses to meet design standard requirements.

Current Cost Estimate

Taking into account the savings and increases identified above, together with a full review of the project risks, the overall cost saving is estimated to be £3m. This gives an updated construction cost estimate for the Published Scheme of £289m at 2003 prices.

The overall Scheme budget is then calculated taking into account other cost elements including, preparation and supervision, land, risk, VAT and inflation. Appendix D provides details of how the overall budget is built up for each of the options. Using the same basis as reported in the Stage 1 Report, the overall Scheme budget would need to be £502m representing a £8m reduction compared with that at the start of the Scheme Review. This assumes that construction would start in 2008 and would finish in 2012. Whilst it is recognised that this is a relatively small reduction, it serves to demonstrate that the proposed Scheme estimate is robust with little opportunity for further significant reduction.

The Scheme budget above includes an estimate for future inflation that is generally in line with national economic targets of around 2.5%. However, future infrastructure projects, particularly major tunnelling projects, would have an influence on inflation within the construction industry. Notably, work associated with the Olympics as well as CrossRail and the A3 Hindhead tunnel could affect costs significantly in future years. The current delay to the start of the Stonehenge project, combined with a general increase in construction costs, means that the budget requirement for the Scheme has increased. The construction cost estimate increases to £344m when expressed in current day (2006) prices. The Scheme budget also increases because predictions of future inflation, which take into account recent construction trends and the influence of major projects, would suggest that a rate of 4.5% is more realistic than 2.5% and this would add £37m to the overall Scheme budget giving a total of £539m. (If the cost of the Scheme as presented to the Public Inquiry is updated on a like-for-like basis to reflect the revised construction timescale and the corresponding inflation assumptions, the equivalent budget requirement would be £377m. The increased budget requirement for the Published Scheme due to the construction costs increasing beyond those presented at the Public Inquiry is therefore some £162m.)

Early Start

Since the impact of inflation is so significant the opportunity for starting the Published Scheme in 2007 instead of the currently proposed 2008 has also been assessed. Such an early start would be subject to the entire statutory process (including any challenge process) being complete by Spring 2007, but it would reduce the overall Scheme budget requirement by £20m.

Phased Delivery

One way to increase the affordability of the Published Scheme would be to construct it in phases. This approach would inevitably increase the overall cost due to inefficiencies associated with a longer or interrupted programme of work. However in terms of current budget allocations there is potentially an economic case for deferring capital expenditure whilst gaining some traffic benefits at an earlier date.

Constructing the Scheme in two separate phases would require separate site set-ups which include site compounds, offices, administration and support staff, and this would incur additional costs. The nature of the Published Scheme also means that a balance of earth-moving is achieved across the whole Scheme; thus if the non-tunnel sections are completed first then some 900,000m³ additional earth fill would need to be obtained from outside the site which would incur additional costs and environmental impacts. Disposal of spoil from the tunnel phase would then further add to the costs and environmental impacts. The construction cost would

increase by approximately £72m (in current 2006 prices). The first phase could be based on the Partial Solution, described later in this Section, with the Winterbourne Stoke Bypass and Countess Roundabout Improvement opened in 2012. The main tunnel could then follow in a second phase opened in 2017. This would require a Scheme budget of £799m, although this would be spread over nearly seven years instead of just over four for the Published Scheme. This option would provide some earlier benefits to the residents of Winterbourne Stoke with the construction of the Bypass and might enable the plans for the new Visitor Centre to be progressed. The later the construction of the tunnel phase, the higher the Scheme budget requirement would become because of the effect of inflation. For example, assuming an inflation rate of 4.5%, a 1 year further delay would add another £26m, and a 2 year delay another £53m.

If the Published Scheme was to be constructed in separate phases, it would have to be promoted through the statutory process on that basis and its successful passage may be dependent on the degree of commitment that could be given to the subsequent delivery of the bored tunnel past Stonehenge.

4.2.4 Environment

Cultural Heritage

Although the Published Scheme would result in adverse effects upon the settings of some sites, for instance the barrows at Longbarrow Crossroads and at the Western Tunnel Portal, these would be outweighed by the significant beneficial effects of the Published Scheme upon sites, including Stonehenge, within the central part of the WHS. The bored tunnel would allow the closure of the A344 and A303 adjacent to Stonehenge; therefore it would make a significant contribution to the cultural heritage objectives of the *World Heritage Site Management Plan*. As a result of this, the Published Scheme accrues a Large Beneficial effect.

Landscape and Visual Effects

The proposed 2.1 km tunnel would allow the removal of the existing A303, and the A344 east of Byway Amesbury 12, through the central area of the WHS within view of Stonehenge, transforming the setting of the monument and allowing free access to many important related Monuments, helping visitors to appreciate their inter-relationship. The landscape of Stonehenge Bottom would be returned to the landform that existed prior to the introduction of modern highways past Stonehenge. The tunnel portals would form new features within the WHS beyond the horizons from Stonehenge, and the new road including its cuttings would be wider than the existing corridor. Outside the World Heritage Site, earth material excavated from the tunnel would be used to create a new landform alongside the Scheme, blending it into the surrounding contours and reducing noise and visual intrusion.

There would be a Moderate Beneficial effect within the village of Winterbourne Stoke, but against this must be set the adverse visual effects of a new and wider road corridor than at present, encroaching into unspoilt open countryside west of Longbarrow Crossroads junction, in particular, the effects of the River Till viaduct resulting in Major to Moderate Adverse effects on the River Till valley landscapes.

It is however concluded that, on balance, the Published Scheme would result in substantial overall landscape and visual benefits.

Biodiversity

It is predicted that implementation of the Published Scheme would result in overall beneficial effects due in large part to the reconnections of habitats over the tunnelled section, balanced against adverse effects elsewhere, with extensive mitigation proposals. Slight Adverse impacts are anticipated on aquatic macro-invertebrates, fish, riverine vegetation and habitat (all in the River Till) and riverine birds. Effects on bats have been assessed as likely to be of temporary Large Adverse significance on a precautionary basis, as there is a degree of uncertainty as to the effectiveness of proposed mitigation measures in the short term. These adverse impacts are also

common to all of the options in this Review. All other effects of the Published Scheme are assessed to be Neutral or Slight Beneficial with potential for up to Large Beneficial effects through off-site agreements and land use changes.

The Published Scheme would also contribute to the wider biodiversity goals in the area, in particular the restoration and reconnection of chalk grassland at the centre of the World Heritage Site through the *World Heritage Site Management Plan*. This plan seeks to create chalk grassland from the southern portion of the WHS up to the existing chalk grassland of Salisbury Plain.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan; a residual risk would remain, however.

Pumping of groundwater in the vicinity of Stonehenge Bottom (with discharge to soakaways) would be required to enable tunnel construction to take place under dry conditions. Such pumping would have no adverse effect on the natural groundwater flow regime, or flow in the River Avon (into which groundwater discharges), since the pumping and discharge would take place in the same groundwater catchment. However, there may be a need to provide mitigation as follows:

- compensation flow at a spring at West Amesbury if a reduction in flow was attributable to pumping
- alleviation of flooding at Springbottom Farm, although the latter would probably have occurred naturally.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met. Indeed, the drainage system should result in an improvement in water quality (albeit slight) given that the existing system has no treatment facilities.

A drainage system above the tunnel in the vicinity of Stonehenge Bottom would ensure that the change to the natural groundwater flow regime in the long term due to the presence of the tunnel would be minimal; consequently, there would be negligible change to flow in the River Avon.

It is concluded that, on balance, the Published Scheme would have an overall neutral effect on the water environment.

Geology and Soils

The Published Scheme would not pass through any soils or areas of suspected contamination. There are therefore no environmental effects to mitigate in terms of the underlying geology and soils. As noted in Section 4.2.2 above, the bulk earthworks for the Published Scheme are in balance and there would be no requirement to import soils apart from selected granular fills, drainage materials and possibly some materials forming pavement foundation layers.

Noise and Vibration

The Published Scheme would provide major decreases in noise levels through the village of Winterbourne Stoke, at Stonehenge and at Stonehenge Cottages. A major increase would arise at an isolated property to the north of Winterbourne Stoke. Imperceptible to minimal increases would arise at Larkhill and Countess Roundabout with minimal increases at Countess Road and the Amesbury Abbey complex. Properties in North Amesbury would be subject to no perceptible change.

Air Quality

The Published Scheme would result in a general improvement in local air quality, with 31 properties experiencing a significant improvement at opening year with no significant deterioration at any properties. Pollutant concentrations at receptor locations are expected to be

within the relevant objectives. The Published Scheme would result in an increase in carbon dioxide emissions over the wider study area of 14.8% compared with the Do-Minimum scenario.

Community Effects and Rights-of-Way

Severance within the community in Winterbourne Stoke would be reduced, allowing better access from most of the village south of the existing A303 to the pub and garage/shop on the north side of the road. The Published Scheme would result in minor diversions for two rights-of-way, one each side of the River Till. It would improve access on Bridleway Amesbury 11 and Byway Amesbury 12 across the A303 and provide a better link from Bridleway Amesbury 10 along King Barrow Ridge to Stonehenge Road. The existing A303 and A344 would be grassed over but remain public rights-of-way for walkers, cyclists and equestrians.

Vehicle Travellers

Although the Scheme would achieve the aim of removing traffic and roads from sight at Stonehenge, and would allow visitors a greatly enhanced experience, this is at the inevitable cost of the loss of views of the Stones for passing vehicle travellers. While these casual views are valued by many, with the tunnel in place the Stonehenge landscape could be enjoyed by visitors with a greatly enhanced understanding of its setting. For the less physically able it is English Heritage's intention to provide transport.

Land Use

As reported to the Public Inquiry, it is probable that much of the agricultural land quality across the chalkland near Stonehenge would be classified as subgrade 3a. As noted by Defra, a route across agricultural land of poorer quality in this area would be "impractical". Each route option would affect an area of similar land quality proportional to its length, and impact on farm businesses would be similar.

Disruption due to Construction

Within the World Heritage Site, traffic would remain on or close to the line of the A303. There would be views from Stonehenge of the construction works for the roof of the tunnel in Stonehenge Bottom.

Policies and Plans

The Published Scheme would be consistent with the strategy for the A303 recommended by the London to South West and South Wales Multi-Modal Study (SWARMMS) and accepted by the Secretary of State, which would comprise a dual carriageway standard road between London and the South West. This recommendation supports recognition of the A303/A358 corridor in Regional Planning Guidance as a strategic corridor to the South West, is consistent with other planned improvements to this route and should help to reduce peripherality and to increase the economic competitiveness of the region.

UK World Heritage Sites enjoy full protection through the planning system as well as through designation of specific assets within them. Policies within local development plans have quasi-statutory status while government Planning Policy Guidance Notes set out national policy from which local authorities may depart only in exceptional and well-justified circumstances. PPG15 requires local authorities to formulate specific policies for protecting World Heritage Sites. It also recommends the preparation of Management Plans for World Heritage Sites. The Plan for Stonehenge was adopted by Salisbury District Council as Supplementary Planning Guidance to the Adopted Salisbury District Local Plan in January 2000.

The Plan was written with the assumption that the A303 would be placed in a tunnel. Objective 23 of the Plan is quite clear:

"Objective 23 – Measures should be identified which will provide comprehensive treatment of important road links within the WHS in order to reduce traffic movements and congestion, improve safety and enhance the historic environment."

A strategy to achieve the above includes:

- *placing the A303(T) in a tunnel, closure of the A344 and related landscape restoration schemes within the Stonehenge 'Bowl', including removal of the A344 in the longer term.*

Although tunnelling may inevitably have some detrimental effect on existing archaeology along the route corridor of the A303(T), this should be balanced against the major benefits for the WHS which would result. These include the reunification of the prehistoric landscape, the reduction of visual and noise pollution around the Stones and the provision of increased and safer public access to the Stones and their immediate environs."

The UNESCO World Heritage Committee has congratulated the UK on the high quality of the Management Plan and in 2001 noted government proposals for putting the A303 in a 2km (cut & cover) tunnel, closing the A344 and siting the Visitor Centre outside the World Heritage Site. ICOMOS at that time confirmed that it was in full agreement with the proposals. The Committee has subsequently welcomed the decision to construct a bored tunnel.

The Published Scheme would also allow the Government to discharge its commitment, made at the time of the WHS inscription, to close the A344 and allow The Avenue to be reunited with the stone circle.

The proposed new Visitor Centre at Countess East is dependent on the grade-separation of Countess Roundabout and one of the grounds for its initial planning refusal related to the uncertainty of the A303 scheme; Salisbury District Council's subsequent planning consent (on 10 July 2006) was conditional on the Published Scheme going ahead. Funding for the new Centre may also be dependent on the overall Stonehenge Project (A303 Improvement, Visitor Centre and reversion to grassland around the Stones) meeting the objectives of the *World Heritage Site Management Plan*. The Published Scheme is entirely compatible with and would facilitate plans for the new Visitor Centre; without the Scheme the current proposals for the new Centre would have to be revisited.

4.2.5 Traffic and Economics

Traffic

The Published Scheme would result in the direct transfer of traffic currently using the single carriageway A303 between Countess Roundabout and Longbarrow Crossroads onto a new dual carriageway through the tunnel. With the grade-separation of both roundabouts, this would remove the main sources of congestion on the A303 in the area. At the western end, the Winterbourne Stoke Bypass section would remove over 95% of the traffic travelling through the village of Winterbourne Stoke.

The closure of the A344 between Stonehenge and the A303 would result in the transfer of a significant volume of traffic from the A344 adjacent to Stonehenge to the A303 between Longbarrow Crossroads and Stonehenge Bottom. The two-way traffic flow on this section of the A303 would increase by 42% in 2008, to between 26,850 and 31,150 vehicles, while in 2023 the increase would be 45%. There would be an equivalent increase in traffic volume on the A360 to the north of Longbarrow Crossroads.

Whilst another effect of closing the A344 would be to increase greatly the volume of turning movements at the Longbarrow Crossroads junction, this would be mitigated by the grade-separation of the junction, so that the east-west through traffic on the A303, which forms the majority of traffic passing through the junction, would no longer incur delays at this point on the network.

Similarly, the grade-separation of Countess Roundabout would remove delays to the main east-west movements here as well. The grade-separation would remove about 70-80% of the traffic that, in the Do-Minimum, would be circulating across the entries from the A345 at Countess. In

addition to the benefits accruing to A303 traffic, vehicles on the A345 would also benefit from reduced delays at this point.

The Published Scheme would deliver significant safety benefits by replacing the existing single carriageway with a high standard dual carriageway route throughout, which would remove or substantially reduce vehicle conflicts at a number of existing accident cluster points, most notably at Countess Roundabout and the junction with the A344.

Economics

Based on the current construction cost estimate for the Published Scheme of £289m at 2003 prices, and assuming an opening year of 2012, the Scheme would have a low growth Net Present Value (NPV) of £8.1m and a high growth NPV of £202m. The corresponding Benefit Cost Ratios (BCRs) would be 1.02 for low growth and 1.59 for high growth.

If the opening year was brought forward by one year, these values would reduce slightly; the NPV would be £0.3m (low growth) and £195m (high growth), with BCRs of 1.0 and 1.55 respectively.

4.3 2.1km Cut & Cover Tunnel

4.3.1 Description

The horizontal alignment for the Cut & Cover Tunnel (Figure 4.2) would essentially follow that of the Published Scheme although the tunnelled section would be slightly closer to the line of the existing A303 to reduce the amount of land required for construction.

The vertical alignment would be set to minimise the excavation depth, again to limit the land needed for construction. The maximum permanent cutting depth at the portals would be approximately 10m, though temporary cuttings down to about 17m would be required during tunnel construction. Retaining walls would be required over an approximate length of 50m close to the Western Tunnel Portal to avoid direct impact on adjacent barrows. At Stonehenge Bottom the new highway alignment would cross approximately at existing ground-level. This would mean that the roof of the tunnel would protrude above-ground for a distance of approximately 220m across the dry valley. The top of the backfilled tunnel would be a maximum of 10m above the bottom of the valley floor (about twice the height of the existing A303 causeway) and it would therefore leave a permanent visible trace of its existence whatever mitigation treatment was applied. The view of this embankment from Stonehenge is shown as a photomontage at Figure 4.4.

The portal locations would be similar to the Published Scheme, located beyond the ridgelines out of sight from the Stones. As with the Published Scheme, the existing A303 between Longbarrow Crossroads and King Barrow Ridge would be returned to grassland, though all or part would remain as a right-of-way for walkers, cyclists and equestrians.

4.3.2 Design

The engineering assessment of the Cut & Cover Tunnel would be identical to the Published Scheme except for the tunnel itself.

Consideration of the tunnel structure for this Review has shown that a reinforced concrete arch structure would be the most cost effective solution and this has been used as the basis for estimating the cost of the option.

The proposed sequence of construction for the Cut & Cover Tunnel involves building the tunnel in two halves over each of two dry summer seasons. The tunnel would be constructed in a large excavation which would then be backfilled to the original ground profile, except across Stonehenge Bottom as discussed above.

The line of the Cut & Cover Tunnel would follow the existing A303 over the western half of the tunnel; hence the traffic would need to be diverted onto a temporary road to the south of the

alignment. This temporary road would be constructed in a manner that protected the potential buried archaeology beneath.

The Cut & Cover Tunnel would be closer to ground level than the Published Scheme bored tunnel; therefore its approach cuttings would be about 20m narrower.

The Cut & Cover Tunnel would produce approximately 100,000m³ less fill material than the Published Scheme. This volume would have to be imported from off-site in order to meet the fill requirements of the Winterbourne Stoke Bypass element of the scheme.

The operational arrangements and facilities within the Cut & Cover Tunnel would be essentially the same as for the bored tunnel with the Published Scheme. The means of escape in an emergency would however be slightly different in that a central passageway running between and parallel to the traffic bores would be utilised.

4.3.3 Cost and Programme

The current construction cost estimate for the 2.1km Cut & Cover Tunnel is £195m at 2003 prices. This has increased slightly from that reported in Stage 1 as a result of a more detailed risk assessment being completed.

The scheme budget estimate for the Cut & Cover Tunnel option is £413m, based on a programme that assumes a decision to proceed in late 2006 with a revised Environmental Statement and Draft Orders published in 2007. A Public Inquiry could then take place in 2008, with a construction start date of 2009 and an opening date of 2012. Details of the build-up to the budget figure are provided in Appendix D.

The current day (2006) construction cost estimate, updated using actual construction industry inflation indices over recent years, is £237m.

Preparation and supervision costs are estimated at £30m (including £18m preparation costs already incurred). This is higher than for the Published Scheme because further design work, preparation of an Environmental Statement, Orders and support at a Public Inquiry would be required.

An optimism bias figure of 8% has been used which is a lower allowance for uncertainty than would normally be allocated to a project that had not published draft Orders. However this is considered appropriate due to the high level of design work already completed, which includes the completion of a detailed risk assessment.

4.3.4 Environment

Cultural Heritage

The Cut & Cover Tunnel would follow a similar route to the Published Scheme, and would have broadly the same beneficial effects; however its method of construction would result in additional direct impacts upon as-yet undiscovered buried archaeological remains. In addition, a permanent alteration in landform in Stonehenge Bottom would result in adverse indirect effects upon Stonehenge and its immediately associated Monuments. Weighing the advantages and disadvantages, the Cut & Cover Tunnel accrues a Minor Beneficial overall effect upon cultural heritage.

Landscape and Visual Effects

The Cut & Cover Tunnel differs from the Published Scheme in having smaller cuttings approaching the tunnel portals, although they would still represent a major intrusion into the landform. It would also breach the ground surface in Stonehenge Bottom where it would be covered with earth, forming an engineered embankment. The alignment of the tunnel is rising from west to east across Stonehenge Bottom and the top of the embankment would rise from 9m to 10m above the level floor of the dry valley, compared with the 4.5m high embankment carrying the existing A303 slightly to the north. The top width of the two embankments would be roughly the same, at 25m, as the existing embankment carries the wide road layout

accommodating the A344 junction with the A303. The new embankment would be visible from Stonehenge as a clearly alien feature.

Biodiversity

The key permanent effects of the Cut & Cover Tunnel would be the same as the Published Scheme, with the same overall assessment score: Slight Beneficial (with potential for additional benefits through off-site agreements and land use change). Differences lie in the potential for short-term construction effects in the locality of the tunnelling operation. Species and features that may be affected by the increased noise and visual disturbance arising from the cut & cover works include breeding birds and wintering birds.

Potential effects of construction dust on the lichen communities on Stonehenge, Stonehenge Down Site of Nature Conservation Interest (SNCI), other valued grasslands and terrestrial invertebrate communities could be minimised by employing suitable dust suppression measures. As with the Published Scheme, there would be a small residual risk of a more serious dust release event. However, given the cut & cover construction method, this risk is potentially higher than with the Published Scheme and impacts could be of greater magnitude. Additional dust suppression measures would therefore need to be implemented beyond those proposed for the Published Scheme and this might entail specific temporary measures to protect the lichen communities on Stonehenge. This could have implications for the operation of the monument by English Heritage. Overall, the construction effects are assessed to be of up to temporary Moderate Adverse significance.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan. A residual risk would remain, however.

If the groundwater level in the chalk aquifer rises above about 78m AOD (tunnel invert) in the vicinity of Stonehenge Bottom during tunnel construction in a wet winter, then pumping of groundwater (with discharge to soakaways) would be required to enable construction to take place under dry conditions. The pumping would have no adverse effect on the natural groundwater flow regime, or on flow in the River Avon (into which groundwater discharges), since the pumping and discharge would take place in the same groundwater catchment. However, there may be a need to provide mitigation as follows:

- compensation flow at a spring at West Amesbury if a reduction in flow was attributable to pumping
- alleviation of flooding at Springbottom Farm, although the latter would probably have occurred naturally.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met. Indeed, the drainage system should result in an improvement in water quality (albeit slight) given that the existing system has no treatment facilities.

A drainage system beneath the tunnel in the vicinity of Stonehenge Bottom would only operate when the groundwater level rose to the drainage level in a wet winter, but it would ensure that the change to the natural groundwater flow regime was minimal; consequently, there would be negligible change to flow in the River Avon.

Geology and Soils

The environmental effects on the underlying geology and soils for the Cut & Cover Tunnel would be similar to the Published Scheme, with nothing to mitigate. As noted in Section 4.3.2 above, the bulk earthworks for this option are in near balance. Arisings from the tunnel excavation would be used as backfill, in structural embankments and for essential landscape mitigation works. Requirements for imported materials would be similar to the Published Scheme, but with an additional 100,000m³ needed.

Noise and Vibration

The noise level changes for the Cut & Cover Tunnel would be as for the Published Scheme over the whole of the route.

Air Quality

The Cut & Cover Tunnel would have the same permanent effects as the Published Scheme.

Community Effects and Rights-of-Way

The effects would be the same as the Published Scheme.

Vehicle Travellers

Many local people, and others who use the A303 frequently, value the view of Stonehenge from King Barrow Ridge. However, it is not possible to maintain views of Stonehenge from a car and still meet the scheme objective to remove the sight of roads and traffic from Stonehenge. This option would meet the scheme objective wholly, and vehicle travellers would no longer see Stonehenge.

Land Use

As reported to the Public Inquiry, it is probable that much of the agricultural land quality across the chalkland near Stonehenge would be classified as subgrade 3a. As noted by Defra, a route across agricultural land of poorer quality in this area would be “*impractical*”. Each route option would affect an area of similar land quality proportional to its length, and impact on farm businesses would be similar.

Disruption due to Construction

As with the Published Scheme, traffic would remain on or close to the line of the A303 within the World Heritage Site, but with slightly more extensive local diversions constructed above the ground surface to protect any buried artefacts. There would be views of the construction along the length of the route. Visitors to Stonehenge would experience increased noise levels and visual intrusion during construction.

Policies and Plans

The Cut & Cover Tunnel would be in substantial conformity with the objectives of the *World Heritage Site Management Plan*, but to a lesser degree than the Published Scheme due to the effects on the setting of Stonehenge of the 9-10m high embankment covering the above-ground section of the tunnel across Stonehenge Bottom. All options would close the A344 and thus allow the Government to meet its commitment to remove the effect of this road on The Avenue made at the time of the WHS inscription.

Although the *World Heritage Site Management Plan* does not directly refer to the concept of a 2km cut & cover tunnel, it was written at a time when this concept was the basis for the promotion of the A303 Improvement. The Management Plan does refer to the Master Plan which clearly promoted the 2km cut & cover tunnel. The Management Plan also specifically mentions a tunnel as a means of achieving its objectives, and the Cut & Cover Tunnel option could facilitate plans for a new Visitor Centre at Countess East.

4.3.5 Traffic and Economics

Traffic

As this option follows the same alignment as the Published Scheme, the traffic implications, including the safety benefits, are identical and are described in Section 4.2.5 above.

Economics

Economic analysis of this option shows that when the estimated costs are compared with the predicted benefits, it would have a low growth NPV of £75m and a high growth NPV of £270m.

The corresponding BCRs would be 1.27 for low growth and 1.97 for high growth. These figures are higher than those for the Published Scheme due mainly to the reduced cost and the shorter construction period.

4.4 Northern Route

4.4.1 Description

The Northern Route (see Figure 4.2) was developed from Alternative Route 3 (AR3) put forward at the Public Inquiry, which followed the line of the Purple Variant route identified for the 1995 Planning Conference held into the scheme.

North of Winterbourne Stoke the route diverges from the Published Scheme with a straight horizontal alignment carrying the road on a viaduct with a 6m clearance above the River Till. To achieve this, the road would be on embankments either side of the river. Existing bridleways would be maintained beneath the viaduct. East of the river the road would rise on an embankment up to 5m high for a length of 900m before descending into cutting near the brow of the hill. The cutting enables provision of an interchange with the A360 near Airman's Corner, with the A360 carried on an overbridge at existing ground level.

From here a long right-hand curve takes the route to the north of National Trust land (avoiding the majority of Scheduled Monuments) and behind a higher piece of ground to the west of Larkhill. A short left-hand curve then brings the alignment immediately south of the main Larkhill settlement. This length of the route would be in cutting, facilitating provision of two access overbridges at ground level. The route then swings to the east of The Cursus and between the Steel Houses and Strangways. West of the Steel Houses the route would be on slight embankment, and intervening ground levels would not stop the road being visible from Stonehenge across the sewage works. As mitigation for effects on nearby property, effects on rights-of-way and effects on biodiversity, 250m of cut & cover tunnel is proposed where the road passes between the dwellings at the Steel Houses and Strangways. From here the route heads south-eastwards back across National Trust land (with an overbridge provided for the byway) to the existing A303 just west of Countess Roundabout, which would be grade-separated.

Under this option, the existing A303 between Longbarrow Crossroads and Vespasian's Camp would be returned to grassland, though all or part would remain as a right-of-way for walkers, cyclists and equestrians.

4.4.2 Design

Grade-separated junctions would be provided to accommodate traffic movements with the local road network along the route. These include a junction with west-facing slip roads at the west end of Winterbourne Stoke Bypass, a full-movement, grade-separated junction with the A360 at Airman's Corner and a flyover with slip road connections to the roundabout below on the A345 at Countess.

The section of tunnel on the Northern Route would be constructed as a cut & cover structure to mitigate the visual and noise impacts on nearby residential properties and on The Cursus. It would also provide a crossing for the proposed land-train taking visitors from the planned new Visitor Centre at Countess East to a drop-off point at Durrington Down Farm and it would retain the important bat flightpath along King Barrow Ridge. The road alignment here is on a relatively tight horizontal curve and therefore would require additional width in its cross section to provide adequate sight lines.

The shorter length of this tunnel (250m), compared with the 2.1km Published Scheme tunnel, means that a separate service tunnel or escape passage would not be required. Similarly, separate tunnel services buildings at each portal would not be necessary; instead a single plant room building would serve for all the power and communication housing requirements. Most of the other safety systems would still be required although they would be significantly reduced in

number and complexity. With longer periods between routine maintenance, it may be possible to avoid the need to run traffic in contra-flow through the tunnel and therefore reduce the amount of approach signing required compared with the longer tunnel.

The significant structures required for the Northern Route to the west of the new grade-separated junction between the A360 and the A303 at Airman's Corner would be similar to those proposed for the Published Scheme. In comparison with the Published Scheme to the east of the A360, an additional bridge would be required to carry Fargo Road over the new A303. The tunnel between the Steel Houses and Strangways would be at a lowered vertical alignment which would allow a second crossing of Fargo Road and Bridleway Amesbury 39 to be taken over the top. The Northern Route would require at least three additional structures to carry Byway Durrington 10, the sewage works access road and Bridleway Amesbury 9A over the new road. Structures at Countess Roundabout, similar to those provided for the Published Scheme, would also be required.

Although the highway alignment and the essential mitigation earthworks have not been designed in detail, there is a likely shortfall of fill material of around 300,000m³ (needed to maintain a similar standard of mitigation to the Published Scheme) which would have to be imported.

The Northern Route would require 11 drainage treatment areas compared with 9 for the Published Scheme. Because much of the route would be in cutting near Larkhill, some of the drainage treatment areas would have to be sited at low points away from the road.

Public utilities would be encountered at Countess Roundabout and near Larkhill, and some diversions would be required.

Departures from design standards would be required, as for the Published Scheme, in relation to the use of the latest safety barrier standards and for the vertical alignment and stopping sight distances at the Countess flyover.

There is a possible safety issue for traffic on this route relating to the need for pumped drainage of cuttings near Larkhill (to a remote drainage treatment area) and an associated risk of flooding during an extreme rainfall event.

4.4.3 Cost and Programme

The current construction cost estimate for the Northern Route is £113m at 2003 prices. This has increased slightly from that reported in Stage 1 as a result of minor changes to the alignment and a general review of the detail.

The scheme budget estimate for the Northern Route is £317m. This is based on a programme that assumes a decision to proceed in late 2006 with an Environmental Statement and draft Orders published by 2008. A Public Inquiry could then take place in 2009, with a construction start date of 2010 and a scheme opening date of 2012. Details of the build-up to the budget figure are provided in Appendix D.

The current day construction cost estimate is £138m (2006 prices).

Preparation and supervision costs are estimated at £32m (including £18m preparation costs already incurred). This is higher than for the Published Scheme because further design work, preparation of an Environmental Statement, draft Orders and support at a Public Inquiry would be required.

An optimism bias figure of 25% has been used, higher than for the tunnel options because the Northern Route has not been assessed in as much detail.

4.4.4 Environment

Cultural Heritage

Of all the consultation options considered, the Northern Route would have the most adverse effect upon cultural heritage. These adverse effects derive not only from the immediate impacts of the route on cultural heritage sites, but also from the severance of Stonehenge from important associated Monuments such as Robin Hood's Ball, Durrington Walls and Woodhenge. The adverse effects are set against the beneficial effects of removing the existing A303 and the A344 from the central area of the WHS around Stonehenge, which would enable the setting to the Stones to be restored in accordance with the objectives of the *WHS Management Plan*. On balance though, the adverse effects are considered to outweigh the benefits, resulting overall in Minor Adverse effects.

Landscape and Visual Effects

Adverse visual effects on property would be much higher for the Northern Route than for the Published Scheme since it would run through the edge of Larkhill, passing south of the main settlement but north of the Steel Houses. In Larkhill 86 houses would be subject to Moderate Adverse visual effects and 29 to Slight Adverse. In Winterbourne Stoke, 9 properties would benefit from the Published Scheme alignment being shifted further north.

The Northern Route would be visible from Stonehenge over a length of 250m close to the point of sunrise on the summer solstice. Adverse visual effects also arise at the Roman Settlement at Foredown, barrows at Winterbourne Stoke Down, the Silo group, the Cursus group, Durrington Down group, Durrington Down, north of The Cursus and the Old King Barrows. Together, these adverse effects outweigh the visual benefits (resulting from the removal of the A303 over a greater length than for the Published Scheme) on the Winterbourne Stoke barrows, four isolated barrows close to the Western Tunnel Portal of the Published Scheme and Vespasian's Camp.

The Northern Route would interfere with the route of the land-train proposed to transport visitors from the planned new Visitor Centre at Countess East and would adversely affect their experience on their journey to the Stones.

There would be less visual impact on Winterbourne Stoke as the route is further north than the Published Scheme and screened by the topography.

The Northern Route would have Major Adverse landscape and visual effects between Fargo Plantation and Vespasian's Camp. As well as dividing Monuments such as Robin Hood's Ball, Durrington Walls and Woodhenge from Stonehenge, it would prevent any future expansion of the WHS open access area to the north. In running adjacent to Larkhill it would avoid the highest quality landscapes, but would substitute a high level of adverse visual effects on both private and military housing. It would adversely affect the visual amenity enjoyed by users of a number of rights-of-way.

Biodiversity

It is predicted that the Northern Route would result in overall net adverse effects due to the construction of a new road through largely undisturbed farmland and a crossing of the River Till in a location of particularly high quality habitats. There is potential for effects of Large or even Very Large Adverse significance on Stone Curlews, and hence on the Salisbury Plain SPA (this is a precautionary assessment which would require further study, including an 'Appropriate Assessment', to verify). Other effects of permanent (or with potential for permanent) Large Adverse significance are predicted for Barn Owls and Aquatic Vegetation (River Till Pond). Impacts of Moderate Adverse significance are predicted for wintering birds, habitats and vegetation and fish of the River Till, Great Crested Newts, breeding birds and bats. As for the Published Scheme, the success of mitigation cannot be absolutely guaranteed for certain receptors, especially not in the short to medium term.

Benefits would result from reconnection of previously fragmented habitat in the WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land, and potentially other areas through off-site agreement and land-use change. The improved protection for riverine flora and fauna from pollution events would also have a beneficial effect, although, as for the Published Scheme, this is unlikely to be quantifiable.

The overall assessment score for the Northern Route is considered to be Large Adverse but with a risk of Very Large Adverse (with potential for some benefits or reduction in this assessment through off-site agreements and land use change). While environmental control of construction activities could seek to avoid or minimise the severity or risk of construction-related impacts, as for the Published Scheme there would remain a small risk of incidents which could result in other temporary effects of up to Large Adverse significance.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan. A residual risk would remain, however.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met. The drainage system should result in an improvement in water quality (albeit slight), given that the existing system has no treatment facilities.

Geology and Soils

For the Northern Route, three areas of potential contamination have been identified from the Salisbury District Council database and these are summarised as follows:

- The alignment would cross an area to the north of Fargo Plantation (SU109437) that was previously occupied by Ministry of Defence buildings. These dated from the 1914-1918 war and included a hospital, but have since been demolished and levelled. It is possible that contamination exists beneath the site, particularly in relation to the former hospital
- The Northern Route would also cross an area of fill between Durrington Down Plantation and Fargo Road (SU119439). The nature, extent and depth remain unknown, however the Ministry of Defence have confirmed that this is an area of infill
- A disused landfill site exists at Down Barn (SU132438) that was used for the disposal of domestic and commercial waste (69000 m³) between 1940 and 1974 by Amesbury Rural District Council. An MOD incinerator and destructor originally occupied the northern part of this site. Wiltshire County Council deposited domestic waste until 1975, which was followed by the deposition of waste from civic amenity sites. The site has now been covered with topsoil and is wooded. Whilst the Northern Route would not cross the Down Barn area of fill, it could potentially affect drainage from this area

In areas of suspected contamination, mitigation would be implemented by site investigation, risk assessment and remedies, if required. Whilst contamination could be effectively mitigated through this approach, it would incur a financial cost.

Contaminated land represents a risk to the construction of the route for three main reasons, these being:

- Contaminated land would represent a possible health and safety risk to personnel on site

- Disturbance of an area of contaminated land could potentially pose a risk to groundwater quality due to the creation of contaminant migration pathways
- Additional and uncertain costs and delays to the construction programme as a result of site investigation and any necessary remedies

In all other respects, the environmental effects on the underlying geology and soils for the Northern Route would be similar to the Published Scheme, except that in order to provide the same level of mitigation as the Published Scheme, earthworks material would have to be imported to construct structural embankments and essential landscape mitigation.

Noise and Vibration

For the Northern Route, noise benefits at Winterbourne Stoke, Stonehenge and Stonehenge Cottages would be similar to the Published Scheme. However, the Northern Route would pass close to residential properties at Larkhill, the Steel Houses and Strangways producing substantial to major increases in noise compared with minimal or imperceptible changes for the Published Scheme. Noise level changes in the Countess Roundabout area would be similar to the Published Scheme.

There would be a significant reduction in traffic noise at Stonehenge.

Air Quality

The Northern Route would result in a general improvement in local air quality, with 31 properties experiencing a significant improvement and two a significant deterioration at opening year. Pollutant concentrations at receptor locations are expected to be within relevant air quality objectives. The improvement is less marked than with the Published Scheme. The Northern Route would result in an increase in CO₂ emissions over the wider study area by 23.2% compared with the Do-Minimum scenario. This represents a 7.3% increase compared with the Published Scheme.

Community Effects and Rights-of-Way

There would be some community severance in Larkhill. All public rights-of-way would be maintained.

Vehicle Travellers

Many local people, and others who use the A303 frequently, value the view of Stonehenge from King Barrow Ridge. However, the scheme objective is to remove roads and traffic from within sight of Stonehenge. This option would only meet the objective in part, exposing the road and traffic in the view from Stonehenge over a 250m length of the A303, and, in reverse, allowing a glimpse of Stonehenge over the same distance.

Land Use

As reported to the Public Inquiry, it is probable that much of the agricultural land quality across the chalkland near Stonehenge would be classified as subgrade 3a. As noted by Defra, a route across agricultural land of poorer quality in this area would be “*impractical*”. Each route option would affect an area of similar land quality proportional to its length, and impact on farm businesses would be similar.

Disruption due to Construction

There would be local diversions and temporary community severance, particularly along Fargo Road. Traffic on the A303 would be largely unaffected, other than at Countess Roundabout and for construction plant and equipment crossings.

Policies and Plans

The Northern Route would be in partial conformity with those objectives of the *World Heritage Site Management Plan* which relate to the removal of roads and traffic from the central area

around Stonehenge, but would be in conflict with the main thrust of the Plan which envisages a 2km tunnel and no additional adverse effects in the outer parts of the WHS. All options would close the A344 and thus allow the Government to meet its commitment made at the time of the WHS inscription to remove the effect of this road on The Avenue.

The inclusion of a grade-separated junction at Countess Roundabout could accommodate safe access for the new proposed Visitor Centre. However, the lack of conformity of surface routes with the objectives of the *WHS Management Plan*, and the potential conflict between this Northern Route and the proposed land-train routes for transporting visitors, might give rise to the Visitor Centre lottery funding being questioned.

4.4.5 Traffic and Economics

Traffic

The Northern Route would achieve many of the traffic benefits of the Published Scheme.

The new junction on the A360 west of Airman's Corner would also provide a connection to the B3086 leading to The Packway. Forecasts indicate that this would attract some traffic to/from the Durrington area via The Packway to access the A303 (west), so that traffic volumes along the Packway through Larkhill would increase by around 15%.

As with the Published Scheme, the Northern Route would give significant safety benefits by replacing the existing single carriageway with a high standard dual carriageway route throughout, which would remove, or substantially reduce, vehicle conflicts at existing accident cluster points such as Countess Roundabout and the junction with the A344.

Economics

Economic analysis of this option shows that when the estimated costs are compared with the predicted benefits, it would have a low growth NPV of £131m and a high growth NPV of £311m. The corresponding BCRs would be 1.97 for low growth and 3.46 for high growth. These values are higher than those for the Published Scheme due to the lower construction and maintenance costs.

4.5 Southern Route

4.5.1 Description

The Southern Route (see Figure 4.2) is developed from a route (Grey Route) selected for consultation in 1993; this route was not considered by the 1995 Planning Conference which concentrated on tunnel options.

From the west, the Southern Route initially follows the line of the Published Scheme around the north side of Winterbourne Stoke. The route then heads in a south-easterly direction crossing the line of the existing A303 before entering a 9m cutting and forming a new all-movement grade-separated junction with the A360 to the south and west of the existing Longbarrow Crossroads junction. The route then continues in a south-easterly direction in cutting before emerging at ground level near the extension of Byway Amesbury 12 at Normanton Down. Two overbridges would be needed to carry the byways across the new route. Skirting the north side of Wilsford Down, the route would be in slight cutting before a short length of embankment across Stonehenge Bottom. Vehicles would be visible from Stonehenge over a length of 120m, but it is likely that the alignment could be refined to remove this view while still avoiding Scheduled Monuments. More detailed design work would be necessary to confirm this definitively. The route then continues on a left-hand curve in deep cutting up the hill before turning to rejoin the existing A303 to the east of King Barrow Ridge. Access would be maintained to Stonehenge Cottages via an overbridge.

Under this scheme, the existing A303 between Longbarrow Crossroads and King Barrow Ridge would be returned to grassland, though it would remain as a right-of-way for walkers, cyclists and equestrians.

4.5.2 Design

Junction arrangements are similar to the Published Scheme, although the Longbarrow Crossroads junction would be slightly further to the south than with the Published Scheme.

The structures required for the Published Scheme along the Winterbourne Stoke Bypass, at Longbarrow Crossroads and at Countess Roundabout would also be required for the Southern Route. In addition three more structures would be required; two bridges would carry Byway Amesbury 11 and Byway Amesbury 12 over the A303 just south of Normanton Down and a further structure at the northern end of Stonehenge Road would be required over the A303 to provide access to Stonehenge Cottages. There is no tunnel with this option.

Although the highway alignment and essential mitigation earthworks have not been designed in detail, there is a likely shortfall of fill material of around 340,000m³ which would have to be imported from off-site.

The Southern Route would require 10 drainage treatment areas compared with 9 for the Published Scheme.

Public utilities would be encountered mainly at the Countess Roundabout and overall there would be fewer diversions than with the Published Scheme.

Departures from design standards would be required, as for the Published Scheme, in relation to the use of the latest safety barrier standards and for the vertical alignment and stopping sight distances at the Countess flyover.

4.5.3 Cost and Programme

The current construction cost estimate for the Southern Route is £95m at 2003 prices.

The scheme budget estimate for the Southern Route is £273m. This is based on a programme that assumes a decision to proceed in late 2006 followed by the publication of an Environmental Statement and draft Orders in 2008. A Public Inquiry could then take place in 2009, with a construction start date of 2010 and a scheme opening date of 2012. Details of the build-up to the budget figure are provided in Appendix D.

The current day construction cost estimate, updated using actual construction industry inflation indices over recent years, is £115m (2006 prices).

Preparation and supervision costs are estimated at £32m (including £18m preparation costs already incurred). This is higher than for the Published Scheme because further design work, preparation of an Environmental Statement, draft Orders and support at a Public Inquiry would be required.

An optimism bias figure of 25% has been used, higher than for the tunnel options because the scheme has not been assessed in as much detail.

4.5.4 Environment

Cultural Heritage

The Southern Route runs to the south of Normanton Down, and would broadly achieve the aim of improving the setting of Stonehenge and its immediately associated Monuments. However, it would also result in a direct impact upon a Scheduled Monument, namely a linear earthwork running south-east from Longbarrow Crossroads. Also, the construction of a new road through a currently unspoilt downland landscape would result in adverse indirect effects upon several other Scheduled sites, including severance from Stonehenge and Normanton Down of the Wilsford and Lake barrow cemeteries to the south. The road would also lead to new direct impacts upon buried archaeological remains. On balance, weighing the positive and negative effects, the Southern Route has been assigned a Minor Beneficial overall effect.

Landscape and Visual Effects

The Southern Route's major disadvantage in landscape and visual terms would be its effect on remote, generally tranquil countryside and public rights-of-way converging on Stonehenge from the Woodford valley and other points south. It would have no adverse effect on property over the length where it diverges from the line of the Published Scheme and its adverse visual effects on Scheduled Monuments are balanced by beneficial effects on others through removing more of the existing A303 than the Published Scheme. (Further detailed design of the Southern Route would be likely to remove any views of traffic from Stonehenge, but in the event of that not being possible, traffic on a 120m section of the route would be visible from the Stones, resulting in an associated adverse effect).

Biodiversity

It is predicted that the Southern Route would result in overall adverse impacts due to the construction of a new road through largely undisturbed farmland, including an area currently being managed by the RSPB as a nature reserve. There is potential for effects of Large or even Very Large Adverse significance on Stone Curlews, and hence on the Salisbury Plain SPA (this is a precautionary assessment which would require further study, including an 'Appropriate Assessment', to verify). Impacts of Moderate Adverse significance are predicted for breeding and wintering birds. Impacts of Slight Adverse significance are predicted for Barn Owls, bats and possibly badgers. It may be possible to reduce the various impacts through additional (extensive) mitigation including off-site agreements, but the success of these measures cannot be guaranteed in the short to medium term.

Benefits would result from reconnection of previously fragmented habitat in the WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land, and potentially other areas through off-site agreement and land-use change. The improved protection for riverine flora and fauna from pollution events would also have a beneficial effect, although, as for the Published Scheme, this is unlikely to be quantifiable.

The overall assessment score for the Southern Route is considered to be Large Adverse but with a risk of Very Large Adverse (with potential for some benefits or reduction in this assessment through off-site agreements and land use change). While environmental control of construction activities would seek to avoid or minimise the severity or risk of construction-related impacts, there would remain a small risk of incidents (as for the Published Scheme) which could result in temporary effects of up to Large Adverse significance.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan; a residual risk would remain, however.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met. The drainage system should result in an improvement in water quality (albeit slight), given that the existing system has no treatment facilities.

The provision of a culvert through the embankment where the route crosses Stonehenge Bottom would ensure that the passage of surface water flow (which occurs when groundwater levels rise naturally to surface) remains unimpeded.

Geology and Soils

The environmental effects on the underlying geology and soils for the Southern Route would be similar to the Published Scheme and there are no effects to mitigate.

Noise and Vibration

As with the Published Scheme, the Southern Route would produce traffic noise benefits for Winterbourne Stoke and similar affects in the Countess Roundabout area. There would be a significant reduction in traffic noise at Stonehenge.

Air Quality

The Southern Route would result in a general improvement in local air quality, with 29 properties experiencing a significant improvement at opening year, with no significant deterioration at any properties. Pollutant concentrations at receptor locations are expected to be within relevant air quality objectives. The improvement is less marked than with the Published Scheme. The Southern Route would result in an increase in CO₂ emissions over the wider study area of 34% compared with the Do-Minimum scenario. This represents a 16.7% increase compared with the Published Scheme.

Community Effects and Rights-of-Way

All public rights-of-way would be maintained. There are no communities to be affected where the route passes through the southern part of the World Heritage Site.

Vehicle Travellers

Many local people, and others who use the A303 frequently, value the view of Stonehenge from King Barrow Ridge. However, the scheme objective is to remove roads and traffic from within sight of Stonehenge. It is anticipated that, if this option were to be pursued, more detailed review and design of the alignment across Stonehenge Bottom would enable this objective to be wholly secured. At worst traffic could be visible from the Stones over a 120m length of the route where it crosses Stonehenge Bottom.

Land Use

As reported to the Public Inquiry, it is probable that much of the agricultural land quality across the chalkland near Stonehenge would be classified as subgrade 3a. As noted by Defra, a route across agricultural land of poorer quality in this area would be “*impractical*”. Each route option would affect an area of similar land quality proportional to its length, and impact on farm businesses would be similar.

Disruption due to Construction

Traffic on the A303 would be largely unaffected, other than at Countess Roundabout and for construction plant and equipment crossings.

Policies and Plans

The Southern Route would be in partial conformity with those objectives of the *World Heritage Site Management Plan* which relate to the removal of roads and traffic from the central area around Stonehenge, but would be in conflict with the main thrust of the Plan which envisages a 2km tunnel and no additional adverse effects in the outer parts of the WHS. All options would close the A344 and thus allow the Government to meet its commitment to remove the effect of this road on The Avenue, made at the time of the WHS inscription.

The inclusion of a grade-separated junction at Countess Roundabout could accommodate safe access for the proposed new Visitor Centre. However, the lack of conformity of surface routes with the objectives of the *WHS Management Plan* might give rise to the Visitor Centre lottery funding being questioned.

4.5.5 Traffic and Economics

Traffic

The Southern Route would achieve many of the traffic benefits of the Published Scheme.

The Southern Route, like the Published Scheme, would give significant safety benefits by replacing the existing single carriageway with a high standard dual carriageway throughout, which would remove, or substantially reduce, vehicle conflicts at a number of existing accident cluster points, most notably at Countess Roundabout and the junction with the A344.

Economics

Economic analysis of this option shows that when the estimated costs are compared with the predicted benefits, it would have a low growth Net Present Value (NPV) of £195m and a high growth NPV of £384m. The corresponding BCRs would be 2.76 for low growth and 4.68 for high growth. These values are higher than those for the Published Scheme and the Northern Route due to lower construction and maintenance costs.

4.6 Partial Solution

4.6.1 Description

The Partial Solution (see Figure 4.3) has the same Winterbourne Stoke Bypass and Countess Roundabout improvements as the Published Scheme. However, the A303 through the World Heritage Site would largely remain as it is now, leaving unaltered the existing single carriageway trunk road between Longbarrow Crossroads and the dual carriageway at King Barrow Ridge, except for the closure of the A344 junction in Stonehenge Bottom.

Four junction options at Longbarrow Crossroads were put forward for consultation, as described below and shown on Figure 4.3.

Option 1

The Winterbourne Stoke Bypass would terminate at a new roundabout where the new dual carriageway rejoins the existing A303. The existing A360 Longbarrow Crossroads junction would remain as it is. This is the minimum cost option requiring no construction within the World Heritage Site, but congestion would get worse without improvements to the existing Longbarrow Crossroads junction.

Option 2

This is a development of Option 1. East of the new roundabout the A303 would be diverted to the south of Longbarrow Crossroads, passing under the A360 without connection. The Option would improve the setting to the barrows north of Longbarrow Crossroads, but would cross a Scheduled linear earthwork. It would reduce the traffic problems on the A303 at Longbarrow Crossroads, but could lead to rat-running and congestion in nearby villages.

Option 3

This builds on Option 2 by providing a new roundabout on the A360 with link road connections accommodating full movement between the A360 and the A303, and reducing the possibility of adding significant traffic to the local road network.

Option 4

This has the new A303 running to the south of Longbarrow Crossroads (as Options 2 and 3 but without a new roundabout on the A303), at first as dual-carriageway, but reducing to single-carriageway to tie in with the existing A303 east of Longbarrow Crossroads. The A360 would be carried over the A303, with link road connections between the two. This Option would do most to reduce traffic congestion.

4.6.2 Design

Junction arrangements would be similar to the Published Scheme at Winterbourne Stoke and Countess Roundabout. Various options are possible at Longbarrow Crossroads, as described above.

Structures along the Winterbourne Stoke Bypass and at Countess Roundabout would be the same as for the Published Scheme. Structures at Longbarrow Crossroads would depend on the options described above.

Although essential mitigation earthworks have not been designed in detail, it is likely that there would be a significant shortfall of fill material of between 890,000m³ and 950,000m³ (depending on the junction option), needed largely for the construction of the Winterbourne Stoke Bypass.

The Partial Solution would require 7 drainage treatment areas compared with 9 for the Published Scheme.

Public utilities would be encountered mainly at Countess Roundabout and elsewhere there would be fewer diversions than with the Published Scheme.

Departures from design standards would be required, as for the Published Scheme, in relation to the use of the latest safety barrier standards and for the vertical alignment and stopping sight distances at the Countess flyover.

Overall, the Partial Solution would not resolve congestion on the A303, and queuing would be expected at busy times. The closure of the A344 would improve safety at this location, but there would be an ongoing risk of accidents with the Partial Solution, particularly with increased turning movements and congestion at Longbarrow Crossroads, depending on the design solution adopted.

There are also concerns over the adequacy of sight distances for westbound traffic crossing over the Countess flyover and approaching a tailback of traffic queued from where the A303 reduces from dual to single carriageway at King Barrow Ridge.

The existing single carriageway section of the A303 through the World Heritage Site also has public right-of-way crossing points which give rise to safety concerns.

4.6.3 Cost and Programme

The construction cost estimates and overall scheme budget for the Partial Solutions with the different junction options are shown in the Table 4.2 below.

Table 4.2 Partial Solution construction costs

Junction Option	Construction Cost at 2003 prices	Construction Cost at 2006 prices	Scheme Budget (assuming construction start in 2010)
Option 1	£67m	£81m	£167m
Option 2	£75m	£91m	£180m
Option 3	£78m	£94m	£185m
Option 4	£80m	£97m	£190m

It is estimated that the programme for all these options is likely to be the same and would include approximately 1 year to prepare an Environmental Statement and publish draft Orders by 2008. This would have to include time for additional survey work needed at the borrow pit location supplying the scheme's imported earthworks fill requirements. A Public Inquiry could then take place in 2009 with the start of construction in 2010. It is estimated that the construction of the works would take 21 months with an opening date in 2012.

Preparation and supervision costs are estimated at £28m (including £18m preparation costs already incurred). This is higher than for the Published Scheme because preparation of an Environmental Statement, draft Orders and support at a Public Inquiry would be required.

An optimism bias figure of 5% has been used, lower than for the other options because much of the details are essentially the same as those for the Published Scheme, but without the bored tunnel and upgrading works through the WHS.

4.6.4 Environment

Cultural Heritage

The Partial Solution would have the fewest new adverse impacts upon cultural heritage sites of all the options under consideration, and, in closing the A344 adjacent to Stonehenge, would achieve the Government's commitment made at the time of the WHS inscription, whilst not addressing the Government's ambitions regarding removal of the A303. However, leaving the A303 in place through the World Heritage Site means there are few beneficial effects to balance the adverse effects of the Partial Solution. As a result, each of the Partial Solution (junction) options has been assigned a Neutral overall effect.

Landscape and Visual Effects

Although the Partial Solution would result in the removal of traffic on the A344 adjacent to Stonehenge, it would perpetuate and increase the existing visual intrusion of traffic on the A303 and maintain the landscape severance. It would offer relief to Winterbourne Stoke in removing traffic from the A303 through the village. However the essential ground-shaping mitigation needed to counter the visual effects of the Bypass to the north of the village requires the import of between 890,000m³ and 950,000m³ (depending on the junction option) of fill material. The environmental impact of borrow pits needed to supply this material would have to be assessed.

Junction Option 2 would potentially result in a 50% increase in traffic on The Packway, giving adverse visual effects on 100 homes and community facilities.

Biodiversity

The Partial Solution would not provide any habitat creation or reconnection within the World Heritage Site and therefore there would be no beneficial effects over this section. The overall impacts for a number of ecological resources would be more adverse than for the Published Scheme, for which beneficial effects within the WHS can be used to balance adverse effects elsewhere for certain ecological resources. The Partial Solution is predicted to have Slight to Moderate Adverse effects on breeding birds, and Slight Adverse effects on Stone Curlews, Barn Owls, wintering birds and reptiles. Effects on Stonehenge Down SNCI, lichens on Stonehenge and Badgers are assessed to be Neutral. For all other ecological resources, the effects of the Partial Solution are assessed as likely to be the same as for the Published Scheme.

Overall, the permanent effects of the Partial Solution are assessed to be Slight to Moderate Adverse (with potential for some additional benefits through off-site agreements and land use change). While environmental control of construction activities could seek to avoid or minimise the severity or risk of construction-related impacts, as for the Published Scheme there would remain a small risk of incidents which could result in temporary effects of up to Large Adverse significance.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan. A residual risk would remain, however.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met.

The drainage system should result in an improvement in water quality (albeit slight), given that the existing system has no treatment facilities.

Geology and Soils

The environmental effects on the underlying geology and soils for the Partial Solution and all the junction options for Longbarrow Crossroads would be similar to the Published Scheme.

However, as a tunnel would not be constructed as part of this option there would be a requirement to import earth material to form the embankments for the new grade-separated junction at Countess Roundabout and for the essential landscape mitigation for the Winterbourne Stoke Bypass. The environmental effects at the source of the imported soil would therefore need to be assessed. Potential sources of suitable fill material have not been investigated in detail at this stage.

Noise and Vibration

The noise benefits for Winterbourne Stoke would be similar to the Published Scheme. There would be small noise decreases at Stonehenge, compared with major decreases for the Published Scheme. Similarly for Stonehenge Cottages imperceptible changes would result from all options. The Published Scheme would give rise to major decreases for these properties.

In the area of Countess Roundabout, traffic noise impacts would be similar to those for the Published Scheme.

Air Quality

There would be a general improvement in local air quality, with 31 properties experiencing a significant improvement at opening year, with no significant deterioration at any properties. Pollutant concentrations at receptor locations are expected to be within relevant air quality objectives. However, the improvement is less marked than with the Published Scheme.

The Partial Solution would result in small increases in CO₂ emissions over the wider study area compared with the Do-Minimum scenario. The increases are slightly less than those predicted for the Published Scheme.

Community Effects and Rights-of-Way

The existing difficulties for users of rights-of-way through the WHS in crossing the A303 would be made worse because closing the A344 junction would lead to increased traffic flows between Stonehenge Bottom and Longbarrow Crossroads (see Section 4.6.5 following).

Vehicle Travellers

Many local people, and others who use the A303 frequently, value the view of Stonehenge from King Barrow Ridge. The Partial Solution would fail meet the objective of removing roads and traffic from sight of Stonehenge and consequently vehicle travellers on the A303 would continue to enjoy views of the Stones.

Land Use

The Partial Solution would affect less agricultural land than the other options as the A303 would be left as it is through the WHS.

Disruption due to Construction

Traffic would remain on or close to the line of the existing A303 with short local diversions constructed around the works where needed.

Policies and Plans

The Partial Solution would be in conflict with those objectives of the *World Heritage Site Management Plan* which relate to the removal of roads and traffic from the central area around Stonehenge and with the main thrust of the Plan which envisages a 2km tunnel. All options would close the A344 junction and allow the Government to meet its commitment to remove the effect of this road on The Avenue, made at the time of the WHS inscription.

The inclusion of a grade-separated junction at Countess Roundabout could accommodate safe access for the proposed new Visitor Centre. However, the lack of conformity with the objectives of the *WHS Management Plan* might give rise to the Visitor Centre lottery funding being questioned.

The Partial Solution would leave the A303 as a single carriageway through the WHS and, therefore, would not fulfil the Government's strategy for upgrading the A303/A358 route to a dual carriageway between London and the South West.

4.6.5 Traffic and Economics

Traffic

The A303 between Longbarrow Crossroads and King Barrow Ridge would remain as a single carriageway under the Partial Solution. However, the closure of the A344 junction would transfer a significant volume of traffic onto the A303 between Stonehenge Bottom and Longbarrow Crossroads, as this together with the A360 forms the logical alternative route for traffic using the A344 to access the A303. Consequently, the Partial Solution would have the effect of exacerbating congestion on this section of the A303 to varying degrees, depending on the junction option chosen at Longbarrow Crossroads.

Countess Roundabout would be grade-separated, with signal control on the roundabout, as proposed under the Published Scheme. The issue of junction improvement at Countess was examined in some detail in June 2000 in a report entitled the *Countess Roundabout Assessment of Improvement Options (Halcrow 2000)*, when three improvement options were considered:

- Existing at-grade roundabout with signal control
- Signal-controlled 'hamburger' arrangement for through traffic on the A303 (with the A303 dual-carriageway passing at-grade through the centre of the roundabout)
- Full grade-separation

The assessment indicated that grade-separation was the only option with sufficient design life to accommodate future traffic flows. Also, as Countess has a relatively poor accident record, there are significant safety benefits in removing the A303 through traffic from the junction through grade-separation. The study concluded that the grade-separation of Countess Roundabout was the preferred option, and that such a solution would also be capable of accommodating the relocated Stonehenge Visitor Centre at Countess East, adjacent to the roundabout.

The four junction options for the Partial Solution raise some potential congestion issues that cannot be assessed properly with the existing traffic model, so a more detailed appraisal would be required in order to assess fully the effects of these options if the Partial Solution were to be pursued.

In terms of safety, whilst the Partial Solution would remove or reduce vehicle conflicts at some existing cluster points such as Countess Roundabout and the A344 junction, the existing single carriageway would be retained between King Barrow Ridge and Longbarrow Crossroads. As the closure of the A344 junction would transfer a significant volume of traffic to the single carriageway section between Stonehenge Bottom and Longbarrow Crossroads, the accident record on this section (and at Longbarrow Crossroads under Option 1) can be expected to deteriorate.

Option 1

In comparison with the Published Scheme, the traffic volumes on the Winterbourne Stoke Bypass would be very similar, along with the relief provided to the village. Traffic volumes to the west of Countess Roundabout would be some 5% below those for Do-Minimum as a result of the closure of the A344, which will cause some traffic to use The Packway and the A345 as the link between the A360 and A303.

The most significant aspect of Option 1 is the retention of the existing roundabout at Longbarrow Crossroads, which has the potential to exacerbate congestion on this section of the

A303. Whilst the existing traffic model is not sufficiently detailed to examine the operation of the junction fully, tests have been carried out using the Department for Transport's ARCADY program for the 2008 forecast year.

Tests show that in the Do-Minimum (i.e. without the addition of A344 traffic on the A303), the roundabout would operate close to but generally within capacity. But the transfer of A344 traffic would have a significant impact on the capacity of the roundabout, particularly on the approach from the east in the evening peak period. For a typical weekday evening peak in 2008, ARCADY predicted maximum queues of 120 (low growth) and 490 (high growth) as a result. At high growth, these queues would equate to delays of about 10 minutes per vehicle. This situation would be exacerbated by continued growth in demand beyond 2008. It is likely that, faced with these delays, some drivers would begin to seek alternative routes, creating potential problems along local roads unsuited for carrying heavy flows of traffic.

Tests for a summer Friday evening peak showed longer queues (of up to 16 minutes) on the approach from the east, with flows predicted to be 43-67% above capacity, while the approach from the west would also be well over capacity with extensive queuing. However, if traffic begins to divert to alternative routes in order to avoid excessive queues on the single carriageway A303, then traffic forecasts here could be over-estimated, while the impact on other routes will be under-estimated. This could in turn impact on the economic assessment of the Partial Solution scenarios.

The results of the traffic forecasts suggest a highly congested situation, and as the existing traffic model is not able properly to represent this, the traffic analysis for the Partial Solution scenarios may be unreliable. While it is difficult to predict future queue lengths, it is possible to anticipate that, under Option 1 in particular, westbound traffic could regularly encounter queues extending all the way back from Longbarrow Crossroads along the single carriageway section of A303 through the WHS past Stonehenge and back onto the dual carriageway section to the east of King Barrow Ridge.

Option 2

The removal of the existing Longbarrow Crossroads Roundabout in Option 2 would sever the connection between the A303 and the A360, resulting in a greater dispersion of traffic onto alternative routes than with any other option. Model results indicate that traffic on the B3083 between Shrewton and Winterbourne Stoke would more than double, although flows would still remain at a relatively low level. Of greater significance would be the increase in traffic on The Packway through Larkhill of around 50%, with some of this increase continuing to the A3028 through Durrington and Bulford.

Longer distance traffic with northerly destinations would be likely to make more significant diversions outside the main study area. Traffic on the A360 from Devizes would have the opportunity to switch to the A342 route between Devizes and Upavon, thereby approaching the study area along the A345. The model indicates an increase in traffic volumes on the A345 to the north of Durrington of about 40%.

In addition, some longer distance movements from the A36 at Warminster at present choose to enter the study area via the B390 at Shrewton rather than travel down the A36 to the A303 junction at Wyllye. In the absence of a connection with the A303 from either the A344 or the A360, more than half of this traffic would choose to continue down the A36 to the A303 junction, resulting in a 3% increase in traffic volumes predicted for the Winterbourne Stoke Bypass.

Some of these diversions could result in a net reduction in traffic of up to a third using the A303 between Countess Roundabout and Longbarrow Crossroads. Traffic on the A360 between Longbarrow Crossroads and Salisbury would also reduce by about a third, with a corresponding increase in traffic volumes on the A345 to the south of Countess through the town of Amesbury.

This Option would clearly present an issue for longer distance traffic with two main routes crossing without a connection between them. Whilst this might be addressed to some extent by a

major overhaul of the signing of long-distance traffic onto preferred routes such as the A345 / A342, there would be a significant risk of many drivers rat-running along unsuitable local routes.

Whilst the Option would remove the potential bottleneck created by the existing roundabout at Longbarrow, a roundabout would still have to be constructed at the eastern end of the Winterbourne Stoke Bypass, with the A303 from the east continuing to be a single carriageway. Whilst the loss of A360 traffic onto other routes would relieve the A303 at this point, traffic volumes would still be similar to the Do-Minimum flows that would prevail without the A344 closure, so it might be expected that conditions at the new roundabout would be broadly similar to those currently experienced at the existing Longbarrow Crossroads Roundabout.

Option 3

Whilst this Option maintains a connection between the A360 and the A303, it would still result in some traffic diversion; in particular, the increase in traffic on the A345 north of Durrington would be very similar to that predicted under Option 2, while the increase in traffic using The Packway would be about half that assessed for Option 2.

This Option would create a new four-arm roundabout at the eastern end of the Winterbourne Stoke Bypass and, as with Option 2, the A303 entry from the east would be via a single carriageway. ARCADY tests indicate that the roundabout would generally operate within capacity, but that there would not be a great deal of spare capacity on the single carriageway approach from the east during the critical evening peak period. Tests for a summer Friday evening peak indicated that this approach would be significantly over capacity, with corresponding maximum queues of between 235 and 650 vehicles. Additional traffic growth beyond 2008 could be expected to exacerbate this situation, on average weekdays as well. Again, this may result in some traffic diverting onto other routes to avoid such queues.

This situation is only likely to be resolved by widening the A303 approach to the roundabout from the east, in order to provide a two lane approach over a significant length. Whilst this might apply to Options 1 and 2 as well, the roundabout in Option 3 is complicated by the additional arm from the A360, so that widening the A303 approach may require a different alignment to be adopted, which could change the scheme footprint and give rise to different impacts and costs.

Option 4

Traffic forecasts for Option 4 are broadly similar to those for Option 3. Option 4 would, however, remove the capacity restraint of the at-grade junction on the A303 that features in Options 1-3, and in general it would provide a safer layout than the other options. It would, however, still retain the single carriageway section of the A303 between Longbarrow Crossroads and King Barrow Ridge, which would continue to present a bottleneck on the route, with associated congestion and queuing at peak times.

The layout also presents some potential safety problems on the eastbound carriageway of the A303. The simple left-in/left-out arrangement would need to incorporate full deceleration and acceleration lanes for traffic leaving and joining the A303. In the case of the acceleration lane for traffic joining the A303, this would probably need to be 130m in length. In addition, the Design Manual for Roads and Bridges (TD 22/06) states that a grade-separated junction should not be provided within 0.5km of a changeover from dual to single carriageway

The preliminary layout shown for Option 4 would meet the above criteria, but only just. This leaves little room for manoeuvre to accommodate any desired changes arising from detailed design, with the possible exception of extending the dualling of the A303 within the World Heritage Site. It may also be considered undesirable to have traffic joining the eastbound mainstream flow at a point where vehicles travelling at speed along the dual carriageway may be required to slow down rapidly and merge into a single lane, possibly with associated queuing arising from the change in carriageway standard.

Economics

The economic performance of the Partial Solution would vary depending upon which junction option was chosen. The results are summarised in Table 4.3 below:

Table 4.3 Costs and Economic Benefits of Partial Solution

		Partial Solution Junction Option			
		1	2	3	4
Net Present Value (NPV) (£m)	Low Growth	71	52	103	184
	High Growth	85	79	185	317
Benefit Cost Ratio (BCR)	Low Growth	1.94	1.62	2.18	3.04
	High Growth	2.23	2.02	3.21	4.68

These results should be treated with considerable caution, however. As noted above, the current traffic model is not able to represent the full effects of congestion. Consequently the economic results for the Partial Solutions are not considered to be as reliable as for the other scheme options.

If the Partial Solution was to be pursued, it would be necessary to undertake new traffic surveys and extend the traffic model in order to undertake robust analysis and economic assessment of the junction options before deciding which should be promoted through the statutory process.

It is worth noting that, if it proves necessary to revisit the statutory process with any option following this Scheme Review, the existing traffic data and model would have to be updated because of the age of the current data.

5 Assessment of Other Options Put Forward by Consultees

5.1 Introduction

The consultation process yielded a number of suggested alternative routes, as set out in Section 3.10. These fell into three broad categories, as follows:

- alternative routes put forward at the Public Inquiry
- variations on the options presented for public consultation
- other alternatives

Such alternatives have been treated in the following manner.

Alternative routes put forward at the Public Inquiry were reviewed in the Stage 1 Report, with updated costs and economic benefits presented therein. Beyond that, it is considered that the evidence presented at the Public Inquiry and reported by the Inspector can be relied upon to inform the decision-making on the way forward for this scheme. Hence these alternatives, or close variants of them, have not been considered further in this review.

Some of the variations on the options presented for consultation have been noted as being potentially worthy of further consideration if that option was chosen as the way forward. However, there has been no need to consider these variations further at this stage before a decision is made on the way forward.

Other alternatives have been assessed at a sufficient level of detail to allow them to be compared with the options presented for consultation. This process brought forward just one option for further assessment, namely a route corridor through Larkhill, proposed by the National Trust. This assessment of this corridor is summarised below, and further summarised in the Appraisal Summary Tables (ASTs) presented at Appendix E.

5.2 National Trust Larkhill Corridor

5.2.1 Description

The corridor suggested by the National Trust in their response to consultation is shown on Figure 5.1. There are several possible routes within this corridor, and criteria were discussed with the Trust in an attempt to produce the route most suited to their aims. This is shown as Route 1. A second route was also developed along the corridor in an attempt to reduce the impacts on people and property through Larkhill and to reduce the environmental impacts where the corridor extends to the east of the A345. This is shown as Route 2.

To facilitate a comparison with the options assessed in Chapter 4, the information presented in Table 4.1 is repeated below in Table 5.1, but with Routes 1 and 2 also included.

Table 5.1 Broad Comparison of Options

	Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution (junction option 3)	Route 1	Route 2
Construction Costs (2003 prices)	£289m	£195m	£113m	£95m	£78m	£118m	£114m
Scheme Budget	£539m	£413m	£317m	£273m	£185m	£347m ¹	£338m
BCR low growth	1.02	1.27	1.97	2.76	2.18	1.57	1.65
BCR high growth	1.59	1.97	3.46	4.68	3.21	2.92	2.98
Total length	12.4 km	12.4 km	14 km	12.9 km	7.1 km (12.4 overall)	17.1km	15.8km
Length within the World Heritage Site ²	3.4 km	3.4 km	6.4 km	6.0 km	As existing	6.1km	6.2km
Permanent highway land required in the WHS	20 ha	20 ha	28.6 ha	31.4 ha	2.4 ha	24 ha	27 ha
Additional temporary land required in the WHS	0.8 ha	10 ha	1.9 ha	0	0	0	0
Number of properties within 100m	9	9	40	5	9	129	22
Length of road visible from Stonehenge	0	0	250m	0 ³	As existing	0	250m
Number of new river crossings (SSSI, SAC)	1	1	1	1	1	2	2
Number of Scheduled Monuments directly affected	0	0	0	1	0	4 at 3 sites	0

¹ Does not include MOD relocation costs.

² Length of road excluding tunnel sections.

³ Further detailed design should screen a 120m section of the Southern Route that would otherwise be visible from Stonehenge.

Both Routes 1 and 2 are identical to the Northern Route to the west of Larkhill. This route is designed to avoid a series of Scheduled Monuments either side of the Till valley, and to avoid the wider sections of the River Till SAC north of Winterbourne Stoke. It would follow a dry valley east of the River Till and would use the topography to keep the A360 at existing ground level, with the A303 passing beneath in cutting.

Route 1 would continue eastwards through the centre of Larkhill, parallel with and south of The Packway. This was specifically suggested by the National Trust to position the route close to the edge of the WHS. Taking the route along the Packway itself has been dismissed because feeder roads would still be needed parallel to the route to cater for local accesses. Routes north of Larkhill have also been dismissed because of their direct impact on the Salisbury Plain SAC/SPA/SSSI and on military training areas.

Route 1 would then turn slightly northwards, passing north of National Trust land at Durrington Walls before a long right-hand curve takes the route under (without connection to) the existing roundabout on the A345 at the southwest corner of Durrington. The route up to this point would generally be in cutting, and would require the existing road (The Packway) to the west of the roundabout, and the roundabout itself, to be moved northwards. A junction between the A303 and A345 at this point has not been included because it would either result in property being demolished in Durrington village or cause a direct impact on Durrington Walls. A junction offset to the north of the main line of the A303 would occupy a large area of land (with free flow slip roads on and off the westbound carriageway passing over the A303), and would affect an early prehistoric settlement enclosure north-west of the existing roundabout, and so has also been dismissed.

Continuing eastwards and emerging from cutting, Route 1 would then be elevated on an 850m long viaduct with a 5m clearance over the River Avon to reduce the effects of shading on the river SAC. It would pass through parkland belonging to Watergate House, a Grade II Listed flint and chalk house, plus a Listed barn. The route would then continue close to ground level skirting to the south of the village of Bulford before climbing up towards a new all-movement junction with the existing A303. The alignment follows the initial corridor suggested by the National Trust but avoiding barrows and other cultural heritage sites as far as possible. On the edge of Bulford a house would have to be demolished to avoid the relocation of a National Grid corner pylon.

To avoid Larkhill itself, Route 2 continues along the line of the Northern Route until clear of the south east corner of Larkhill. From here Route 2 is taken north to join Route 1 around the north of Durrington Walls. A tighter right-hand curve is then provided to bring Route 2, with a shorter 280m long viaduct across the Avon, to a new junction at Folly Bottom with the existing A303. This route avoids the effect on Watergate House and Bulford and provides a shorter crossing of the River Avon flood plain. It would also miss the Scheduled barrows on the ridgeline south-east of Bulford.

Routes along the National Trust corridor would allow the closure of the existing A303 between Longbarrow Crossroads and Countess Roundabout, and this could be returned to grassland, though all or part would remain as a right-of-way for walkers, cyclists and equestrians. Between Countess Roundabout and the junctions of Routes 1 and 2 with the A303, the road would be detrunked and could potentially be downgraded from dual to single carriageway in the light of the reduced traffic flows that would use this link for local access to Amesbury and to the new Stonehenge Visitor Centre.

5.2.2 Design

To the west of Airman's Corner, Route 1 would have the same structures as the Northern Route. East of Airman's Corner, the route would sever a number of existing roads and accesses through Larkhill, needing up to six new road bridges to maintain access. A bridge would also be needed to carry the A345 over the route, just to the north-east of Durrington Walls. Further road bridges would be required under the route for Salisbury Road, which links Bulford and Amesbury, and to the east of Solstice Park on the existing A303, where a new all-movement junction would be constructed.

The most significant structure for Route 1 would be that needed to carry the A303 over the River Avon and its associated flood plain. As the proposed alignment runs parallel to the river in the flood plain, a structure would have to ensure that flood storage areas are not significantly reduced. It is envisaged that a structure of up to 850m in length with piled foundations would be required.

Route 2 passes south of Larkhill on a similar alignment to the Northern Route, before joining Route 1 to the north of Durrington Walls. This would require approximately half the number of new structures to maintain existing roads and accesses. For Route 2, the crossing of the River Avon is further downstream, reducing the impact on the flood plain, and a shorter bridge over the river could be provided. It is envisaged a structure approximately 280m in length would be required. South of the River Avon, structures would also be needed to accommodate Bridleway Amesbury 6 and public footpath Amesbury 7, although it is possible that one of these could be diverted in order for one bridge to carry both footpath and bridleway. Route 2 would also require a road bridge to form a new all-movement junction with the existing A303 at Folly Bottom.

Although essential mitigation earthworks have not been designed in detail, it is likely that there would be a shortfall of fill material of around 300,000m³ which would have to be imported from off-site.

Both Route 1 and Route 2 would require 9 drainage treatment areas, the same number as the Published Scheme. Because much of the route is in cutting near Larkhill, some of the drainage treatment areas would have to be sited at low points away from the road.

Public utilities would be encountered at Larkhill, Durrington and Bulford, and diversions would be required.

Departures from design standards would be required in relation to the use of the latest safety barrier standards, as for the Published Scheme.

There is a possible safety issue for traffic on this route relating to the need for pumped drainage of cuttings near Larkhill (to a remote drainage treatment area) and an associated risk of flooding during an extreme rainfall event.

5.2.3 Cost and Programme

The construction cost for Route 1 is estimated to be £118m at 2003 prices (£143m at 2006 prices), requiring an overall budget of £347m as explained further in Appendix D. The construction cost estimate for Route 2 is £114m at 2003 prices (£138m at 2006 prices), giving an overall budget of £338m. This estimate has been prepared using the same rates as for the Published Scheme. It does not include costs which might be incurred by the MOD in relocating their facilities, including their training grounds and ammunition stores. Defence Estates have estimated that such costs might amount to £500m; even at half this amount, Route 1 would require a higher budget than the Published Scheme with its affordability problems.

It is estimated that the programme for both Routes 1 and 2 would include approximately 2 years to prepare an Environmental Statement and publish draft Orders by 2009. This is likely to take longer than for other alternative route options because additional survey work would be required along the line of the route to the east of the World Heritage Site, and in particular for the crossing of the Avon river floodplain. A Public Inquiry could then take place in 2010 with a start of construction in 2011. It is estimated that construction would take 30 months with an opening date in 2013.

5.2.4 Environment

Cultural Heritage

Route 1 would result in a similar level of adverse effects as the consultation Northern Route - a Moderate Adverse overall effect, with Route 2 resulting in Minor Adverse effects. These adverse effects derive not only from the impacts of the routes on cultural heritage sites, in particular the effect on Durrington Walls and Woodhenge, but also the severance of Stonehenge from important associated Monuments such as Robin Hood's Ball. The routes avoid the consultation Northern Route's severance of Stonehenge from Durrington Walls and Woodhenge, and its conflict with the new Visitor Centre land-train access arrangements.

Landscape and Visual Effects

Route 1 would require demolition of the Officers Mess, the Youth Club, Catholic Church and 30 houses in Larkhill, causing Substantial Adverse visual intrusion within the settlement. It would also have Substantial Adverse visual effect on Durrington Walls, Woodhenge and on the Roman Settlement at Foredown, and a barrow at Winterbourne Stoke Down, on the Avon valley and on property in Durrington and Bulford, including a Grade II Listed Building (Watergate House and barn) and its parkland. It would avoid land owned by the National Trust and would have greater advantages than the Published Scheme in allowing the removal of the existing A303 between Longbarrow Crossroads and Countess Roundabout, as well as avoiding the need for a grade-separated junction next to Countess Farm, a Grade II Listed Building, but these benefits are dwarfed by its adverse effects.

Route 2 would avoid property demolition in Larkhill, while still having an adverse visual effect on the southern edge of the settlement and the Steel Houses. It would also reduce the adverse effects in Bulford. Although an improvement on Route 1, the overall landscape and visual

effects of Route 2 are still significantly worse than any of the options put forward for consultation.

For both routes, the impacts to the west of Larkhill would be the same as those assessed for the Northern Route.

Biodiversity

Route 1 would be anticipated to result in overall adverse impacts due to the construction of a new dual carriageway through largely undisturbed farmland, crossing over the River Till in a location of particularly high quality habitats and making a new crossing over the River Avon. There is the potential for effects of Large or even Very Large Adverse significance on Stone Curlews, and hence on the Salisbury Plain SPA (this is a precautionary assessment which would require further study, including an 'Appropriate Assessment', to verify). Other adverse effects of permanent (or with potential for permanent) Large Adverse significance are predicted for riverine habitats, vegetation, aquatic macro-invertebrates and fish in the River Avon, aquatic vegetation in the River Till pond, and Barn Owls. It may be possible to reduce these effects through additional mitigation including off-site agreements, but the success of these measures cannot be guaranteed in the short to medium term. Impacts of Moderate Adverse significance are predicted for breeding and wintering birds.

Further impacts of Slight Adverse significance are predicted for the River Avon SAC and SSSI, Salisbury Plain SAC and SSSI, habitats and vegetation and fish in the River Till, Desmoulin's Whorl Snails, Great Crested Newts, riverine birds, bats and Water Voles.

Benefits would result from reconnection of previously fragmented habitat in the WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highways land and potentially through off-site agreements and land-use change. The improved protection from pollution events for riverine flora and fauna would also have a beneficial effect although, as for the Published Scheme, this is unlikely to be quantifiable.

The overall assessment score for Route 1 is considered to be Large Adverse but with a risk of Very Large Adverse (with potential for some benefits or reduction in this assessment through off-site agreements and land use change). While environmental control of construction activities could seek to avoid or minimise the severity or risk of construction-related impacts, the scale of the construction activities near the River Avon SAC may be more difficult to control than for the Published Scheme and there is the risk that construction effects here could be longer than temporary in duration.

In terms of biodiversity, the main differences between Route 1 and Route 2 lie in the different locations of the new crossing of the River Avon SAC, and their respective distances from the Salisbury Plain SPA. Route 2 is considered likely to have a less adverse effect on both these receptors, however probably not so much as to change the assessment scores. The overall assessment score for the Route 2 is therefore considered to be the same as for Route 1: Large Adverse but with a risk of Very Large Adverse (with potential for some benefits or reduction in this score through off-site agreements and land use change).

The crossing of the River Avon SAC introduces a high level of risk for any routes within the National Trust corridor and would also be likely to require an 'Appropriate Assessment' to verify the effects, including the potential impact on water quality (further described below). Any scheme which affects a Natura 2000 site (SAC and SPA) has to demonstrate either no adverse effect on the features for which the site is designated or that there is no feasible alternative and that the scheme is of overriding public benefit. If these tests cannot be satisfied the proposals would fail.

Water

All practical means to protect river quality and groundwater quality would be taken during construction through the implementation of the Contractor's Environmental Management Plan. The plan would need to include specific, stringent controls covering construction over the 1km

section which runs through the Source Protection Zone (SPZ) (shown on Figure 5.1) for Durrington pumping station, and would need the full agreement of both the Environment Agency and Wessex Water. However, risks to both the water environment and Durrington pumping station cannot be entirely negated.

Provision of drainage treatment areas to deal with road drainage in the long term would ensure that the Environment Agency's criteria for both groundwater and river quality would be met. The drainage system should result in an improvement in water quality (albeit slight), given that the existing system has no treatment facilities.

Spillage of hazardous materials beyond the capacity/control of the road drainage system across the SPZ (albeit an event with an extremely low probability) could result in contamination and the long term shut down of Durrington pumping station which supplies a population of about 30,000. In all likelihood, it would be extremely difficult to satisfy both the EA and Wessex Water on the risk element. The ultimate mitigation would be to provide a standby source elsewhere (if one could be found or constructed) in case of an emergency. This would be expensive, adding further to the already very high cost estimates for this corridor (see Section 5.2.3).

Geology and Soils

Route 1 would avoid two potentially contaminated areas that the Northern Route passes through, namely: the area north of Fargo Plantation (SU109437) that was previously occupied by MOD properties, including a hospital; and an area between Durrington Down Plantation and Fargo Road (SU119439), which the MOD have confirmed to be an area of infill. Route 1 would also run to the north of Down Barn (SU132438), but be approximately the same distance away as the Northern Route.

Historical mapping shows that Route 1 would pass by an area that was previously occupied by railway sheds (SU170433). These features, however, are not considered to be significant constraints to the route.

The remainder of the Route 1 does not pass directly through any areas identified by historical mapping to have the potential to be significantly contaminated. However, where the route crosses the River Avon, this option would require significant additional work to assess potential impacts in the softer materials associated with the River Avon floodplain. It is possible therefore that mitigation would be required if further assessment of this route identified any impacts associated with the proposed works.

Route 2 minimises the length of road to pass across the River Avon floodplain and avoids the area of active MOD property.

The central part of Route 2 follows a similar alignment to that of the Northern Route and therefore passes through the two areas of potential concern already identified (north of Fargo Plantation and the area of infill), and passes closer to the Down Barn Landfill (and former incinerator). Historical mapping has not shown this route to pass directly through any other areas that have the potential for significant contamination. In the eastern section, between Durrington and the existing A303, the route passes close to a sewage works and the historical location of railway sheds. These features, however, are not considered to be significant constraints to the route.

In all other respects, the environmental effects on the underlying geology and soils for Route 1 and Route 2 would be similar to the Published Scheme, except that in order to provide the same level of mitigation as the Published Scheme, earthworks material would need to be imported to construct structural embankments and essential landscape mitigation works.

Noise and Vibration

Compared with the Published Scheme, the National Trust corridor would be less beneficial through Winterbourne Stoke, as more traffic would remain on the existing A303. For

Stonehenge, Routes 1 and 2 would be as effective as the Published Scheme in reducing traffic noise at the Stones.

Route 1 would pass through Larkhill resulting in Substantial to Major Increases of traffic noise at Larkhill properties and Slight to Moderate Increases at the Steel Houses and Strangways. This compares with Imperceptible to Minimal changes with the Published Scheme. To the east of the A345, Route 1 would impact upon the southern edge of Durrington and Bulford. Moderate and Major increases in noise levels respectively are predicted for the most exposed properties, compared with Imperceptible changes with the Published Scheme.

Noise benefits would arise at Amesbury Abbey complex and North Amesbury with Slight Decreases in noise level, compared with Minimal Increases for the Published Scheme. Noise levels in Countess Road are expected to be similar to the Published Scheme.

For Route 2, properties to the south of Larkhill would receive Substantial to Major Increases in noise, compared with no perceptible change or minimal increases for the Published Scheme. Noise benefits would arise at the Amesbury Abbey Complex and North Amesbury with Slight Decreases in noise level, compared with Minimal Increases for the Published Scheme.

Air Quality

Unlike the Published Scheme, Route 1 would result in a general deterioration in local air quality, with 31 properties experiencing a significant improvement and 69 a significant deterioration at opening year. Pollutant concentrations at receptor locations are expected to be within relevant air quality objectives. Route 1 would result in an increase in CO₂ emissions over the study area of 21.5% compared with the Do-Minimum scenario. This represents a 5.8% increase compared with the Published Scheme.

Route 2 would result in a general improvement in local air quality, with 31 properties experiencing a significant improvement and 6 properties experiencing a significant deterioration at opening year. Pollutant concentrations at receptor locations are also expected to be within the relevant objectives. The improvement is less marked than with the Published Scheme. Route 2 would result in an increase in CO₂ emissions over the study area of 25.3% compared with the Do-Minimum scenario. This represents a 9.2% increase compared with the Published Scheme.

Community Effects and Rights-of-Way

There would be significant community severance in Larkhill during construction, although on completion, all rights-of-way and existing roads would be maintained.

Route 1 would require demolition of the Officers Mess, the Youth Club, Catholic Church and 30 houses in Larkhill, introducing a discontinuity into the urban fabric. In Bulford Route 1, but not Route 2, would result in the demolition of 1 property.

Vehicle Travellers

Many local people, and others who use the A303 frequently, value the view of Stonehenge from King Barrow Ridge. However, the scheme objective is to remove roads and traffic from within sight of Stonehenge and thereby remove the view of the Stones from the A303. Route 1 would be hidden from Stonehenge, but Route 2, which runs south of Larkhill, would expose the road and traffic to view from Stonehenge over a 250m length of the A303, and, in reverse, would give a glimpse of Stonehenge over the same distance.

Land Use

As reported to the Public Inquiry, it is probable that much of the agricultural land quality across the chalkland near Stonehenge would be classified as subgrade 3a. As noted by Defra, a route across agricultural land of poorer quality in this area would be "*impractical*". Each of the routes would affect an area of similar land quality proportional to its length, and impact on farm businesses would be similar.

Disruption due to Construction

Route 1 would require local diversions and cause temporary community severance, particularly in Larkhill, Durrington and Bulford. Traffic on the A303 would be largely unaffected, other than for construction plant and equipment crossings.

Route 2 would require local diversions and cause temporary community severance, particularly along Fargo Road and in Durrington. Traffic on the A303 would be largely unaffected, other than for construction plant and equipment crossings.

Policies and Plans

Routes 1 & 2 would be in conformity with those objectives of the *World Heritage Site Management Plan* which relate to the removal of roads and traffic from the central area around Stonehenge, but would be in some conflict with the main thrust of the Plan which envisages a 2km tunnel and no additional adverse effects in the outer parts of the WHS. In running through Larkhill, Route 1 would be close to the northern boundary of the WHS and relatively well screened by Larkhill itself from the broad area of the WHS to the south. The A344 would be closed (with routes 1 & 2) and thus allow the Government to meet its commitment to remove the effect of this road on The Avenue made at the time of the WHS inscription.

The inclusion of a grade-separated junction east of the A345 could significantly reduce traffic at the existing Countess Roundabout, thereby facilitating safe access for the proposed new Visitor Centre. However, the degree to which the route corridor is deemed to conflict with the objectives of the *WHS Management Plan* could give rise to the Visitor Centre lottery funding being questioned.

Both Routes 1 and 2 would be in substantial conflict with the National Trust's own Land Use Plan.

5.2.5 Traffic and Economics

Traffic

Route 1 would represent a longer diversion of the A303 than any of the other options. It would bypass both the Countess Roundabout and Folly Bottom junctions at Amesbury, and would have no connection with the A345 at Durrington. With the closure of the existing A303 between Countess Roundabout and Longbarrow Crossroads, traffic travelling from the Amesbury area to the west would have to join the A303 either by travelling east to the new junction near Bulford Camp, or by travelling via A345 and The Packway to the junction with the A360 near Airman's Corner.

Because both Routes 1 and 2 are longer, and have no direct connection with either the A345 or (in the case of Route 1) Amesbury, they would attract less traffic than some of the other main options. With Route 1 traffic volumes on the section between Bulford Camp and the A360 junction would be about 25% below those predicted for the Published Scheme between Countess Roundabout and Longbarrow Crossroads, while traffic volumes in Route 2 would be about 10% lower because of the shorter diversion to Folly Bottom. There would also be a corresponding significant increase in traffic volumes using the A345 north of Countess Roundabout, the A3028 through Durrington, and on The Packway. On the Winterbourne Stoke Bypass section of the route, traffic volumes would be about 10% below those predicted for the Published Scheme.

Both Routes 1 and 2 would provide a similar level of safety benefits as the other whole-scheme options by replacing the existing single carriageway with a high standard dual carriageway route throughout, with reduced vehicle conflicts at existing accident cluster points such as Countess Roundabout and the A344 junction.

Economics

Economic analysis of Route 1 shows that when the estimated costs are compared with the predicted benefits, it would have a low growth Net Present (NPV) of £76m and £237m at high growth. This gives BCRs of 1.57 and 2.92 for low and high growth respectively. These values are higher than those for the Published Scheme due to lower construction and maintenance costs. However, the costs do not include MOD compensation payments, and it could be that the net benefits would be less than those for the Published Scheme.

Economic analysis of Route 2 shows that when the estimated costs are compared with the predicted benefits, it would have a low growth Net Present (NPV) of £77m and £215m at high growth. This gives BCRs of 1.65 and 2.98 for low and high growth respectively. These are broadly similar to values for Route 1 without the MOD compensation costs.

5.2.6 Conclusion

The National Trust corridor would be less efficient than other options in interacting with the local road network. It would also have a major impact on people and property and on local communities, as well as on MOD interests. If it is to be considered further, therefore, it would have to give rise to significantly greater environmental benefits than other options put forward.

In environmental terms, however, neither Route 1 nor Route 2 offers an overall improvement in assessment score in any single topic over the Northern Route, itself considered the least attractive option among those selected for consultation. Although both routes avoid the Northern Route's severance of Durrington Walls and Woodhenge from Stonehenge, and are closer to the boundary of the World Heritage Site, they would both have a significant adverse effect on the setting of Durrington Walls and Woodhenge. In addition, their effects on the River Avon SAC would be difficult, if not impossible, to steer through the legislation relating to this Natura 2000 European level designation. With the added potential for damage to a Source Protection Zone, it is safe to conclude that there is no route within this corridor which merits further consideration at this time.

6 Comparison of Options

6.1 Introduction

The Terms of Reference for the Review (Appendix A) make clear that the performance of each shortlisted option should be assessed against the Government's objectives, looking in particular at environmental impacts, relief of congestion on the A303, compatibility with the Stonehenge *World Heritage Site Management Plan* (including plans for a new Visitor Centre), value for money, affordability and deliverability. The full assessment of each option is summarised in Chapter 4 while this Chapter 6 draws on the results of those assessments in order to compare their performance under the objectives identified in the Terms of Reference.

6.2 Environment

With regard to environmental impacts, the Published Scheme provides the best outturn, with significant benefits for cultural heritage, landscape, biodiversity and noise, and no overall adverse impacts.

The Cut & Cover Tunnel does not provide the same level of benefit as the Published Scheme due to the loss of potential buried archaeology along the footprint, and the introduction of a 9-10m high embankment across Stonehenge Bottom. Nevertheless, it provides benefits in terms of cultural heritage, landscape, biodiversity and noise with no overall adverse impacts.

The Northern Route is assessed to have adverse overall impacts for noise, biodiversity, townscape and cultural heritage. In particular, its effect on property in Larkhill and its alignment between Stonehenge and other key Monuments mentioned in the WHS inscription such as Durrington Walls, Woodhenge and Robin Hood's Ball offset the benefits it would offer in removing traffic from the area around Stonehenge. It would be visible from Stonehenge near the point of sunrise at the summer solstice over a length of 250m. It would also have adverse impacts on biodiversity, in particular affecting Stone Curlews and thus the Salisbury Plain SPA, and a valuable pond near the River Till.

Like the Northern Route, the Southern Route would allow the removal of a greater length of the existing A303 road construction than the Published Scheme, benefiting a small number of Scheduled Monuments in the outer parts of the WHS. These benefits are balanced by adverse effects on other Monuments in cultural heritage terms, including severance from Stonehenge of important barrow cemeteries to the south. The major adverse impact of the Southern Route arises from its location in remote and tranquil countryside in the south of the WHS and from its effect on birds, in particular on Stone Curlews, and by association on the Salisbury Plain SPA, through the loss of a nature reserve managed by the RSPB. It would also adversely affect users of rights-of-way linking the Woodford valley to Stonehenge. It is assessed to have at least a large adverse impact on biodiversity and slight beneficial or neutral impacts in all other environmental areas.

The Partial Solution would produce adverse impacts on landscape and biodiversity, and would have no overall cultural heritage benefit. It would not achieve the objective of removing traffic and roads from the area around Stonehenge, but would retain views of the Stones from the A303 for passing travellers. The Partial Solution would provide benefits for Winterbourne Stoke in terms of reduced noise and severance, as would all other options. In the area of Stonehenge, it would reduce traffic on the A344 east of the existing Visitor Centre, but increase traffic on the A303 past Stonehenge. This would have adverse impacts in terms of cultural heritage, biodiversity, and landscape and visual effects. In addition, material required to provide earthworks essential to mitigate the noise, visual and landscape effects of the Winterbourne Stoke Bypass would need to be imported. It would therefore be necessary to find a location for a borrow pit from which to obtain some 900,000m³ of fill material. In an area as rich in archaeology as this, a suitable site would probably be at some distance from the scheme. A separate site would also be subject to a planning application and, with no powers of compulsory acquisition, would be a matter for negotiation with landowners.

6.3 Congestion and Safety

All shortlisted options other than the Partial Solution would provide a solution that would resolve the current congestion issues and provide a continuous dual carriageway for this section of the A303. They would also remove the current accident black spots. These four options would also contribute to the delivery of the Government's strategy for improving the A303/A358 route to a dual carriageway between London and the South West.

The Partial Solution would resolve some congestion issues, but would still leave a bottleneck on the A303; there would be queuing at busy times on the approaches to the single carriageway section through the World Heritage Site. There are also safety concerns with the Partial Solution. These relate to vehicles approaching queuing traffic (particularly from the east where sight distances are limited) and to congestion related accidents. The Partial Solution would also not fulfil the Government's strategy for upgrading the A303/A358 route to the South West.

6.4 Stonehenge WHS Management Plan and New Visitor Centre

6.4.1 WHS Management Plan

The context established by the *Stonehenge WHS Management Plan* and the Stonehenge Project is described in Section 2.1. The Plan has been prepared and published in order to meet the UK's obligations under the World Heritage Convention and has been commended by the World Heritage Committee. The requirements of the Convention and its Operational Guidelines are:

- World Heritage Sites must have outstanding universal value, authenticity and, for those sites inscribed recently, integrity
- World Heritage Sites must have adequate legal protection and management systems to protect their value
- The outstanding universal value of a site is agreed by the World Heritage Committee at the time of inscription
- The World Heritage Committee should be notified by the state party (in the case of Stonehenge the Department of Culture Media and Sport - DCMS - acting on behalf of the Government) of any major changes to any site
- The World Heritage Committee receives reports of problems (Reactive Monitoring)
- The State Party periodically reports on the state of conservation (Periodic Monitoring, which has recently taken place for all the European sites)

When Stonehenge was inscribed in 1986, the World Heritage Committee noted with satisfaction the assurances provided by the authorities of the UK that the closure of the road (A344) which crosses The Avenue at Stonehenge was receiving serious consideration as part of the overall plans for the Site. Since the Management Plan was published in 2000, the Committee has:

- In 2001 noted Government proposals for putting the A303 in a 2km (cut & cover) tunnel, closing the A344 and siting the Visitor Centre outside the World Heritage Site
- In 2002 noted progress
- In 2003 welcomed the UK Government's decision to construct a bored tunnel
- In 2004 noted the progress with the A303 Stonehenge Improvement and the proposals for a new Visitor Centre and welcomed the opportunity for the public to make their views known in the decision making process at Public Inquiry

If the Committee considered a WHS to be under threat they may:

- Seek more information, if necessary send a mission
- Offer advice or assistance

- Inscribe the site on the World Heritage in Danger List, if it believes that there is actual or imminent danger to the site
- Delete a site from the World Heritage List altogether if it has lost the characteristics which put it onto the list in the first place, or if the necessary corrective measures agreed at the time of inscription have not been carried out

In his Report on the Public Inquiry, the Published Scheme was judged by the Inspector to meet the objectives of the Stonehenge *World Heritage Site Management Plan* to an acceptable degree. Specifically, it would remove views of roads and traffic from most of the core area around Stonehenge, and would allow the Government to meet its commitment, made at the time of WHS inscription, to remove the A344 where it crosses The Avenue, allowing this feature to be reunited with the stone circle.

The Cut & Cover Tunnel would have most of these benefits but, by leaving a major engineered embankment within view from Stonehenge, would be less compatible with the *WHS Management Plan*.

The Northern and Southern Routes would be in partial conformity with those objectives of the *WHS Management Plan* which relate to the removal of roads and traffic from the central area around Stonehenge, but would conflict with the main thrust of the Plan which envisages a 2km tunnel and no additional adverse effects in the outer parts of the WHS. The routes would allow the Government to meet its commitment, made at the time of WHS inscription, to remove the A344 where it crosses The Avenue.

The Partial Solution would be in conflict with those objectives of the *WHS Management Plan* which relate to the removal of roads and traffic from the central area around Stonehenge via a 2km tunnel. However the A344 junction would be closed and the Government would thus meet its commitment to remove the effect of this road on The Avenue, made at the time of the WHS inscription.

Options other than the proposals for a tunnel have not yet been put to the World Heritage Committee. It may be that if a wholly new road within the World Heritage Site were proposed as the way forward, the Committee's reaction would be adverse.

6.4.2 Visitor Centre

The dependence of English Heritage's proposals for a new Visitor Centre at Countess East on the A303 Stonehenge Improvement Scheme is described in Section 2.1. English Heritage purchased the land at Countess East in 2000 with funding provided by DCMS. The planning consent for the proposal allows for a new Visitor Centre and visitor transit system, as well as the removal of the existing visitor facilities adjacent to the Stones.

With a new Visitor Centre (and parking) located about 3km from Stonehenge, a sustainable transit system is required to transport visitors closer to points within walking distance of the stone circle. The proposal is for a scheme based on land trains running from Countess East under the A345 and the eastern part of the WHS to King Barrow Ridge, and then on to Durrington Farm, as shown on Figure 2.1.

The delivery of the Published Scheme would meet the planning condition set by Salisbury District Council on the Visitor Centre and would allow the development to proceed. Approval of the Scheme would also facilitate the release of lottery funding. Visitors exploring the landscape would experience major benefits with the Scheme removing the effect of severance between the northern and southern parts of the WHS either side of Stonehenge.

When the Stonehenge Project was first put together in 1998 (originally as the Stonehenge Masterplan) and then taken into the Management Plan in 2000, it was based on placing the A303 in a cut & cover tunnel. Such an option, therefore, could potentially facilitate the delivery of the Visitor Centre, assuming the conditions for planning permission and lottery funding could be renegotiated. The Cut & Cover Tunnel would also bring similar major benefits for visitors

exploring the landscape, however the substantial new earthwork created in Stonehenge Bottom would be a large alien intrusion into the setting to the Stones and would significantly hinder public interpretation of the central part of the WHS.

The Northern Route is not compatible with the Visitor Centre proposals in that it would not satisfy the conditions for planning permission or for the release of lottery funds to the project, although it would provide the grade-separated junction with the A345 needed to accommodate safe access to Countess East. Additionally the Northern Route would cross the land-train route proposed to transport visitors from the new Centre and would detract from their experience on their journey to the Stones. While the Northern Route would partly remove the effect of severance between the northern and southern parts of the WHS, this would be at the expense of introducing a major new barrier to free unrestricted access between Stonehenge and Durrington Walls / Woodhenge. The barrier would also hinder public interpretation of the Site as a connected and coherent ceremonial landscape. Also the visibility of traffic from Stonehenge over a 250m section of route close to the point of sunrise on the summer solstice would have a negative effect on the visitor experience.

Like the Northern Route, the Southern Route is similarly not compatible with the Visitor Centre proposals in that it would not satisfy the conditions for planning permission or for the release of lottery funds, although it too would provide the grade-separated junction with the A345 needed to accommodate safe access to Countess East. The Southern Route would bring benefits for visitors exploring the northern part of the landscape, but the effect of severance between northern and southern parts of the WHS would remain, albeit further south. The detailed design of this route would be likely to remove any views of traffic from Stonehenge but, in the event that was not possible, the visibility of traffic over a 120m section of the route would have a negative effect on the visitor experience.

The Partial Solution again is not compatible with the Visitor Centre proposals in that it would not satisfy the conditions for planning permission or for the release of lottery funds, though it would provide the grade-separated junction with the A345 needed to accommodate safe access to Countess East. The closure of the A344 across The Avenue to its junction with the A303 would do something to improve the visitor experience at Stonehenge, but the traffic noise and visual intrusion and severance caused by the existing A303 would remain as a blight on the visitor experience.

6.5 Value for Money

Value for money is considered initially here in terms of an economic assessment of the costs of the scheme compared with the benefits derived from improved traffic flow and reduction of accidents. This assessment is based on a 60 year period for which a range of traffic predictions are used. Table 6.1 below gives a summary of the results for each of the options.

Table 6.1 Summary of Economic Assessment Results

	Present Value Cost (£m) (PVC)		Present Value Benefits (£m) (PVB)		Net Present Value (£m) (NPV)		Benefit Cost Ratio (BCR)	
	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth	Low Growth	High Growth
Published Scheme	349.0	343.7	357.1	545.4	8.1	201.7	1.02	1.59
Cut & Cover Tunnel	283.3	278.2	358.7	548.0	75.3	269.9	1.27	1.97
Northern Route	135.2	126.7	266.1	437.9	130.9	311.2	1.97	3.46
Southern Route	111.1	104.2	306.4	487.9	195.3	383.7	2.76	4.68
Partial Solution, Option 3	87.9	83.7	191.3	268.7	103.4	185.0	2.18	3.21

The results of the economic assessment show that all the options have larger benefits than costs with BCR values greater than 1.0. The Published Scheme has the lowest BCR values due to the higher construction and maintenance costs. The benefits are higher than the surface route

options because of the shorter travel distances. The Cut & Cover Tunnel has lower construction costs than the Published Scheme but very similar benefits and thus has higher BCR values.

The Northern Route is the longest of the options and therefore has lower benefits. However its lower costs means that the BCR values are still higher than the tunnel options.

The Southern Route provides the best value with the highest BCR values, being a relatively short route with the lowest 'whole scheme' costs.

The Partial Solution has been assessed with junction Option 3 and shows relatively high BCR values. These values would vary depending on the junction option selected at Longbarrow Crossroads with the full-movement grade-separated Options 3 and 4 giving higher values than the at-grade Options 1 and 2 (see Section 4.6.5, Table 4.3). While these are relatively good results, they must be treated with considerable caution because the traffic model does not analyse congestion accurately, and the Partial Solution would suffer from congestion at busy times.

Overall the 'whole scheme' options would offer value for money to varying degrees, with the lower-cost options providing more value than the higher-cost options. The Partial Solution may also provide value for money but the actual value would be affected by the impacts of future traffic congestion.

When it comes to making investment decisions on transport projects, the Department for Transport's (DfT) Guidance on Value for Money states that "*a project will generally be:*

- *poor value for money if the BCR is less than 1*
- *low value for money if the BCR is between 1 and 1.5*
- *medium value for money if the BCR is between 1.5 and 2*
- *high value for money if the BCR is over 2*

unless the non-monetised impacts are sufficiently significant relative to the costs to shift the value for money categorisation". Non-monetised impacts can include environmental impacts such as those that might affect people and property, cultural heritage, landscape and biodiversity. Such impacts can be positive or negative and can thus add to or detract from the economic justification for a project.

While the surface (Northern and Southern) route options have high economic BCRs that would notionally provide a strong case for transport investment, they would also have significant adverse environmental impacts as outlined in Chapter 4 and presented in the Appraisal Summary Tables (ASTs) at Appendix E. Such adverse environmental impacts would weigh against the economic benefits, would reduce the BCRs for the surface route options, and thus reduce the case for transport investment. For the Northern Route, if the Present Value Benefits (or rather disbenefits) of the adverse environmental impacts were valued at £90m or more, its BCR (averaged between low and high growth) would be reduced to a value of 2.0 or less. With the Southern Route, the adverse environmental impacts in terms of PVB (again disbenefits) would have to be valued at £182m or more for the average BCR to reduce to a value of 2.0 or less.

Conversely, the tunnel options, especially the bored tunnel option, would deliver significant environmental benefits that would add to the economic benefits (again these benefits are outlined in Chapter 4 and presented in the ASTs at Appendix E). With the Cut & Cover Tunnel, the environmental benefits (PVB) would have to be valued at £108m for the average BCR to be increased to a value of 2.0 or more. With the Published Scheme, the environmental benefits (PVB) would have to be valued at £241m for the average BCR to be increased to a value of 2.0 or more. Essentially, for the tunnel solutions to be judged high value for money, the benefits associated with restoring the landscape setting to Stonehenge would have to be valued at the amounts indicated to support the case for the investment of public funds.

Turning to the Partial Solution, while this appears to give a high BCR, as already stated, this should be treated with caution because the A303 would remain congested at peak times and the traffic model (developed for the analysis of the Published Scheme) is not able to reflect properly the associated economic disbenefits, which would serve to reduce the BCR. In looking to take into account the main environmental consequences, cultural heritage effects have been assessed as neutral, whilst benefits for the village of Winterbourne Stoke would be balanced against the impacts of a new road across open countryside to the north of the village.

6.6 Affordability

The affordability of each of the options is a function of their estimated cost related to Government spending plans. The costs of each option with the related construction timescales are summarised below in Table 6.2.

Table 6.2 Summary of costs and programme

	Construction Cost (2003 prices) £m	Construction costs (2006 prices) £m	Start of construction	Year of Opening	Scheme Budget £m
Published Scheme	289	344	2008	2012	539
Cut & Cover Tunnel	195	237	2009	2012	413
Northern Route	113	138	2010	2012	317
Southern Route	95	115	2010	2012	273
Partial Solution, Option 3	78	94	2010	2012	185

The costs for the Published Scheme and the Cut & Cover Tunnel are in excess of those indicated at the Public Inquiry. Whilst these costs would not be considered affordable for a conventional transport scheme with relatively low benefit to cost ratios, the tunnel solution was included by the Government in the national programme and has been promoted as an *"exceptional environmental scheme"*.

The Northern and Southern Routes have budget requirements closer to the original Published Scheme budget and their BCRs indicate a reasonable return for a transportation scheme. As such these options could be considered affordable, with the Southern Route being more affordable than the Northern, and therefore could be potential candidates for funding from DfT's regional transport budgets.

The Partial Solution has a significantly lower budget requirement and whilst this scheme would be affordable, it does not address the objectives for the WHS or for relief of traffic congestion and therefore may not be considered a worthwhile investment in its own right as a stand-alone scheme.

6.7 Deliverability

The deliverability of each of the options would depend on a combination of the impacts outlined primarily in Chapter 4. Ultimately a decision to progress any of the options would be based on a balance of the arguments for and against. The ease with which an option can be delivered depends on the level of support or opposition from various interested parties. This has been informed by the response to the consultation undertaken as part of this Review, as summarised in Chapter 3. The World Heritage Committee could also be expected to take a view on the acceptability of whichever option is chosen for the WHS and any concerns raised by the Committee could affect the deliverability of the chosen option.

The public consultation has shown that the Published Scheme enjoys the highest level of support with 31% of the local responses and 66% of non-local responses indicating it to be their preferred option. Responses from statutory and other consultees also indicate broad support for the Published Scheme. However there is also a degree of strong opposition, including from the National Trust, who oppose all the shortlisted options.

The Cut & Cover Tunnel has the third highest vote as the best option but also gathered a smaller though significant vote as the worst option. Specifically it is opposed by English Heritage because of the potential damage to archaeological resource that would be caused by the tunnel excavations within the World Heritage Site and because of disruption to the landform across Stonehenge Bottom. The heritage sector generally is opposed to the Cut & Cover Tunnel for these reasons. The Pagan and Druid communities are also opposed to this option, indicating that they would mount protests if it were chosen.

The Northern Route received very little support and a significant degree of opposition, particularly from local respondents. It is opposed by English Heritage, the Environment Agency and by English Nature, the Countryside Agency and the Rural Development Service (in a joint response), as well as by Wiltshire CC and Salisbury DC who both also oppose the Southern Route and the Partial Solution. There is also concern from the residents of Larkhill and Durrington and from the MOD who might need to relocate some of their facilities were this option pursued.

The Southern Route attracted the highest vote as the worst option, but with a discrepancy between local and non-local responses, with 35% of the former preferring it as the best option and 47% of the latter stating it to be the worst option. The RSPB mounted a campaign against the Southern Route, which passes through an RSPB nature reserve. This campaign accounted for almost half of the non-local questionnaires returned. When RSPB influenced replies are discounted, the levels of support and opposition are more balanced, but still with more respondents considering it to be the worst option. It is opposed by English Heritage, in particular, and by the heritage sector more generally because of the impact the Route would have on wider reaches of the WHS, notwithstanding the benefits it would bring through the removal of the existing A303 past Stonehenge.

The Partial Solution attracted more worst-option votes than best-option votes by a ratio of 3 to 2. Junction Options 1 and 3 were the most favoured by those who expressed a view. Again the heritage sector, including English Heritage, is strongly opposed to this Partial Solution because it would not secure the objectives of the *WHS Management Plan*. Representatives of the Pagan and Druid communities have also objected to this option, indicating that they would mount protests if it were chosen. It is also opposed by business and transport bodies such as the South West Regional Development Agency, the RAC and the AA because it would still leave a bottleneck on the A303 trunk road.

7 Conclusions

7.1 Published Scheme

The Published Scheme has passed through a Public Inquiry and could therefore be progressed more rapidly than other options and with a fair degree of certainty in cost and programme. It would require an overall budget of £539 million and has a benefit to cost ratio of 1.02 for low growth and 1.59 for high growth. It is widely supported by the public and statutory consultees, though opposed by the National Trust and a number of other bodies. It was judged by the Public Inquiry Inspector to be in substantial compliance with the *World Heritage Site Management Plan*, and would allow the relocation of the Visitor Centre to Countess East. The Published Scheme would assist the Government's aim of upgrading the A303/A358 route to dual carriageway from London to the South West, and improve road safety. Construction could possibly start in 2007, but would be more likely in 2008 with completion in 2012.

Staged delivery is possible but would be considerably more expensive, due to an interdependence of the earthworks in the different parts of the Scheme, and would be difficult to steer through the statutory process, depending on the degree of commitment to subsequent stages.

7.2 Cut & Cover Tunnel

The Cut & Cover Tunnel has many of the benefits of the Published Scheme but two main drawbacks which attract opposition: it would remove any as-yet undiscovered buried archaeology along its length and, due to its shallower vertical alignment, it would breach the ground surface in Stonehenge Bottom, leaving a 9-10m high grass covered embankment visible from Stonehenge. It would therefore not comply with the *World Heritage Site Management Plan* to the same degree as the Published Scheme. It would require a new Environmental Statement, and another Public Inquiry, so the earliest start date would be 2009 with a completion date of 2012. It would require an overall budget of £413 million and has a benefit to cost ratio of 1.27 for low growth and 1.97 for high growth. The Cut & Cover Tunnel attracted little support in the public consultation and would be strongly opposed by English Heritage and many others in the heritage sector, including the National Trust. Additionally the Druid and Pagan community anticipate extensive protestor action.

7.2 Northern Route

The Northern Route would comply with the parts of the *World Heritage Site Management Plan* which deal with removing roads and traffic from within view of Stonehenge, except that it would leave 250m of road visible close to the point of sunrise on the summer solstice. It would conflict with the objectives for maintaining the outer parts of the WHS or improving them where possible, and with the whole thrust of the Plan which envisages a tunnel. Its major disadvantages are the severance of Stonehenge from other important Monuments mentioned in the WHS inscription such as Durrington Walls and Woodhenge, and its adverse effect on residents of Larkhill in terms of noise and visual intrusion, its proximity to the Salisbury Plain SAC and effect on Stone Curlews.

The Northern Route would require an overall budget of £317 million and has a benefit to cost ratio of 1.97 for low growth and 3.46 for high growth. It lacks detailed environmental surveys, and a new set of Scheme Orders, followed by another Public Inquiry would be required, so the earliest start date would be 2010 with a completion date in 2012. Like the Published Scheme and Cut & Cover Tunnel, it would assist the Government's aim of upgrading the A303/A358 to dual carriageway from London to the South West, and would provide the grade-separation of Countess Roundabout necessary to accommodate safe access to the new Visitor Centre. However it may hinder lottery funding for the Visitor Centre which is predicated in part on the approval of the Published Scheme. The Northern Route attracted little support in the public consultation and a significant degree of opposition, especially from local respondents. It is

opposed by English Heritage, Defence Estates on behalf of MOD, the Environment Agency, RSPB and the National Trust.

The Northern Route differs only slightly from Objector's Alternative AR3 which was rejected by the Inspector at the Public Inquiry

7.3 Southern Route

The Southern Route would also comply with the parts of the *World Heritage Site Management Plan* which deal with removing roads and traffic from within view of Stonehenge - subject to detailed design it is believed that amendments to the current alignment could achieve this aim. But it would conflict with the objectives for maintaining the outer parts of the WHS or improving them where possible. Its major disadvantages are the imposition of a new road in remote attractive landscape in the southern part of the WHS, its potential effects on as-yet undiscovered buried archaeological remains, its adverse effects on the amenity for users of rights-of-way linking the Woodford valley to Stonehenge, and the loss of a nature reserve maintained by the RSPB for Stone Curlews and, thereby, its effect on the Salisbury Plain SAC.

The Southern Route would require an overall budget of £273 million and has a benefit to cost ratio of 2.76 for low growth and 4.68 for high growth. It lacks detailed environmental surveys, and a new set of Scheme Orders, followed by another Public Inquiry would be required, so the earliest start date would be 2010 with a completion date of 2012. Like the above options, it would assist the Government's aim of upgrading the A303/A358 route to dual carriageway from London to the South West, and would provide the grade-separation of Countess Roundabout necessary to accommodate safe access to the new Visitor Centre. However, like the Northern Route, it may hinder lottery funding for the Visitor Centre.

The route attracted some support in the public consultation, but these responses were swamped by opposition resulting from a campaign by the RSPB which contributed to it being the most opposed option. It is also opposed by English Heritage, RSPB and the National Trust.

7.4 Partial Solution

The Partial Solution would conflict with the *World Heritage Site Management Plan* by leaving the A303 in place past Stonehenge and increasing traffic on it. It would also conflict with the Government's aim of upgrading the A303/A358 route to dual carriageway from London to the South West. Wiltshire County Council object to closing the A344 junction with the A303 without dualling the A303, and the Partial Solution would still leave a legacy of safety and congestion problems on the A303. It would provide the grade-separation of Countess Roundabout necessary to accommodate safe access to the new Visitor Centre. However, like the Northern and Southern Routes, it may hinder lottery funding for the Visitor Centre.

The Partial Solution with junction Option 3 would require an overall budget of £185 million and has a calculated benefit to cost ratio of 2.18 for low growth and 3.21 for high growth, although this result should be treated with caution because it does not properly account for the effects of continuing traffic congestion (due to limitations of the traffic modelling). A new set of Scheme Orders and another Public Inquiry would be required, so the earliest start date would be 2010 with a completion date of 2012.

If the Partial Solution were promoted as a stand-alone option, a natural question would arise about how and when the remainder of the A303 might be improved through the WHS past Stonehenge. Without an answer to this question, the Partial Solution might be perceived to prejudice future options for completing the improvement of the A303.

Another major issue with the Partial Solution is its inefficient use of earthworks fill material. The Published Scheme would use material excavated from the tunnel for the embankment construction and ground contouring needed for the Winterbourne Stoke Bypass. Without the tunnel it would be necessary to import (for the Winterbourne Stoke Bypass) about 900,000 m³ of material. If and when the tunnel construction proceeded at a later date the same amount of surplus material would have to be disposed of. A borrow pit alongside the scheme would be

strongly opposed by landowners and, in this archaeologically rich landscape, would be difficult to site without permanent damage. Off-site it would be subject to agreement with landowners and require planning permission. Without powers of compulsory purchase this could be a lengthy process.

The Partial Solution was generally opposed in the public consultation, and is also opposed by English Heritage, Wiltshire County Council, Salisbury District Council, RSPB and the National Trust. Representatives of the Pagan and Druid communities have also objected to this option, indicating that they would mount protests if it were chosen. It is also opposed by business and transport bodies such as the South West Regional Development Agency and the AA.

An alternative approach with the Partial Solution would be to promote it as the first step in a staged construction of the Published Scheme, but this would be subject to the same difficulties mentioned in Section 7.1 above.

7.5 Other Alternatives

Other possible routes were suggested during the consultation process but were not found to have any greater overall merit when compared with the five consultation options.

Glossary of Acronyms

AADT	Annual Average Daily Traffic
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AR	Alternative Route
ARCADY	Assessment of Roundabout Capacity and Delay
AST	Appraisal Summary Table
BCR	Benefit Cost Ratio
CBA	Council for British Archaeology
CBI	Confederation of British Industry
CLA	Country Land and Business Association
CoBDO	Council of British Druid Orders
CPRE	Campaign to Protect Rural England
CRF	Congestion Reference Flow
Defra	Department for Environment Food and Rural Affairs
DETR	Department for Environment, Transport and the Regions
DCMS	Department for Culture, Media and Sport
DfT	Department for Transport
EA	Environment Agency
ECI	Early Contractor Involvement
ETC	Electronic Toll Collection
DMRB	Design Manual for Roads and Bridges
HA	Highways Agency
HAD	Honouring the Ancient Dead
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
ICOMOS	International Committee on Monuments and Sites
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
IRR	Internal Rate of Return
MOD	Ministry of Defence
NPV	Net Present Value
PIA	Personal Injury Accidents
PPG	Planning Policy Guidance
PPP	Public Private Partnership
PVB	Present Value Benefits
PVC	Present Value Cost
RFA	Regional Funding Allocation
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCL	Sprayed Concrete Lining

SNCI	Site of Nature Conservation Interest
SPA	Special Protection Area
SPZ	Source Protection Zone
SSD	Stopping Sight Distance
SSSI	Site of Special Scientific Interest
SWARMMS	London to South West and South Wales Multi-Modal Study
SWRDA	South West of England Regional Development Agency
TBM	Tunnel Boring Machine
TDN	The Druid Network
TERN	Trans European Route Network
UKNC	United Kingdom National Commission (for UNESCO)
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VAT	Value Added Tax
VMS	Variable Message Signing
WCC	Wiltshire County Council
WHS	World Heritage Site
World Heritage Convention	UNESCO Convention for the Protection of The World Cultural and Natural Heritage, 1972.

Figures

Appendices

Appendix A - Review Terms of Reference

Department for
Transport
News Release

*News Release 2005/0108:
31 October 2005*

WAY FORWARD ANNOUNCED FOR A303 STONEHENGE REVIEW

The formation of a cross-government steering group to take forward the review of the options to ease congestion on the A303 and improve the setting around Stonehenge was announced today by Transport Minister, Dr Stephen Ladyman.

The review will be taken forward by a steering group consisting of representatives from: the Department for Transport; the Department for Culture, Media and Sport; the Department for the Environment, Food and Rural Affairs; the Highways Agency; the Government Office for the South West; and, statutory advisers, English Heritage and Natural England. The Department for Transport announced the review in July 2005 following an increase in scheme costs of the proposed Stonehenge tunnel.

Stephen Ladyman, Minister of State for Transport, said:

"Everyone with an interest in this important issue will have the opportunity to contribute to the review process as a full public consultation will begin in January 2006.

"The cross-government steering group will thoroughly assess the options to ease congestion on the A303 taking account of the exceptional environmental factors relating to Stonehenge and its environs. The group will then combine their findings with the results of the public consultation before making recommendations to me early next summer.

"I hope this review will enable me to decide on an option in keeping with the special requirements of the location that is affordable, realistic and deliverable."

Notes to editors

1. Stephen Ladyman announced on 20 July 2005 that there will be a detailed review of the options to ease congestion on the A303 and improve the setting around Stonehenge.
2. The review is necessary because of a significant increase in the estimated costs of the proposed Stonehenge tunnel - from £284m at the time of the Public Inquiry to the latest estimated outturn cost of £470m - which represents a significant change to the basis on which the Government originally decided to progress this scheme.
3. The steering group will update the costs and benefits of the options considered at the Public Inquiry, and possible variants of these options, to provide the basis for identifying a shortlist of options for more detailed examination. These will be subject to a 13 week public consultation exercise starting in January 2006.
4. The Steering Group will produce a final report to Ministers on the detailed assessment of options and outcome of the consultation exercise by early summer 2006.
5. The Terms of Reference for the Review of the A303 Stonehenge improvement scheme are:

To review options for improving the A303 trunk road between Amesbury and Berwick Down taking into account the findings of the Inspector's report published in July 2005, the commitments set out in the Stonehenge World Heritage Site Management Plan, and proposals for a new visitor centre. The Review will:

- a) update the costs and benefits of the Published Scheme put to Public Inquiry;
- b) update the costs and benefits of the alternative options put forward at the Public Inquiry, and possible variants, on a like-for-like basis with the updated costs and benefits of the published scheme;
- c) identify a shortlist of alternative options judged worthy of further detailed consideration in pursuing the Government's objectives for the scheme;
- d) consult widely on the key findings from tasks (a) to (c) above;
- e) review consultation responses and complete a full assessment of the performance of the published scheme and the shortlisted options against the Government's objectives, looking in particular at each option's overall value for money, compatibility with the Stonehenge Management Plan and plans for a new visitor centre, environmental impacts, relief of congestion on the A303, affordability and deliverability;
- f) prepare a report to Ministers on the results of the consultation exercise and the performance of each shortlisted option in relation to the factors listed at (e) above.

The review will also consider whether there are any implications for the strategy of improving other sections of the A303/A358 corridor to the west of Stonehenge.

6. The working arrangements are attached.

Management arrangements and timetable for the Review of the A303 Stonehenge improvement scheme

The Review will be managed by a Steering Group consisting of representatives of Department for Transport, Department of Culture, Media and Sport, Department for Environment, Food and Rural Affairs, Highways Agency, Government Office for the South West, English Heritage and Natural England.

The Review will be carried out in two stages. During Stage 1 the Steering Group will take forward the work under items a - c in the Terms of Reference and prepare a summary report of its findings, including options recommended for more detailed consideration. This will be issued for consultation with key stakeholders and others who wish to have their views taken into account in the Review. In Stage 2 the Steering Group will carry out a more detailed assessment of the performance of shortlisted options and carefully consider the results of the public consultation exercise. It will then prepare a report to Ministers setting out the results of this analysis.

The aim is to complete the work in Stage 1 by the end of 2005, to consult on the options in early 2006 and to put a final report to Ministers on the results of the assessment of options and the public consultation exercise by early summer 2006.

Appendix B - Consultation Leaflet and Questionnaire

Appendix C - Summary of Results from Consultation

Table C1 Route preference from questionnaires and letters (Q1)

		Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution	Do-Nothing	Total
Local	Best	316	112	48	360	110	76	1023
	Worst	231	59	197	130	101	277	995
Non-local	Best	2364	493	39	276	103	297	3572
	Worst	210	225	296	1491	251	670	3143
Total	Best	2680	605	87	636	214	373	4595
	Worst	441	284	493	1622	351	946	4138

Table C2 Route preference from questionnaires and letters, excluding RSPB influence (Q1)

		Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution	Do-Nothing	Total
Local	Best	266	106	48	360	110	76	967
	Worst	231	59	197	82	101	277	947
Non-local	Best	1059	347	39	276	103	297	2122
	Worst	210	225	296	331	251	670	1983
Total	Best	1325	454	87	636	214	373	3089
	Worst	441	284	493	413	351	946	2930

Table C3 Best route choice of local respondents by area (Q1)

	Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution	Do-Nothing	Total
Shrewton, Orcheston & Tilshead	26	8	5	37	7	5	87
Larkhill, Durrington, Bulford & Netheravon	67	27	4	124	31	20	273
Amesbury	53	31	9	90	27	18	227
Winterbourne Stoke & Berwick St James	8	6	8	17	6	2	47
Stapleford, Wylde Valley & Chitterne	8	6	6	15	4	4	44
Wilsford, Woodfords, Lake & Durnford	33	11	4	4	5	3	60
Salisbury & Wilton	79	17	9	50	21	18	193
Chilmark, Dinton & Barford St Martin	6	2	1	5	2	2	17
Eastern Villages	35	5	2	20	8	5	75
Total	316	112	48	360	110	76	1023

Table C4 Worst route choice of local respondents by area (Q1)

	Published Scheme	Cut & Cover Tunnel	Northern Route	Southern Route	Partial Solution	Do-Nothing	Total
Shrewton, Orcheston & Tilshead	17	2	23	4	11	29	85
Larkhill, Durrington, Bulford & Netheravon	51	18	110	11	25	53	267
Amesbury	68	14	29	28	20	64	222
Winterbourne Stoke & Berwick St James	5	3	5	2	11	19	45
Stapleford, Wylde Valley & Chitterne	16	4	4	3	4	11	43
Wilsford, Woodfords, Lake & Durnford	8	4	5	32	4	11	63
Salisbury & Wilton	46	11	17	34	14	59	181
Chilmark, Dinton & Barford St Martin	5	0	2	2	4	4	16
Eastern Villages	16	3	4	16	7	26	73
Total	231	59	197	130	101	277	995

Table C5 Reasons for Route Preference from questionnaires and letters (Q2)

Scheme Preference	Comment	Local	Non-local	Total
Published Scheme best	Least impact on biodiversity and chalk downland habitat (RSPB encouraged response)	28	841	869
Southern Route worst	Adverse impact on Stone Curlew habitat at Normanton Down (RSPB encouraged response)	24	684	708
Published Scheme best	Has minimal effect on monuments / cultural heritage / archaeology	28	220	248
Southern Route best	Good value for money / cheapest	146	99	245
Published Scheme best	It improves / protects Stonehenge setting / views / removes clutter	36	182	218
Published Scheme best	To protect / restore / enhance the World Heritage Site	20	170	190
Published Scheme best	Least impact on wildlife / biodiversity / ecology / reconnects habitat	15	170	185
Published Scheme best	Has least detrimental effect on views / landscape / visual impact	23	159	182
Southern Route best	Has least impact on residents of Larkhill and Durrington	115	55	170
Published Scheme best	Best long term solution	22	122	144
Published Scheme best	To minimise environmental impacts	29	92	121
Northern Route worst	Too much impact on Larkhill / Durrington	78	30	108
Cut & Cover best	Impact on ecology / biodiversity / wildlife minimised - habitat reunited	2	104	106
Published Scheme best	Protecting Stonehenge is more important than cost / for national pride	18	88	106
Published Scheme best	It solves the existing traffic problems	30	67	97
Published Scheme best	It achieves most of the aims of the Stonehenge Project	20	72	92
Published Scheme worst	Scheme / tunnel costs too much	62	23	85
Published Scheme best	Has faced Public Inquiry / Inspector made right decision	9	69	78
Cut & Cover best	To minimise environmental impact	18	58	76

Scheme Preference	Comment	Local	Non-local	Total
Published Scheme best	The best all round solution	4	68	72
Southern Route best	Gets traffic away from Stonehenge / returns it to peace	25	45	70
Do-Nothing worst	This is not an option / something needs to be done	14	56	70
Northern Route worst	Negative impacts on the WHS / cultural heritage / archaeology	19	45	64
Published Scheme best	Least impact on local residents	27	34	61
Cut & Cover best	To protect the World Heritage Site /monuments / archaeology	3	57	60
Published Scheme best	It will reduce noise pollution	7	53	60
Cut & Cover best	Cut & Cover is cheapest tunnel solution	15	38	53
None of the solutions	None of the solutions are adequate	29	22	51
Southern Route best	Minimises disturbance to Stonehenge/other monuments/visitors	14	34	48
Do-Nothing best	No further damage to undiscovered archaeology / heritage	3	45	48
Cut & Cover worst	Damage to archaeology / new finds would delay work	3	45	48
Do-Nothing worst	Does nothing to relieve the existing traffic problems	25	21	46
Southern Route best	Has least negative impacts / less damaging to area	21	22	43
Southern Route best	Short route	26	17	43
Southern Route best	Achieves most of the aims of the Stonehenge project	20	21	41
Partial Solution best	Solves problems at Winterbourne Stoke/Countess /A344	20	21	41
Partial Solution worst	Will do nothing significant to reduce congestion	23	18	41
Southern Route worst	Cuts through scenic downland / reserve	18	23	41
Southern Route best	Tunnel Schemes are too expensive	25	15	40
Cut & Cover best	Cost effective solution / best value for money	22	18	40
Partial Solution best	Cheapest / value for money	26	11	37
Southern Route worst	Will affect undiscovered archaeology / impacts on archaeology	5	32	37
Do-Nothing best	Keeps views of Stonehenge from A303 / attracts tourists	9	28	37
Cut & Cover best	Best visual preservation of Stonehenge and its landscape	1	36	37
Partial Solution worst	It is expensive with little gain	12	24	36
Southern Route best	Has least impact on environment	25	11	36
Southern Route best	Best BCR	16	19	35
Do-Nothing worst	Perpetuates "national disgrace" of Stonehenge	6	29	35
Do-Nothing best	Less disruption to wildlife / biodiversity / ecology	2	33	35
Southern Route worst	Negative impacts on ecology/biodiversity/wildlife	5	29	34
Do-Nothing best	If we are not prepared to do the job properly then lets not do it at all	5	28	33
Published Scheme best	It will return peace/tranquillity to Stonehenge	9	23	32
Published Scheme best	Will not require the construction of a new road along new land	11	21	32
Northern Route worst	It has large impacts on environment	17	15	32
Southern Route best	Shortest construction time	22	10	32
Southern Route worst	Large impacts on environment	12	20	32
Southern Route best	Removes current congestion on A303 / solves traffic problems	18	13	31
Partial Solution best	Causes the least damage to monuments / archaeology	9	22	31
Partial Solution best	Keeps views of Stones	19	11	30
Cut & Cover worst	Would leave visible legacy (mound)	5	25	30

Scheme Preference	Comment	Local	Non-local	Total
Tunnel Options worst	Have safety concerns over tunnel	21	8	29
Northern Route worst	Negative impacts on ecology / wildlife	7	22	29
Southern Route best	Negative impacts balance against positive ones - best compromise	14	13	27
Northern Route best	Takes road furthest from Stonehenge/core of WHS	9	18	27
Published Scheme best	Shortest and quickest route / easy and efficient to build	10	17	27
Cut & Cover best	Will permit unspoilt and uninterrupted views of Stonehenge	4	21	25
Cut & Cover best	Has minimal impact on local residents	5	20	25
Southern Route best	Improves landscape around Stonehenge	6	18	24
Published Scheme best	Will increase tourism / visitors' experience / bring economic benefit	6	17	23
Published Scheme best	It is the result of years of professional investigations	3	19	22
Partial Solution worst	Will cost more in the future when a proper solution needs to be found	3	18	21
Cut & Cover best	Ensures Stone Curlew and other threatened bird species are preserved	0	21	21
Partial Solution worst	Does not meet the scheme objectives	7	14	21
Southern Route best	Minimum impact on the landscape	6	13	19
Southern Route best	Has least impact on ecology/flora/fauna	10	9	19
Published Scheme best	Road safety	4	15	19
Do-Nothing best	Until a better solution can be found / when everyone is in agreement	2	17	19
Do-Nothing best	See no problem with current road / we don't need another road	8	11	19
Do-Nothing best	Cannot keep trying to meet traffic demands by road improvement	0	18	18
Partial Solution worst	Worse than doing nothing / Partial Solution is no solution	1	17	18
Do-Nothing worst	Does nothing to improve Stonehenge / WHS	7	10	17
Published Scheme best	It allows open access around Stonehenge	5	12	17
Partial Solution best	Options are left open for future better ideas	2	15	17
Northern Route worst	Highest negative impact on the landscape	6	10	16
Cut & Cover best	Shortest and simplest solution / most direct route / no new roads	8	8	16
Cut & Cover best	Improves road safety	1	14	15
Southern Route best	Stonehenge will still be connected to Woodhenge and Durrington Walls / open access to majority of site	3	11	14
Do-Nothing worst	Due to road safety and local access problems	10	4	14
Do-Nothing best	Benefits few people / money could be better spent	8	6	14
Southern Route best	Simplest solution	12	2	14
Published Scheme best	To minimise delay to the scheme and to save money on further investigations / exhibitions / inquiries	6	7	13
Partial Solution best	The most practical solution	11	1	12
Southern Route best	Acceptable impact on heritage / WHS / environment / short term impact	3	9	12
Published Scheme best	An exceptional scheme is needed for an exceptional site	4	8	12
Cut & Cover best	Best long term solution / bypasses often lead to more problems	0	12	12
Northern Route worst	Long route	7	4	11
Northern Route best	Cheap / best value for money	5	6	11

Scheme Preference	Comment	Local	Non-local	Total
Published Scheme worst	Negative impacts on history / WHS / irreversible scar on landscape	1	10	11
Southern Route worst	Object as affected resident	7	4	11
Published Scheme worst	Too environmentally damaging	2	8	10
Published Scheme best	The best of a bad bunch / best presented in leaflet / for reasons stated in published plan	0	10	10
Southern Route best	Gives drivers a glimpse of Stonehenge / views within WHS	4	6	10
Southern Route best	Best of the solutions given in the leaflet / best of a bad bunch	4	5	9
Do-Nothing best	Money could be better spent on health / improving social conditions	4	5	9
Do-Nothing worst	Will require something to be done in the future	3	5	8
Partial Solution best	Least impact on local residents	6	2	8
Northern Route worst	Expensive route	6	2	8
Cut & Cover worst	Changes the landscape / does not preserve landscape	0	8	8
Cut & Cover worst	Environmentally damaging	3	5	8
Do-Nothing best	All schemes are too expensive	2	6	8
Published Scheme best	Least impact on Stone Curlew	0	8	8
Cut & Cover best	Once grassed over the path of the tunnel would not be noticeable	4	4	8
Northern Route worst	Offers little benefit / prevents long term solution	4	3	7
Southern Route worst	Due to potential impacts on Stone Curlew	0	7	7
Southern Route best	Acceptable impact on tranquil / scenic land / RSPB reserve / monuments	1	6	7
Southern Route best	Less disruption to existing A303 during construction	5	2	7
Published Scheme worst	It is complete over-kill / unnecessary / unsustainable	5	2	7
Southern Route worst	Negative impacts on WHS	0	7	7
Published Scheme best	Avoids despoilation of chalk downland and archaeological sites of Normanton Barrows	1	6	7
Do-Nothing worst	Fails to address any of the issues	1	5	6
Published Scheme worst	Will not allow a proper archaeological investigation / damage to archaeology	0	6	6
Published Scheme worst	Boring a tunnel close to an important site seems extreme	3	3	6
Do-Nothing best	Congestion is part of modern life people should accept it - more important things than cars	3	3	6
Partial Solution best	Best chance of getting anything done / compromise	2	4	6
Published Scheme worst	Will cause traffic chaos if an accident happens	5	1	6
Do-Nothing worst	Doesn't close the dangerous A344 junction	4	2	6
Cut & Cover worst	Too close to monument / still has noise impacts at Stonehenge	3	3	6
Northern Route best	Furthest from Normanton Down / interferes least with barrows	1	4	5
Published Scheme worst	Too many unknowns - costs could quickly escalate	2	3	5
Tunnel Options best	Tunnel options would reduce visual impact	2	3	5
Northern Route worst	The longer route will cause more pollution	4	1	5
Northern Route best	Least environmentally damaging	4	1	5
Cut & Cover best	Great benefit to archaeology as will permit further excavations along line of route	0	5	5
Southern Route best	The only acceptable alternative within affordable limits / most realistic option	3	2	5

Scheme Preference	Comment	Local	Non-local	Total
Cut & Cover worst	Will permanently scar land / major disruption during construction	0	5	5
Cut & Cover worst	Due to damage caused by scale of earthworks during construction	1	4	5
Partial Solution worst	Has unacceptable impacts on Shrewton and other villages by rat running	4	1	5
Southern Route worst	Does not provide long term solution / Do-Nothing better than half measure	0	5	5
Do-Nothing best	Money could be spent on bypassing other towns and villages in Wiltshire	4	1	5
Northern Route worst	Too close to the Fargo ammunition compound	5	0	5
Northern Route best	Reconnects the most Scheduled Monuments	1	3	4
Tunnel Options best	Stop passers-by getting distracted by Stones	2	2	4
Partial Solution worst	A bad idea to disrupt the site just for a partial solution / half-measure	1	3	4
Published Scheme best	Keeps most of the stakeholders happy	2	2	4
Cut & Cover best	The A303 needs to be dualled for its complete length	2	2	4
Cut & Cover best	A visible mound is a small price to reduce current impact of road	2	2	4
Southern Route best	Any northern route would spoil the site	2	2	4
Northern Route worst	Due to potential impacts on Stone Curlew	0	3	3
Southern Route best	Much of existing A303 would be returned to pasture	0	3	3
Do-Nothing best	To avoid increases in greenhouse gases / pollution	0	3	3
Published Scheme worst	Will cause problems with the water increasing the risk of flooding	0	3	3
Northern Route best	Would enable some people to see the monument as they pass	2	1	3
Partial Solution worst	A politician's cop-out solution / a being-seen-to-Do-Something solution	0	3	3
Tunnel Options best	Not to spoil the site with the presence of cars	1	2	3
Northern Route best	A good compromise between cost, environment and project objectives	3	0	3
Do-Nothing best	Will continue to discourage HGVs from using the road	2	1	3
Published Scheme worst	Removes view of Stones - will reduce tourism	2	1	3
Cut & Cover best	Is best for visitors, travellers and tax-payer	0	3	3
Published Scheme worst	The only reason for the tunnel is to make people pay to see Stonehenge	2	1	3
Cut & Cover worst	Too expensive / waste of money / achieves almost nothing	1	2	3
Southern Route worst	It will have an adverse effect on west Amesbury	2	1	3
Northern Route worst	Does not meet the project objectives	2	1	3
Northern Route worst	Too disruptive of the sacred landscape / spiritual place	0	2	2
Northern Route best	Benefits people of Larkhill as well as taking traffic away from Stonehenge	0	2	2
Northern Route best	Will achieve most of the objectives with only some inconvenience to local residents	1	1	2
Northern Route best	Best traffic flow	1	1	2
Northern Route best	Tunnel is too expensive	1	1	2
Northern Route best	Avoids Winterbourne Stoke the most	2	0	2
Northern Route best	The best of a bad bunch	2	0	2
Do-Nothing worst	By not proceeding looks as if we do not have the courage to make decision to protect heritage	0	2	2

Scheme Preference	Comment	Local	Non-local	Total
Partial Solution worst	Do not want closure of A344	1	1	2
Published Scheme best	Not destroying the work already done to restore environmental and archaeological quality of area / work achieved by conservation groups.	0	2	2
Southern Route worst	Will have an adverse effect on linear earthworks and the Lake group	0	2	2
Southern Route worst	Undoing hard work put into Wiltshire Downs by farmers / RSPB under Government's own countryside/environmental stewardship scheme	0	2	2
Published Scheme best	Offers the least disturbance of and the greatest respect for the sacred landscape.	1	1	2
Southern Route worst	Has an adverse effect on rights-of-way	1	1	2
Southern Route worst	Stonehenge needs to be protected from pollution caused by roads	1	1	2
Do-Nothing best	Will cause too much disruption to locals during construction	0	1	1
Northern Route best	Best solution for Shrewton connections	1	0	1
Partial Solution best	Offers some reduction in noise at the WHS	1	0	1
Tunnel Options worst	Not sustainable due to power needs for lighting, fans and pumps	1	0	1
Do-Nothing best	Threat of further damage by road / tunnel construction outweighs present lack of ambience / traffic noise / congestion	0	1	1
Published Scheme worst	Will cause untold damage to the ecology of the site	1	0	1
Do-Nothing best	Sacred Landscape - Respect it and do not cut it up any more - not just a circle of stones	0	1	1
Partial Solution worst	Too much destruction of what is left of our countryside	0	1	1
Do-Nothing worst	Worst BCR	0	1	1
Northern Route best	Impacts least on core of ceremonial landscape	1	0	1
Do-Nothing best	Miss-management of whole project	1	0	1
Do-Nothing best	Not in my back yard	1	0	1
Do-Nothing best	Keeps the economic viability of businesses in Winterbourne Stoke	1	0	1
Do-Nothing worst	WHS status may be revoked	1	0	1
Partial Solution best	Best of a bad bunch	0	1	1
Partial Solution worst	Will only provide a solution for Winterbourne Stoke	1	0	1
Published Scheme best	Scars left from development will to some extent heal	0	1	1
Southern Route best	To minimise vibration at the monument	0	1	1
Southern Route best	Best to avoid construction works around WHS and remove all roads nearby	0	1	1

Table C6 Factors considered important bearing in mind the aims of the A303 Stonehenge Improvement (Q3)

		Visual impact on Stonehenge	Overall visual impact in the WHS	Impact on Ecology in the WHS	Noise Impact at Stonehenge	Impact on undiscovered Archaeology	Impact on local residents	Improving road safety	Reducing congestion on the A303	Improving journey time	Reducing costs to the taxpayer	Other
Very Important	Local	411	333	374	231	285	719	760	669	259	498	102
	Non-local	2793	2663	2827	1758	1901	1297	1300	886	330	327	165
	Total	3204	2996	3201	1989	2186	2016	2060	1555	589	825	267
Quite Important	Local	338	398	446	398	458	273	234	270	419	324	9
	Non-local	602	709	617	1464	1379	1893	1758	1639	1121	327	18
	Total	940	1107	1063	1862	1837	2166	1992	1909	1540	1375	27
Unimportant	Local	258	273	179	381	259	43	30	86	322	192	7
	Non-local	99	114	83	248	196	252	366	906	1963	1946	8
	Total	357	387	262	629	455	295	396	992	2285	2138	15

Table C7 Other Important Issues (Q3)

Question 3 – Other important issues	Local	Non-local	Total
Protecting environment / biodiversity / ecology / wildlife habitat / reserves	10	131	141
National prestige / pride in preserving / respecting / enhancing our heritage and environment	8	46	54
Impact on Stone Curlew population / birdlife / RSPB reserve	2	33	35
Minimising disruption / noise during construction / speed of construction	12	11	23
Re-uniting the cultural landscape / protecting landscape / landscape before costs	2	20	22
Preserving WHS status / significance / integrity	10	11	21
Discourage use of cars, encourage use of public transport / high charges for road use of private cars	5	14	19
The sight of Stonehenge from the A303	9	8	17
Not disturbing more land than you have to / unspoilt countryside	3	10	13
Best heritage/conservation/archaeological management practice being carried out as a precedent for other sites in Britain	1	11	12
Commitment of the UK Government	1	11	12
Preserve sacredness of site / Stones	1	11	12
Cost effective solution / time and money	4	5	9
Getting it right	3	5	8
A long-term solution / vision for future	2	6	8
Free access to the site / Stonehenge - disabled access etc	3	5	8
Improvement of facilities to enrich visitors experience / tourism / learning	2	5	7
Reducing impact on Stonehenge ceremonial landscape	2	5	7
Reducing impact on feeder routes around Salisbury and the encouragement of business in the area	4	2	6
Visual impact on Stonehenge	3	3	6
The preservation and enhancement of the site / monument / archaeology and its settings	0	6	6
Winterbourne Stoke Bypass / road safety in Winterbourne Stoke	5	1	6
Reducing pollution (air and noise) in Winterbourne Stoke / local residents	4	2	6

Question 3 – Other important issues	Local	Non-local	Total
Legacy for future generations / getting it right for future generations	0	5	5
Making a decision and doing something	0	5	5
Reducing congestion	2	3	5
Impact on military training areas	3	1	4
Safety - A303 / A344 junction	3	1	4
Impact on known archaeology	1	3	4
Realism	1	2	3
Reducing traffic growth and CO ₂ emissions	0	3	3
Undertaking in-depth archaeological investigation during construction	0	3	3
Safety of local residents	1	2	3
Making Wiltshire more accessible to bring jobs and commerce to the area / local economy	2	1	3
Following the recommendation of the Public Inquiry	0	3	3
Provisions for walkers, cyclists and horse riders / pedestrian safety	1	1	2
Less money spent on wars for important things	1	1	2
Reducing costs to tax payer	0	2	2
Overall time of journey / short journey / energy costs	0	2	2
More time and money put into producing a longer bored tunnel	0	2	2
Climate change	1	1	2
Reducing rat-runs	1	1	2
Not increasing road capacity - traffic and speed management	0	2	2
Public support	0	1	1
Impact of bypasses on surrounding area	0	1	1
Not undermining work of local landowners for improvements to ecology	0	1	1
Making a positive decision	1	0	1
Crossing points for wildlife and people	0	1	1
General environmental impact on transport	0	1	1
Impact on unique part of England	0	1	1
Not introducing new hazards - complicated junctions / tunnels	1	0	1
Removing casual viewing from A344	1	0	1
Removal of fence and relocation of Visitor Centre	0	1	1
Not wasting money pursuing unwanted high cost tunnel schemes - delays	1	0	1
Maintaining distance from ammunition dump on Shrewton-Larkhill road	0	1	1
Save costs from more unnecessary road projects	0	1	1
Destruction of geology	0	1	1
Voluntary reduction of human population growth - more people = more properties etc	0	1	1
Demountability of road	0	1	1
People to use and enjoy site for range of purposes from spiritual worship to education and recreation	0	1	1
Maintaining historic road context	0	1	1
Doing as little as possible until worthy solution found	0	1	1
Ability to have a short stop-off visit to Stonehenge	0	1	1
Damage caused by vibration from HGVs / military vehicles	0	1	1
Maintaining the balance between peoples' needs and English Heritage's aspirations	1	0	1

Table C8 Non-tunnel route preference (Q4)

	Northern Route	Southern Route	Partial Solution	Do-Nothing
Local	150	512	226	148
Non-local	254	633	260	921
Total	404	1145	486	1069

Table C9 Partial Solutions junction options preference (Q5)

	Option 1	Option 2	Option 3	Option 4
Local	82	34	84	46
Non-local	97	50	59	32
Total	179	84	143	78

Table C10 Comments (Q6)

Question 6 - Comment	Local	Non-local	Total
The Published Scheme represents an "exceptional environmental scheme" (RSPB encouraged response)	17	542	559
Neither Northern nor Southern Routes reduce huge impact of A303 on the WHS, the primary objective of the whole project (RSPB encouraged response)	11	348	359
Make a decision / get on with it!	103	103	206
Only the Published Scheme is acceptable - other options will cause damage to WHS/heritage/environment/biodiversity/habitat	15	153	168
Supports simple on-line dualling	118	26	144
Heritage / archaeology should take precedence over cost / traffic	8	117	125
Too much is being/has been spent in preparation/consultation etc. without action	49	71	120
Environment should prevail over all other factors including cost	4	112	116
We should get on and build the Published Scheme despite the cost to deliver long term benefits to Stonehenge/the WHS	20	90	111
Costs are insignificant compared with other Government / infrastructure spending	7	101	108
A303 / A344 junction is dangerous and needs to be closed ASAP	48	33	81
Want to have of views of Stonehenge from the A303 and for tourists views / pride	43	34	77
Government should bite the bullet and undertake the best scheme / get on with the Published Scheme, whatever the cost	7	61	68
Supports Heritage Action web-site campaign (http://www.heritageaction.org/?page=heritagealerts_stonehenge)	0	67	67
Benefits of the Published Scheme outweigh costs involved - increase in tourism will offset costs	9	57	66
The longer this is left without any action or proper solution the greater the cost will be in the future	15	48	63
Partial Solution is a waste of money, it is not a solution at all / achieves nothing	23	38	61
Road improvements do not solve congestion / give long term solution - they just create more traffic	3	53	56
Supports a longer bored tunnel	7	49	56
Winterbourne Stoke Bypass is essential / urgent	45	7	52
Do-Nothing is not acceptable / not an option / will just have to do something in the future at higher cost	18	29	47

Question 6 - Comment	Local	Non-local	Total
We should take the one chance to construct a prestigious scheme / secure future of Stonehenge and the environment for the pride of the country / to set standards to others	9	37	46
Supports the West/Mills on-line proposal	44	0	44
Supports simple on-line dualling in cutting	30	12	42
A tunnel is the only sustainable option for the future / achieves the aims of the project / long term solution	4	37	41
If Published Scheme is too expensive, then Cut & Cover is the only other option	11	29	40
If Published Scheme and/or Cut & Cover Tunnel is cancelled then do nothing	5	33	38
Northern and Southern Routes would cause too much damage / shift problem / previously rejected	7	30	37
Due to importance of project, no expense should be spared / can afford it / should spend more to get it right	2	34	36
Government lacks courage / commitment to get on with the task / is not competent / should be committed to the WHS & Environment	1	34	35
Government / we should look at other ways of funding this scheme / lottery / public donation / corporate sponsorship / EU / UNESCO / DCMS	4	31	35
It is disgraceful that after so many years of studies nothing has happened	19	15	35
Archaeological finds are important but should not be put ahead of peoples' needs and safety	24	9	33
Just do something / existing situation is a disgrace/embarrassment / Stonehenge damaged/diminished by roads / sets poor example	12	20	32
The Public Inquiry had already decided on the solution / why consider other options?	4	27	31
Supports AR4 (Parker Route)	21	7	28
It is important to dual this whole section as soon as possible	17	10	27
Safety of roads can be improved by inexpensive traffic calming measures / tolling roads / diversions / public transport should be improved / encourage people to use cars less / car shares	3	22	25
The safety of road users is important - more important than cost / current situation is a black spot / action must be taken	17	8	25
If too expensive to take action now wait until finances / technology / Government is able to do so	4	20	24
Project has cost far too much to the Tax Payer / money proposed is too much / tax payers should not pay for any scheme	21	3	24
Partial Solution is a short-term solution / serve only to put off the decision / at least if do nothing it will remain a priority	2	21	23
Stonehenge Alliance standard letter - close the A344 and investigate low-cost, low-impact, quick solutions to reducing congestion near to Stonehenge	3	20	23
Supports tolled tunnel	2	19	21
Do not want another Twyford Down / M3 downland / Newbury Bypass / Creation of dual carriageway through WHS is unacceptable	2	19	21
As the WHS is so important, we should be considering routes wholly outside it	1	19	20
This is a very important site - look in to better ways of solving the problem / non road building	4	16	20
Improvements to Countess Roundabout are essential	17	2	19
Important to secure the tranquillity of Stonehenge central site and minimise disruption	3	15	18
Money would be better spent elsewhere (e.g. NHS, Schools, other roads) / Cost not justified when Government has insufficient funds for other priorities	8	9	17

Question 6 - Comment	Local	Non-local	Total
Believe HA and EH have not listened to the views of the local people / locals should be put first / have final say	14	3	17
Cut & Cover Tunnel would cause too much damage to barrows / site should be restored to as was	1	15	16
Cut & Cover Tunnel would leave a visible mound which is too intrusive / changes landscape / not first choice because of this	6	10	16
No tunnel option is acceptable / too expensive / irreversible / is not practicable / short tunnel is worse than road diversion	8	8	16
It is wrong that elite / heritage organisations are ruling this local issue	14	0	14
There is only one chance to get this right / has to be right first time i.e. tunnel	2	11	13
Consult with professional archaeologists / perform digs before hand / "rescue" archaeology	3	9	12
Southern Route is the most favourable if it is decided that the Published Scheme is too much money	4	8	12
Proposes building a bank / planting trees to obscure Stonehenge from road	10	2	12
Opposes National Trust Larkhill Corridor	12	0	12
Any tunnel option will cause damage to archaeology / too much upheaval / too much disruption to area / WHS	0	11	11
Transient solution - will / could be irrelevant - a reduction in people visiting monument would reduce road traffic	1	10	11
Thought should be given to reduce the burden of HGV traffic / traffic going past Stonehenge	1	9	10
People should be prepared to compromise on the solution to get the project moving	4	6	10
Object as an affected resident / bad for locals (Northern Route)	7	3	10
What ever happens free flow of traffic is the most important thing / road improvements to whole area are important	7	3	10
It will be a national disgrace if it is decided that we can't afford the tunnel / shows no commitment to what is best for the UK / sets bad example	0	9	9
I am willing to pay for the Published Scheme - only the best will do	0	9	9
Northern Route shifts towards Salisbury Plain, Europe's largest area of chalk downland (special area of conservation and special protection area)	0	9	9
Northern Route would not achieve aims of project / to remove roads and traffic and resultant impacts from WHS / to unify WHS	0	9	9
Tunnels will take too long to implement / Cut & Cover construction works on surface - blot landscape for years / disrupt traffic for too long	2	7	9
Although the Southern Route has environmental impacts, the benefit to Stonehenge / cost saving is more important	3	6	9
We pay road taxes for the purpose of building new roads the Government should get on and build it / should use money from road fund tax / tax air fuel	3	6	9
Northern Route is a bad idea as it will divide Durrington Walls and Woodhenge / too near to Woodhenge	5	4	9
Enforce a lower speed limit by Stonehenge and give people a good view (safely) / Keep views of Stonehenge from road	7	2	9
The tunnel portals would be an intrusion on the landscape / permanently / Tunnel impact on landscape	1	7	8
Realise the road must be upgraded because of traffic but sympathetically to the landscape/ environment / biodiversity	2	6	8
Proposes / supports on-line route with a wall/bank / screen between the road and Stonehenge	5	3	8
No justification in spending £470 million just tidy the place up a bit / too expensive / costs will rise even more / Published Scheme is not feasible	5	3	8

Question 6 - Comment	Local	Non-local	Total
Public transport generally from Salisbury to Amesbury also needs improving / rail link re opened	1	6	7
Southern Route would damage undisturbed archaeology / landscape / heritage / too close to barrows and earthworks / cuts off barrow groups	1	6	7
The schemes are unnecessary and too expensive / our cash spent for English Heritages benefit / that amount of money could enhance many local areas	1	6	7
Stonehenge Project is just aimed to make people to pay to visit the monument	2	5	7
Maintenance costs of tunnels will be prohibitive	5	2	7
Any scheme must improve on the situation of the A303 crossing through WHS	5	2	7
As higher costs are due to tunnel to protect heritage, English Heritage should pay larger proportion	7	0	7
Supports a much more southern route / route south of Winterbourne Stoke through Woodford valley and south of Amesbury	0	6	6
Proposes adjustment to Southern Route to miss archaeology and use topography	0	6	6
Southern Route would not achieve aims of project to remove roads and traffic and resultant impacts from WHS	0	6	6
Concerned to protect ecology / biodiversity	1	5	6
The integrity of Stonehenge's religious and historical importance must be kept	1	5	6
Southern Route is most damaging to high quality landscape / ecology / wildlife habitat / disturbs / severs WHS	1	5	6
Partial Solution will cause more expense in the future	2	4	6
If the tunnel is not an option then the Northern Route is next / opens up the whole site giving visitors a better experience	2	4	6
The mound left by the Cut & Cover tunnel would be acceptable	2	4	6
Dualling this section of road only pushes the problem further down the A303, a longer section of the A303 needs to be dualled	3	3	6
A tunnel is a ludicrous idea / safety concerns	5	1	6
The Government appears indifferent / short sighted to this important heritage site	0	5	5
Although residents of Larkhill would be affected by the Northern Route it would involve the least damage to the WHS / Normanton barrows. Benefits to tourism outweigh impact on Larkhill	0	5	5
The BCR should include benefits to tourism, ecology and heritage / does BCR include benefit to economy of SW	1	4	5
Why is Winterbourne Stoke Bypass part of every option / two programmes should be considered separately	2	3	5
Don't see that there is too much problem with the current situation at Countess / this area of A303 general	2	3	5
The present A303 and /or A344 are both ancient roads and are meant to be part of scenery	2	3	5
Northern Route seems to be a wholly stupid consideration / worrying	2	3	5
Do-Nothing - do not ruin countryside - leave our lives and homes alone / all it will do is generate hatred for those in power	2	3	5
Costs presented are probably unrealistic / cost of other schemes will rise too / only Published Scheme adjusted cost shown	3	2	5
The Scheme should benefit locals as well as others	3	2	5
Stone Curlew / animals will move north to populate the closed area of the present A303 / wildlife and archaeology can be relocated / they are protected in other areas nearby (Southern Route)	3	2	5

Question 6 - Comment	Local	Non-local	Total
Consideration must be given to diversions / redirections during construction phase to minimise disruption	4	1	5
Stonehenge is still being studied - there is still much to learn	0	4	4
Supports toll road / toll existing road to pay for scheme	0	4	4
It is a shame to lose views of the Stones but it is a price worth paying to preserve / enhance the site	0	4	4
Southern Route has a better balance of benefits that out weigh negative impacts compared to other schemes / achieves most of objectives / not ideal but best	0	4	4
This is a WHS improvement not a just a road scheme the Government should not lose focus / issue has become over complicated - address key issues , secondary issues addressed as a bonus	0	4	4
Supports 30 March press statement "Collective Response from Conservation Organisations"	0	4	4
Proposes Southern Route with southern Winterbourne Stoke Bypass	0	4	4
Proposes westbound traffic follow existing A303, eastbound on an (upgraded/not) local road to the north of Stonehenge	1	3	4
By hiding the route tourism may increase, bringing in more money justifying the original expense	1	3	4
Proposes/supports on-line dualling with flyovers at both roundabouts and museum at 'pinch-point' (Robertson AR9)	2	2	4
Could the Published Scheme attract ECC / UNESCO funding?	2	2	4
Contractors should stick to a price quoted, Government should enforce this / look for other quotes / give thought to re-tendering	2	2	4
Project should be used to encourage people to walk and cycle / Provisions must be made for cyclists	2	2	4
Disruption to traffic through Shrewton and other villages and to emergency services would be unacceptable / would divert traffic onto existing routes (Partial Solution)	3	1	4
Hoped to remove noise of traffic but there is noise of aircraft/guns, people usually listening to hand held info sets	3	1	4
Don't understand Partial Solution	0	3	3
The Southern Route must be properly engineered to reduce visual and noise intrusion to the site / topography	0	3	3
The scheme should try and benefit transport strategy locally as well as nationally	0	3	3
Move Stonehenge	0	3	3
Partial Solution is not a complete fix however it would give planners an opportunity to think about options to divert traffic not going to Stonehenge / Interim solution	0	3	3
Southern Route has an acceptable impact on tranquil landscape / Stonehenge was tranquil once too	0	3	3
Concerns about effects of pollution / greenhouse gases	0	3	3
Partial Solution does not properly address problem but least impact on biodiversity / archaeology / WHS / environment. If biodiversity / archaeology not damaged then may be a solution	0	3	3
If Published Scheme is not built then WHS status could be removed	1	2	3
Any tunnel will/could cause trouble with the water-table / subsidence / flooding in my village	1	2	3
The solution must consider that Stonehenge is unique and cannot be replaced	1	2	3
Q4 is a loaded question, the only clear option is to go ahead with the Published Scheme regardless of cost	1	2	3
The longer we wait the more damage will be caused year on year	1	2	3
Why not build a dual three lane tunnel to future proof the project	1	2	3

Question 6 - Comment	Local	Non-local	Total
Plan to clear Stonehenge site of modern features and plan for grandiose Visitor Centre are completely unjustified / impacts are unacceptable / Published Scheme is unnecessary	1	2	3
Northern Route will cause damage to archaeological land, barrows and Bronze age field system, small Cut & Cover unacceptable / too intrusive	1	2	3
Northern Route adds miles to journey	1	2	3
Southern Route is an acceptable alternative to the Northern Route / better than the Northern Route	1	2	3
Southern Route has least impact on local residents and is largely on 'dead ground'	2	1	3
Partial Solution appears to be cheapest and simplest solution / easy to implement	2	1	3
Any scheme must be aware of traffic measures around Salisbury - comments about Salisbury roads	2	1	3
Build a cheap scheme and use savings to fund a Salisbury bypass	3	0	3
Northern Route is worse than Southern Route for biodiversity / locals / intrusive and more expensive	0	2	2
If the project costs too much then I would support fund-raising activities to help / personal donations	0	2	2
Southern Route will require vegetated overbridges for wildlife and routes underneath carriageway for pedestrians and agricultural vehicles	0	2	2
The Packway through Larkhill should be made access-only	0	2	2
Consult with more groups / experts - CBA, Wiltshire Archaeological & Natural History Society, Prehistoric Society, Heritage Action, Pagan groups	0	2	2
The A344 should not be closed until A303 is dualled. Passed by Wiltshire County Council in 1992	0	2	2
Partial Solution is second best to Do-Nothing	0	2	2
Don't over estimate the amount of remaining archaeology on the route to the south it probably isn't much compared to the north	0	2	2
Safety at Longbarrow Crossroads needs to be improved	0	2	2
Supports the Lawrence Alternative	0	2	2
Supports National Trust Larkhill Corridor	0	2	2
It is time to rectify the mistake of placing the A303 next to the Stones	0	2	2
Propose keeping existing road as local option and divert A303 so that drivers have choice	0	2	2
Tunnels will cause damage to areas that support unique wildlife	0	2	2
The geological report shows tunnelling is likely to be unstable	0	2	2
The tunnel option is supported by specialists in the environmental and heritage sectors	0	2	2
Must remove the 21st century from the WHS / return it to isolation (tunnels)	0	2	2
Concerns over Regional Economic Strategy for SW / full length of A303 needs to be looked at	0	2	2
Proposes to upgrade road, give arch roof then cover and landscape	0	2	2
Proposes / supports that the A303 through the WHS be improved mostly on-line but with minor realignment of around 50m to the south adjacent to Stonehenge	0	2	2
Could savings through cheaper route be redirected to EH for further site improvements?	1	1	2
Stonehenge is not a virgin monument, having been reconstructed in the past	1	1	2
None of the schemes meet the UNESCO / ICOMOS requirements	1	1	2
Opposes the Parker Route (AR4)	1	1	2
Southern Route is most likely to be completed on time and on budget / has to be done	1	1	2

Question 6 - Comment	Local	Non-local	Total
If the National Trust continue with this unrealistic expectations, they should be required to pay	1	1	2
There are no residents that are affected at the Stones - just bypass Winterbourne Stoke and leave rest	1	1	2
Single carriageway safer / Winterbourne stoke should be single carriageway (Partial Solution)	1	1	2
Costs out weigh the benefits of the Published Scheme	1	1	2
Partial Solution Option 4 would remove the roundabout and cut the congestion that affects locals / retains view of Stonehenge / at a reasonable cost	1	1	2
Do not remove the roads/parking from Stonehenge - people want easy access	2	0	2
Do not take so much notice of the National Trust	2	0	2
Quick / realistic / affordable solution necessary with minimum disruption to locals and land	2	0	2
Proposes making the A344 one-way east to west (i.e. ban right-turn in from A303)	2	0	2
Scheme should link up with a western bypass of Salisbury	2	0	2
The Government is right to halt this hugely expensive project / immoral to spend so much money (Published Scheme)	2	0	2
The tunnel option will destroy the sacred energy at Stonehenge	2	0	2
Southern Route will have too much impact on local residents / noise	2	0	2
Close A344 which is the main contributor to noise at the site	2	0	2
The funding for this scheme should not come out of the regional budget is should be a national scheme due to the importance of Stonehenge	2	0	2
Proposes using existing A303 as eastbound and building a second carriage way to the south for the westbound traffic	2	0	2
Northern Route is an acceptable alternative as it only affects military housing (people are only stationed there, and tend not to stay for life)	2	0	2
Proposes / supports Jackson Route (AR2)	0	2	2
Why not do away with A303 between Amesbury and Winterbourne Stoke and let traffic use an improved A36 (safety and smoothness of traffic flow rather than speed)	0	1	1
A344 must become at the most a track - for emergency access from the A360	0	1	1
Government has deliberately delayed things so that cost of Published Scheme would escalate	0	1	1
With current and projected traffic volume no option can be too expensive	0	1	1
Build first bore and only start second once first has been paid for by tolling	0	1	1
Build road as a packway, tracing each carriageway separately. Hopefully improvements to engine technology will reduce noise and emissions	0	1	1
Partial Solution Option 3 would allow safe and effective linkage of the A303 and the A360 which is essential for local people	0	1	1
Presumably small roads access, junction and re-routing of traffic with roundabouts could be managed in the relatively small area bounded by Winterbourne Stoke / Countess / Larkhill to cut traffic problems	0	1	1
Proposes route through Wylve valley, eastwards then north-east along Avon valley and through eastern edge of WHS to the A303 at Vespasian's Camp	0	1	1
Proposes turning present A303 into a tidal one way system where traffic can only go in one direction at most congested times	0	1	1
Conflicting single interest groups have combined to frustrate any solution other than the unaffordable one	0	1	1
Proposes / Supports a split road after Winterbourne Stoke Bypass with 2 eastbound lanes to north and 2 westbound lanes to the south (the Berkley-Mathews Route)	0	1	1

Question 6 - Comment	Local	Non-local	Total
Modern tunnelling methods are better able to cope with difficult ground conditions, e.g. fractured chalk	0	1	1
Grade-separated junctions should be provided at Countess Roundabout and Longbarrow Crossroads	0	1	1
Concerns over Avebury	0	1	1
Length of route is irrelevant - if it was originally there people would not complain	0	1	1
Partial Solution improves safety at junction and visitors experience	0	1	1
Other A360 junction option would simply be a large roundabout in Partial Solution	0	1	1
Key stakeholders 'opinions are more important than traffic	0	1	1
If Published Scheme cancelled then do nothing but flyover at Countess to relieve bottleneck	0	1	1
Consideration must be given to reducing noise of the any scheme i.e. low noise road surface	0	1	1
The present A303 should be kept open in addition to the new road, you never no when it will be needed	0	1	1
Would it not have suited the national network better not to have abandoned development of the A31/A35	0	1	1
A344 / A303 junction to Visitor Centre closure not acceptable due to impact on cyclists unless improvements to rights-of-way are made	0	1	1
Proposes route leaves under Boscombe Down airfield by Cut & Cover tunnel to A345, crosses Avon valley by bridge and runs NNW to the A360, bridge over River Till then rejoins A303 at E end of dual carriageway section	0	1	1
Proposes circular roundabout around Stonehenge	0	1	1
Project needs clearer objectives - current are contradictory	0	1	1
Noisy four lane highway (tunnels)	0	1	1
Time and fuel is wasted in congestion around Stonehenge	0	1	1
Cut & cover tunnel could carry footpath to give access to Durrington Walls	0	1	1
Why was the National Trust excluded from Review?	0	1	1
Proportion of entry ticket price should go towards cost and upkeep	0	1	1
If any thing other than a tunnel is proposed then it shows we know the cost of every thing and the value of nothing	0	1	1
Too much emphasis on surrounding monuments - no evidence of relation to Stonehenge	0	1	1
Supports AR 7	0	1	1
Consider converting current system to one way dual carriageway on summer Saturdays until solution found	0	1	1
A303 / A360 crossing once completed should be tolled to pay for the Published Scheme	0	1	1
Proposes southern route all above ground level, with southern Winterbourne Stoke Bypass	0	1	1
Proposes widening within landtake as far as possible towards Longbarrow Crossroads, as temporary measure	0	1	1
Proposes a southern alignment, Parker to the east, Lawrence to the west, with a Salisbury link/bypass	0	1	1
Enclosed "About the mythical history of Great Britain and Ireland" (By mythologist Javad Mofrad)	0	1	1
Proposes route north of Larkhill, Durrington and Bulford	0	1	1
Proposes alternative Southern Route, with 80kph design speed and road on/above existing levels on geotextile to retain all existing ground/archaeology. Includes 'wall/bund' to northern side and noise barriers to southern	0	1	1

Question 6 - Comment	Local	Non-local	Total
Proposes a longer tunnelled option based on the Southern Route	0	1	1
Government should have a clear published timetable from decision making through to construction	0	1	1
A longer term solution is needed, in-line with those proposed by the Council for British Archaeology	0	1	1
A Cut & Cover tunnel will retain the ambience of this site	0	1	1
If overland route is chosen could close planted trees on either side help to shield Stonehenge and provide nesting sites?	0	1	1
Government will say it has done a lot and spent a lot but it will be wasted money and not really help the situation (Partial Solution)	0	1	1
Shut the A344 it is surplus to requirements	0	1	1
Why not give the plain back to the army they do a better job at conserving SSSIs	0	1	1
A gradual lane merging and better signage would decrease the congestion near Stonehenge	0	1	1
Proposes a revised southern route to pass to the South of Amesbury	0	1	1
Proposes route skirting to the south of the WHS and under Boscombe Down airfield to join the A303 to the east of Amesbury	0	1	1
Proposes far northern route, north of Shrewton, passing to south of Netheravon	0	1	1
Proposes a one-way system using A303, A360, A344 with Winterbourne Stoke Bypass	0	1	1
Proposes / supports northern route wholly outside the World Heritage Site running north of Larkhill, Durrington and Bulford and re-joining the A303 to the east of Amesbury	0	1	1
Proposes that A303 swing south, circumnavigate Stones by 1/2 - 1 mile. Entry to Stonehenge via A360 Railway from car park to stones	1	0	1
How can the cost be so much higher for the Northern Route than the Southern Route considering the Government owns most of the land there	1	0	1
Proposes on-line dualling with A344 open and no improvements at Countess	1	0	1
If the tunnel options are too expensive why are they still being considered?	1	0	1
If Partial Solution is a temporary solution - Option 1 would be best as it involves the least amount of work	1	0	1
Supports the dualling of A360 into Salisbury	1	0	1
Why grade-separation at Countess? The problem is where double goes to single carriageway not the roundabout	1	0	1
Proposes on-line solution, but with a roundabout at Stonehenge Bottom and lay-bys for views of Stonehenge	1	0	1
Partial Solution Options 2, 3 and 4 would increase journey lengths for those using the A360	1	0	1
Wiltshire roads are the worst in the country	1	0	1
The congestion on the A303 does not directly affect local residents	1	0	1
Scheme should be funded by people who use the road to commute / holiday in SW	1	0	1
Tunnel option should go ahead. Wiltshire spend very little on roads and services	1	0	1
Need for low speed in tunnels will cause tail backs	1	0	1
As the owner of a small business, the business is seriously effected by traffic congestion, it acts as a deterrent to locals	1	0	1
It is critical to have uninterrupted view from Stonehenge to the south which is the most attractive view	1	0	1
Proposes on-line scheme, with A360 from Longbarrow Crossroads to Airman's Corner dualled	1	0	1

Question 6 - Comment	Local	Non-local	Total
Even with a tunnel the site isn't going to be restored to how it was with Salisbury Plain Boscombe Down etc	1	0	1
The Highways Agency need to focus on the road problems and not allow EH to drive any solution	1	0	1
Southern Route will also have the benefit of stopping Amesbury's urban sprawl	1	0	1
Surely by now we should know the impact of the ground conditions on tunnel cost	1	0	1
Cut & Cover tunnel puts us back 12 years	1	0	1
Proposes A303 passes under Countess Roundabout rather than over	1	0	1
Proposes clover leaf junction at Countess ease congestion on public holidays	1	0	1
Not that important to hide traffic	1	0	1
If A303 was dualled after Amesbury the road for the flyover at Countess would not be required	1	0	1
Proposes southern route with reduced curvature and shifted north by 300m. Road in cutting above water table.	1	0	1
Ignore the moaning and whiners who will protest, they have to accept that it is the 21st century	1	0	1
A series of tunnels may be better to cut down on expensive ventilation systems	1	0	1
Proposes alternative route, similar to Parker (AR4) in the east, Case in the west, with a Salisbury eastern link	1	0	1
Consider a bored tunnel taking traffic east to west only, leave the A303 where it is so west to east traffic can enjoy the sight of the Stones	1	0	1
Proposes alternative route, similar to Parker (AR4) in the east, and Lawrence in the west.	1	0	1
Concerned about security risk with route close to military camp	1	0	1
Many of the residents affected by the Northern Route are serving soldiers away on operations, this may dilute opposition to the route	1	0	1
Concerns for child safety with the Northern Route running through the village	1	0	1
Concerns about the impartiality of the team undertaking the Review	1	0	1

Table C11 Final Question on Questionnaire

The leaflet was informative and helped my understanding of the current scheme options?					
	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Don't Know
Total	2935	915	189	94	102

Table C12 Final Question – Additional Comments on Questionnaire

Final Question – Additional Comments	No.
Questions 4 & 5 are leading and I have chosen not to answer them (RSPB encouraged response)	621
The leaflet / website / exhibition was helpful / good	139
Excellent presentation, thank you for the opportunity to comment on a major road scheme	61
Leaflet / website was misleading, biased and suggested decision has already been made	43
Not every option / alternative route was presented on the leaflet	39
Environmental / Archaeological impact information seems partial / had to rely on other sources of information	35
We haven't received a map / form / return envelope / leaflet / consultation document	34

Final Question – Additional Comments	No.
The leaflet does not contain enough detail / the maps are too small / problems interpreting the maps	31
Presentation / consultation not helpful / vague / waste of money / confusing	29
Difficulties / Confusion with website / form	25
Good exercise providing people in power are listening	24
Concerns over cost of preparation / leaflet	21
The Partial Options are not fully explained	11
Helpful but could have been biased	10
Repeats the original exercise / already knew most of this / let this be the last consultation	10
By the time I had received the leaflet I had little / no notice of the exhibition dates / exhibition was too short	10
Information sent out by RSPB was more informative / other sources used	10
The leaflet should be better circulated within the tourism industry / wider consultation / not enough publicity	9
Question 3 part j is double edged sword / misleading	9
Helpful / information mostly useful	8
Would have liked information from different argument / interest groups so I could make a more informed choice	6
Project should not follow financial constraints - public opinion should prevail	5
Didn't contain view points from a local perspective	5
Information limited to traffic considerations / too much emphasis on cars and money	5
Q1 should have allowed respondents to rank all schemes and not just suggest best/worst option	4
Do not understand some of the language	4
Not ticking Questions 4 or 5 as they are not solution I have proposed	3
Column three says non-tunnel options on existing line have been rejected - does Partial Solution not come into this category?	3
Partial Solution could be described as first step towards Published Scheme / Winterbourne Stoke Bypass option	3
Question 3 parts f to j no bearing on aims in leaflet / irrelevant	3
Leaflet was not sent to my house (local resident) had to go out and get it	3
People who are not RSPB members / have special knowledge may be unaware of issues and have trouble with the comprehensive form	2
More info the better - if unbiased	2
Have already read a lot on the subject over the years / familiar with subject - supported tunnel from beginning - disappointed that questioned again	2
Leaflet was blatantly biased, it leads you to believe that a solution for Stonehenge was required rather than to resolve congestion	2
Road safety info is misleading, bottleneck is nuisance not hazard. Hazard is at A360 junction	2
Presents inadequate options / appalled by new ideas	2
Would be useful to know where results of consultation responses will be published and the final decision making information will be available	2
Question 3 parts e to g cannot answer on guess / do not know present situation / what is safety record?	2
Would have helped to have some visual interpretation of the legacy of the cut and cover tunnel	2
Maps very helpful	2
Less emphasis should be made of Stone Curlew, it is the overall picture that is vital. RSPB concern for all species and environment / trivialises ecological argument	2
Would have liked information on Visitor Centre to be combined with scheme information	2
Actual route plans would be useful on the web-site	1
Keep people informed - should avoid protests	1
Question 3 would be more useful if "not very important" level added	1
Ignored problems of south Wiltshire and chaos in Salisbury without an east west bypass	1
Question 3 not answered as parts h to j not as important as conservation	1

Final Question – Additional Comments	No.
No information on ceremonial landscape	1
Question 3 is geared towards what English Heritage and National Trust want	1
Not made clear what Published Scheme is - other info had to be checked	1
Why is the Cut & Cover option excluded from part 4?	1
Would like to see a similarly balanced summary in the national press / television	1
No information on which routes have been previously turned down	1
Contradictory comment "more than just a road". Scheme was sought to be separate to English Heritage's plans	1
Asking to choose layout of Partial Solution junctions is inappropriate - Government or traffic engineers should do this	1
Justice not given to work already being done on biodiversity	1
Leaflet should have included construction impacts for all schemes	1
The leaflet was good but needed the exhibition to make final informed decision	1
Consultation long overdue	1
No time proposals presented in the leaflet	1
Computer generated views of what Stonehenge with each route would look like would have been helpful	1

Table C13 – Corporate bodies’ option preferences (best or worst)

Letter (L) or questionnaire (Q)	Published Scheme	Cut & Cover	Northern Route	Southern Route	Partial Solution	Do-Nothing
A36/A350 Corridor Alliance	L	w	w	w	w	
All Party Parliamentary Group on World Heritage Sites (letter anticipated)	L	b				
Barford St Martin Parish Council	Q			b		w
Berwick St James Parish Council	L					
CBA Wessex	Q+L	w	w	w	w	
CBI South West	L				w	
Council for British Archaeology	L	w	w	w	w	w
Country Land and Business Association	L	b	w	w		
CPRE Wiltshire and National	Q+L					b
Defence Estates	L		w			
Durrington Parish Council	Q+L	w	w	w	w	w
English Heritage	L	b	w	w	w	w
Environment Agency	L	b	w			
Friends of the Earth (South West England)	L	w	w	w	w	
Guilford Environmental Forum	L	b	w	w		
ICOMOS-UK	L	w	w	w	w	w
Natural England	L	b	w			

Letter (L) or questionnaire (Q)		Published Scheme	Cut & Cover	Northern Route	Southern Route	Partial Solution	Do-Nothing
Pagan and Druid Communities	L	b	w	w		w	
RAC Foundation for Motoring Ltd	L	b	w	w	w	w	
Road Block	L	w	w	w	w	w	b
Road Haulage Association	Q	w			b		
Royal Archaeological Institute	L	w	w	w	w	w	
RSPB	L	b		w	w		
Salisbury District Council	L	b	w	w	w	w	
Society of Antiquaries of London	L	b	w	w	w	w	
South West Tourism	Q				b	w	w
Sustrans	Q	b				w	
SW Regional Assembly	L					w	
SWRDA	L					w	
The AA Motoring Trust	L					w	
The Avebury Society	Q+L						b
The British Museum	L	b					
The National Trust	L	w	w	w	w	w	
The Prehistoric Society	Q+L	w	w	w	w	w	b
Trail Riders Fellowship	Q		b		w		
Transport 2000	L	w	w	w	w	w	
UK National Commission for UNESCO	L	b	w	w	w	w	
Wiltshire County Council	L	b					
Wiltshire Wildlife Trust	Q+L	b					
Winterbourne Stoke Parish Council	L	b					

Appendix D - Scheme Budget Estimates

Scheme Budget Estimates

D.1 Overview

The scheme budget estimate covers the total cost of a scheme including the costs associated with construction, work required by statutory undertakers, preparation and supervision, risk analysis and optimism bias, land and VAT. These costs also take into account inflation and therefore consideration of the timescale for the necessary statutory procedures and design development before a start of construction is important.

The following provides details of the current scheme budget estimates for the Published Scheme and options considered in Stage 2 of the Scheme Review. A breakdown of the costs is also provided together with estimated start dates for the key stages of the statutory procedures and construction.

D.2 Published Scheme

The scheme budget estimate for the Published Scheme was £470m at the time of the publication of the Inspector's Report following the Public Inquiry. This was based on the original anticipated construction start date of early 2005. With the start date deferred to early 2008 say, the scheme estimate increases to £510m taking into account the delay using the standard Treasury inflation factor (2.5% to 2008 and 2.7% thereafter), and this was reported in the Scheme Review Stage 1 Report.

During Stage 2 of the Scheme Review the construction cost estimate for the Published Scheme has been revised to £289m which would give an overall scheme budget of £502m using the same assumptions as for the Stage 1 Report. However as part of the review of costs an assessment of future inflation in the construction sector has been undertaken. This has considered recent increases in construction prices and the possible future effects of major infrastructure works such as the Olympics and CrossRail. Based on this assessment it is considered that a reasonable rate for future inflation would be 4.5%. Using this value the scheme budget for the Published Scheme would need to be £539m

D.3 Options

D.3.1 Timescale

Table D.1 provides details of the estimated start date for each option, which reflects their current level of development compared with the Published Scheme. These dates have been assessed based on the following assumptions:

- The Cut & Cover Tunnel option is within the route corridor for the Published Scheme and would require minimal survey work and design development. Therefore draft Orders could be ready in 2007.
- The Northern and Southern Routes are partly within the corridor and would require some further survey work but draft Orders could be ready in 2008
- The borrow pit required for the Partial Solution is outside the existing corridor and would require further survey work and assessment. It is unlikely that draft Orders could be published before 2008.
- Routes 1 & 2 within the National Trust corridor would require extensive survey work and assessment. It is unlikely therefore that draft Orders could be published before 2009.

Table D.1 Timescale for Options

	Publication of Draft Orders	Public Inquiry	Start of Construction	Duration (months)
Published Scheme	2003	2004	2008	52
2.1km Cut & Cover Tunnel	2007	2008	2009	34
Northern Route	2008	2009	2010	30
Southern Route	2008	2009	2010	30
Partial Solution	2008	2009	2010	21

D.3.2 Contributing Costs

The scheme budget costs are developed from separate cost estimates for construction (including statutory undertakers' works and risk), preparation and supervision, VAT, optimism bias, inflation and land. These costs are based on the following:

- The construction cost of each option has been developed using the same base data as the Published Scheme (i.e. 2003 prices). These include the costs of works for the Statutory Undertakers and construction risk. The costs associated with statutory undertakers work are based on those estimated for the Published Scheme but factored in line with the length of each option.
- Preparation and Supervision costs include all expended costs since programme entry in 1998 (around £18m) to take the Published Scheme up to and through Public Inquiry. To these costs are added estimates of future preparation and supervision costs. The options would generally have higher costs when compared to the Published Scheme as the statutory process would have to be repeated.
- VAT has to be added to "green field" works undertaken outside the highway boundary. (For solutions that partially use the existing road, VAT is not added to the whole scheme construction cost.)
- Optimism Bias is an additional allowance in the budget to cover eventualities that cannot be defined at an early development stage. Optimism Bias is reduced as a scheme progresses through the design stages and it becomes possible to define and allocate values to activities at risk. In addition Optimism Bias varies depending on the scheme's complexity and on whether a rigorous risk assessment has been carried out. The percentage allowance for the Published Scheme and for the options considered is reported in Table D.2.
- An allowance for inflation has been added to take the costs forward from May 2003. Up to April 2006 actual construction indices (Baxter) have been used giving an estimate of just over 20% for this period. From April 2006 onwards an inflation rate of 4.5 has been assumed. The totals of the amount included for inflation is given in Table D.3. (In future assessments it would be possible to update the inflation allowance on the basis of actual figures.)
- Land costs used in the budget for the Published Scheme are £9M. This figure has been used as a basis for estimating (as a proportion of the scheme length) the land costs for the options.

Table D.2 Risk Analysis and Optimism Bias

	Risk Analysis	Optimism Bias	Comments
Published Scheme	Yes	8%	Level of Complexity: Non-Standard/Complex Stage of Preparation: draft Order publication
2.1km Cut & Cover Tunnel	Part	8%	Level of Complexity: Standard Stage of Preparation: Preferred Route (with risk analysis in part as for Published Scheme)
Northern Route	No	25%	Level of Complexity: Standard Stage of Preparation: Preferred Route
Southern Route	No	25%	Level of Complexity: Standard Stage of Preparation: Preferred Route
Partial Solutions	Yes	5%	Level of Complexity: Standard Stage of Preparation: draft Order publication

Table D.3 Contributing Costs

	Works Cost (2003 prices) (£M)	Preparation Costs (£M)	VAT (£M)	Optimism Bias (£M)	Inflation at 4.5% (£M)	Land Costs (£M)	Scheme Budget Estimate (£M)
Published Scheme	289	22	39	28	152	9	539
2.1km Cut & Cover Tunnel	195	30	27	20	132	9	413
Northern Route	113	32	16	40	105	11	317
Southern Route	95	32	13	35	89	9	273
Partial Solution (Junction Option 1)	67	28	9	5	50	8	167
Partial Solution (Junction Option 2)	75	28	10	6	53	8	180
Partial Solution (Junction Option 3)	78	28	11	6	54	8	185
Partial Solution (Junction Option 4)	80	28	11	6	57	8	190
Published Scheme – early 2007 start	289	22	39	28	132	9	519
Published Scheme - Staged construction	349	34	47	34	326	9	799
National Trust: Route 1	118	36	17	43	119	14	347
National Trust: Route 2	114	36	17	41	116	14	338

Appendix E - Appraisal Summary Tables

Published Scheme heard at Public Inquiry		Description: Northern bypass of Winterbourne Stoke, on-line improvement and 2.1 km bored tunnel past Stonehenge, and grade-separation over the A345 at Countess Roundabout. The Scheme is an 'exceptional environmental scheme'.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £349.0 million (Low Growth) £343.7 million (High Growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Placing A303 in tunnel would significantly reduce traffic noise levels in vicinity of Stonehenge and adjacent parts of WHS (by up to 30dB). The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 31 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1489 No. of properties with no change: 477 No. of properties experiencing a deterioration: 1661	Overall assessment score for NO ₂ : -270 } less effect on PM ₁₀ : -78 } property
	Greenhouse Gases	Emissions increase by 14.8 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 129% Route as % Do-Min: (2008) 115%
	Landscape	Beneficial effects on the landscape immediately around Stonehenge and the immediately associated surrounding monument groups. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Moderate Beneficial
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Major beneficial effects on internationally important setting of Stonehenge and immediately associated Monuments within the WHS. Direct impact on 14 unscheduled sites inside and outside the WHS. Adverse indirect effects on 9 sites in wider parts of the WHS.	Length of new route above ground in WHS: 3.4km Permanent/temporary landtake in WHS: 20.0ha / 0.8ha	Large Beneficial
	Biodiversity	Overall net benefits anticipated through: reconnection of previously fragmented habitats in World Heritage Site (of potential major benefit to Stone Curlews), net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land. Improved protection from pollution events for riverine flora and fauna. Main localised negative effects would be from: viaduct shading and road spray on River Till, disturbance to birds and bats from Winterbourne Stoke Bypass.	N/A	Slight Beneficial (potentially higher through anticipated off-site agreements)
	Water Environment	The tunnel would slightly change the local groundwater regime, but this would not result in any significant change to flow in the Rivers Avon and Till. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme significantly improves rights-of-way network in this part of south Wiltshire, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Driver stress reduced from High to Low due to high standard dualling, although potential for tunnel to cause Moderate stress for some users. Loss of view of Stonehenge (due to tunnel) for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would arise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1709, High growth: 1988	PVB £86.6m (Low growth) PVB £97.9m (High growth)
	Security	CCTV surveillance, lighting and emergency phone facilities would offer high levels of security within the tunnel. The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	Costs include £70.4m for tunnel operating costs.	Central Gov. PVC: £349.0m (Low) £343.7m (High)	PVC: £349.0m (Low growth) £343.7m (High growth)
	TEE: Business Users & Transport Providers	-	Business (PVB): £143m (Low) £226.9m (High) Private Sector Providers: Negligible	PVB: £143m (Low growth) £226.9m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1.5 mins (off peak) and 4 mins (peak)	PVB: £127.4m (Low growth) £220.6m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road and in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Large Beneficial
	Access to Transport System	-	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Substantial conformity with national, county and local policies supporting this as an 'exceptional environmental scheme'. Highly beneficial effects on most important sites and monuments within Stonehenge WHS, supporting objectives of Stonehenge WHS Management Plan.	N/A	Beneficial
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils but the Scheme overall is well integrated with Other Government Policies, inc policy to improve the A303 from London to the West Country.	N/A	Beneficial

2.1km Cut & Cover Tunnel		Description: Northern bypass of Winterbourne Stoke, on-line improvement and 2.1 km cut & cover tunnel past Stonehenge, and grade-separation over the A345 at Countess Roundabout. The Scheme is an 'exceptional environmental scheme'.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £283.3 million (Low growth), £278.2 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Placing A303 in tunnel would significantly reduce traffic noise levels in vicinity of Stonehenge and adjacent parts of WHS (by up to 30dB). The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 31 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1489 No. of properties with no change: 477 No. of properties experiencing a deterioration: 1661	Overall assessment score for NO ₂ : -270 } less effect on PM ₁₀ : -78 } property
	Greenhouse Gases	Emissions increase by 14.8 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 129% Route as % Do-Min (2008): 115%
	Landscape	Beneficial effects on the landscape immediately around Stonehenge and the immediately associated surrounding monument groups. Adverse landscape and visual effects at Stonehenge arising from 10m high embankment across Stonehenge Bottom. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Slight Beneficial
	Townscape	Beneficial effects in Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Major beneficial effects on internationally important setting of Stonehenge and immediately associated Monuments within the World Heritage Site partially offset by adverse effects of a permanent alteration of the landform at Stonehenge Bottom. Direct adverse impacts on 14 unscheduled sites. Adverse indirect effects on 10 sites in wider parts of the WHS. Would result in loss of any as-yet undiscovered archaeological remains along line of tunnel, although surveys indicate that there are no remains of importance left.	Length of new route above ground in WHS: 3.4km Permanent/temporary landtake in WHS: 20.0ha / 10ha	Minor Beneficial
	Biodiversity	Overall net benefits anticipated through: reconnection of previously fragmented habitats in World Heritage Site (of potential major benefit to Stone Curlews), net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land. Improved protection from pollution events for riverine flora and fauna. Main localised negative effects would be from: viaduct shading and road spray on River Till, disturbance to birds and bats from Winterbourne Stoke Bypass. Short term adverse impacts through construction of cut & cover tunnel on Stonehenge SNCI and breeding and wintering birds and greater risk of short term impacts of Slight Adverse significance on the lichens of Stonehenge, which would need to be addressed through additional chalk dust suppression measures.	N/A	Slight Beneficial (potential Moderate adverse during construction, long term potential benefits through off-site agreements and land use change)
	Water Environment	The tunnel would very slightly change the local groundwater regime, but this would not result in any significant change to flow in the Rivers Avon and Till. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme significantly improves rights-of-way network in this part of south Wiltshire, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
Journey Ambience	Driver stress reduced from High to Low due to high standard dualling, although potential for tunnel to cause Moderate stress for some users. Loss of view of Stonehenge (due to tunnel) for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would arise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial	
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1705, High growth: 1982	PVB £87.7m (Low growth) PVB £99.0m (High growth)
	Security	CCTV surveillance, lighting and emergency phone facilities would offer high levels of security within the tunnel. The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	Costs include £70.4m for tunnel operating costs.	Central Gov. PVC: £283.3m (Low) £278.2m (High)	PVC: £283.3m (Low growth) £278.2m (High growth)
	TEE: Business Users & Transport Providers	—	Business (PVB): £143.1m (Low) £227.4m (High) Private Sector Providers: Negligible	PVB: £143.1m (Low growth) £227.4m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1.5 mins (off peak) and 4 mins (peak)	PVB: £127.8m (Low growth) £221.6m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road and in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Large Beneficial
	Access to Transport System	—	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Substantial conformity with national, county and local policies which support this as an 'exceptional environmental scheme'. Beneficial effects on most important sites and monuments within Stonehenge WHS, supporting objectives of Stonehenge WHS Management Plan.	N/A	Beneficial
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils but the Scheme overall is well integrated with Other Government Policies, inc policy to improve the A303 from London to the West Country.	N/A	Beneficial

Northern Route		Description: Northern bypass of Winterbourne Stoke, connecting with a northern bypass of Stonehenge and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £135.2 million (Low growth), £126.7 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	The nearest distance to Stonehenge from the route is approximately 1400m giving significant reduction in traffic noise. Noise would increase at Larkhill. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 40 100-200m 132 200-300m 237	Estimated net 12 additional residents would be annoyed by noise in the design year.
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : 2. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : 2. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1684 No. of properties with no change: 484 No. of properties experiencing a deterioration: 1461	Overall assessment score for NO ₂ : -92 } less effect on PM ₁₀ : -29 } property
	Greenhouse Gases	Emissions increase by 23 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 139% Route as % Do-Min (2008): 123%
	Landscape	Divides Stonehenge from other major monuments and visible from the Stones. Beneficial effects on the landscape immediately around Stonehenge and some of the surrounding monument groups, including the Winterbourne Stoke group at Longbarrow Crossroads. Uses land disrupted by military development at Larkhill. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Slight Beneficial
	Townscape	Beneficial effects in Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout. Significant adverse visual effects for over 100 properties at Larkhill. Short tunnel and mitigation earthworks to reduce visual effects at Larkhill.	N/A	Slight Adverse
	Cultural Heritage	Beneficial effects on internationally important setting of Stonehenge and immediately associated monuments within the World Heritage Site. Severance of Stonehenge from the associated monuments of Woodhenge, Robin Hood's Ball and Durrington Walls. Direct impact upon 11 unscheduled sites. Potential adverse indirect effects upon 23 sites inside and outside the WHS. Survey data does not match the level of investigation for the Published Scheme, and it is likely that detailed investigations would identify further heritage remains; therefore adverse impacts stated here are likely to represent a minimum figure.	Length of new route above ground in WHS: 6.4km Permanent/temporary landtake in WHS: 28.6ha / 1.9ha	Minor Adverse
	Biodiversity	Overall adverse impacts anticipated due to the construction of new road through largely undisturbed farmland. Most significant adverse impacts on Stone Curlews (and hence potentially Salisbury Plain SPA), Barn Owls, aquatic vegetation of the River Till pond and wintering birds. Adverse impacts also to habitats, vegetation and fish in River Till, Great Crested Newts, breeding birds, bats. Some localised benefits through previously fragmented habitat in WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land. Improved protection from pollution events for riverine flora and fauna.	N/A	Large Adverse with a risk of Very Large Adverse (potential for some improvement in this through off-site agreements and land use change)
	Water Environment	The northern route would have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme improves rights-of-way network in this part of south Wiltshire, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/ cycling for >30 mins/day: about 130
Journey Ambience	Driver stress reduced from High to Low due to high standard dualling. Only short glimpses of Stonehenge for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would arise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial	
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1628, High growth: 1871	PVB £84.5m (Low growth) PVB £94.7m (High growth)
	Security	The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	Costs include £9.1m for tunnel operating costs.	Central Gov. PVC: £135.2m (Low) £126.7m (High)	PVC: £135.2m (Low growth) £126.7m (High growth)
	TEE: Business Users & Transport Providers	–	Business (PVB): £94.8m (Low) £171.1m (High) Private Sector Providers: Negligible	PVB: £94.8m (Low growth) £171.1m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1 min (off peak) and 3.5 mins (peak)	PVB: £86.8m (Low growth) £172.1m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road and in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Beneficial
	Access to Transport System	–	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Beneficial effects on policies protecting important sites and monuments within Stonehenge WHS, but conflicts with many objectives of Stonehenge WHS Management Plan and affects access from the proposed Visitor Centre site.	N/A	Neutral
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils but the Scheme overall is well integrated with Other Government Policies, inc policy to improve the A303 from London to the West Country.	N/A	Beneficial

Southern Route		Description: Northern bypass of Winterbourne Stoke, connecting with a southern bypass of Stonehenge and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £111.1 million (Low growth), £104.2 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	The nearest distance to Stonehenge from the route is approximately 1180 metres giving significant reductions in traffic noise. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 5 100-200m 33 200-300m 153	Estimated net 33 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 29 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 29 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 790 No. of properties with no change: 408 No. of properties experiencing a deterioration: 2429	Overall assessment score for NO ₂ : -184 } less effect on PM ₁₀ : -49 } property
	Greenhouse Gases	Emissions increase by 34 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 151% Route as % Do-Min (2008): 134%
	Landscape	Beneficial effects on the landscape immediately around Stonehenge, and some of the surrounding monument groups including the Winterbourne Stoke group at Longbarrow Crossroads. Detailed design is likely to avoid vehicles being visible from Stonehenge over a 120m length of the route. Few adverse visual effects on property. Adverse effects on the remote and tranquil landscape south of Normanton Down which links to the Woodford Valley. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Slight Beneficial
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Beneficial effects on internationally important setting of Stonehenge and immediately associated monuments within the World Heritage Site. Direct impact upon a Scheduled linear earthwork, and 11 other unscheduled sites inside and outside the WHS. Potential adverse indirect effects upon 18 sites inside the WHS. Survey data does not match the level of investigation for the Published Scheme, and it is likely that detailed investigations would identify further heritage remains; therefore adverse impacts stated here are likely to represent a minimum figure.	Length of new route above ground in WHS: 6.0km Permanent/temporary landtake in WHS: 31.4ha / 0ha	Minor Beneficial
	Biodiversity	Overall adverse impacts anticipated from construction of new road through largely undisturbed farmland including an area managed as a nature reserve by RSPB. Most significant adverse impacts on Stone Curlews and hence potentially Salisbury Plain SPA, breeding and wintering birds. Other adverse effects on Barn Owls, bats and possibly Badgers. Some localised benefits through reconnection of previously fragmented habitat in WHS. Net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new Highways land. Improved protection from pollution events for riverine flora and fauna.	N/A	Large Adverse with a risk of Very Large Adverse (potential for some improvement in this through off-site agreements and land use change)
	Water Environment	The Southern Route would have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme improves rights-of-way network, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking /cycling for >30 mins/day: about 130
	Journey Ambience	Driver stress reduced from High to Low due to high standard dualling. Loss of view of Stonehenge for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would rise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1713, High growth: 1984	PVB £86.0m (Low growth) PVB £96.9m (High growth)
	Security	The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	-	Central Gov. PVC: £111.1m (Low) £104.2 (High)	PVC: £111.1m (Low growth) £104.2m (High growth)
	TEE: Business Users & Transport Providers	-	Business (PVB): £117.3m (Low) £198.3m (High) Private Sector Providers: Negligible	PVB: £117.3m (Low growth) £198.3m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1.5 mins (off peak) and 4 mins (peak)	PVB: £103.1m (Low growth) £192.8m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road and in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Beneficial
	Access to Transport System	-	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Beneficial effects on policies protecting some important sites and monuments within Stonehenge WHS, but conflicts with many objectives of Stonehenge WHS Management Plan.	N/A	Neutral
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils but the Scheme overall is well integrated with Other Government Policies, inc policy to improve the A303 from London to the West Country.	N/A	Beneficial

Partial Solution Junction Option 1		Description: Northern bypass of Winterbourne Stoke, single carriageway retained past Stonehenge, closure of A344/A303 junction and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £74.9 million (Low growth), £68.9 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Traffic noise levels would reduce slightly at Stonehenge due to closure of A344 junction with A303. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 35 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 719 No. of properties with no change: 590 No. of properties experiencing a deterioration: 2318	Overall assessment score for NO ₂ : -163 } less effect on PM ₁₀ : -44 } property
	Greenhouse Gases	Emissions increase by 13.3 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006) : 128% Route as % Do-Min (2008) : 113%
	Landscape	Does little to improve the setting of Stonehenge, maintaining the existing barrier created by the A303. Few adverse visual effects on property. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform. Potential significant adverse effects from borrow pits.	N/A	Moderate Adverse
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Minor beneficial effects on internationally important setting of Stonehenge and immediately associated Monuments within the World Heritage Site. Direct impact on 6 unscheduled sites inside and outside the WHS. Adverse indirect effects on 3 sites in wider parts of the WHS.	Length of new route above ground in WHS: as now Permanent/temporary landtake in WHS: 2.4ha / 0ha	Neutral
	Biodiversity	Overall adverse impacts through construction of Winterbourne Stoke Bypass. Most significant adverse impacts on breeding birds. Other net negative effects on Barn Owls, wintering birds, bats and reptiles and possibly Stone Curlews. No beneficial effects within WHS. Potential for beneficial effects on Great Crested Newts through habitat enhancement, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates and other species within new highway land. Improved protection from pollution events for riverine flora and fauna.	N/A	Slight to Moderate Adverse (potentially improved through off-site agreements and land use change)
	Water Environment	The Partial Solution would have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme only partially improves rights-of-way network, in particular severance of rights-of-way near Stonehenge is perpetuated.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Increased driver stress due to greater congestion in the single carriageway section past Stonehenge offset by improvements through Winterbourne Stoke. View of Stonehenge would be retained for drivers.	N/A	Neutral
SAFETY	Accidents	Scheme would be beneficial in reducing traffic conflicts within Winterbourne Stoke, at Countess Roundabout and at A344 junction. It would increase vehicle conflicts at Longbarrow Crossroads.	Reduction in PIAs over 60 years: Low growth: 1142, High growth: 1236	PVB £53.4m (Low growth) PVB £56.2m (High growth)
	Security	The dual carriageway Winterbourne Stoke Bypass section would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	-	Central Gov. PVC: £74.9m (Low) £68.9m (High)	PVC: £74.9m (Low growth) £68.9m (High growth)
	TEE: Business Users & Transport Providers	-	Business (PVB): £49.8m (Low) £45.3m (High) Private Sector Providers: Negligible	PVB: £49.8m (Low growth) £45.3m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1 min (off peak and peak)	PVB: £42.5m (Low growth) £52.6m (High growth)
	Reliability	Scheme would provide some benefits to motorised users by reducing congestion on the A303 and side roads at junctions in Winterbourne Stoke, at Stonehenge Bottom and at Countess roundabout. Closure of A344 would increase journey times between Stonehenge Bottom and Longbarrow Crossroads, and increase risk of congestion at Longbarrow Crossroads in peak periods.	Stress in DM: range from 105% to >125% Stress in DS: <75% in Winterbourne Stoke, >125% between Longbarrow and Stonehenge Bottom	Neutral
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Benefits for users of rights-of-way network.	N/A	Neutral
	Access to Transport System	-	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils and would conflict with the policy to improve the A303 from London to the West Country.	N/A	Adverse

Partial Solution Junction Option 2		Description: Northern bypass of Winterbourne Stoke, single carriageway retained past Stonehenge, closure of A344/A303 junction and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £83.5 million (Low growth), £77.8 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Traffic noise levels would reduce slightly at Stonehenge due to closure of A344 junction with A303. A noticeable increase in traffic noise levels would arise along The Packway. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 33 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 748 No. of properties with no change: 301 No. of properties experiencing a deterioration: 2578	Overall assessment score for NO ₂ : 55 } more effect on PM ₁₀ : 30 } property
	Greenhouse Gases	Emissions increase by 8.9% over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 123% Route as % Do-Min (2008): 109%
	Landscape	Does little to improve the setting of Stonehenge, maintaining the existing barrier created by the A303. Few adverse visual effects on property. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform. Potential significant adverse effects from borrow pits.	N/A	Moderate Adverse
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Minor beneficial effects on internationally important setting of Stonehenge and immediately associated monuments within the World Heritage Site. Direct impact on 10 unscheduled sites inside and outside the WHS. Adverse indirect effects on 4 sites in wider parts of the WHS.	Length of new route above ground in WHS: as now Permanent/temporary landtake in WHS: 2.4ha / 0ha	Neutral
	Biodiversity	Overall adverse impacts through construction of Winterbourne Stoke Bypass. Most significant adverse impacts on breeding birds. Other net negative effects on Barn Owls, wintering birds, bats and reptiles and possibly Stone Curlews. No beneficial effects within WHS. Potential for beneficial effects on Great Crested Newts through habitat enhancement, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates and other species within new highway land. Improved protection from pollution events for riverine flora and fauna.	N/A	Slight to Moderate Adverse (potentially improved through off-site agreements and land use change)
	Water Environment	The Partial Solution will have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme only partially improves rights-of-way network, in particular severance of rights-of-way near Stonehenge is perpetuated.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
Journey Ambience	Increased driver stress due to greater congestion in the single carriageway section past Stonehenge offset by improvements through Winterbourne Stoke. View of Stonehenge would be retained for drivers.	N/A	Neutral	
SAFETY	Accidents	Scheme would be beneficial in reducing traffic conflicts within Winterbourne Stoke, at Countess Roundabout, at A344 junction and at Longbarrow Crossroads. Increased conflicts on other local routes through traffic diversion.	Reduction in PIAs over 60 years: Low growth: 1308, High growth: 1497	PVB £53.6m (Low growth) PVB £57.5m (High growth)
	Security	The dual carriageway Winterbourne Stoke Bypass section would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	–	Central Gov. PVC: £83.5m (Low) £77.8m (High)	PVC: £83.5m (Low growth) £77.8m (High growth)
	TEE: Business Users & Transport Providers	–	Business (PVB): £48.6m (Low) £51.2m (High) Private Sector Providers: Negligible	PVB: £48.6m (Low growth) £51.2m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1 min (off peak) and 2.5 mins(peak)	PVB: £33.4m (Low growth) £48.6m (High growth)
	Reliability	Scheme would provide some benefits to motorised users by reducing congestion on the A303 and side roads at junctions in Winterbourne Stoke, at Stonehenge Bottom and at Countess roundabout. Closure of A344 and Longbarrow Crossroads would lead to some reduction in journey times between Stonehenge Bottom and Longbarrow Crossroads. Transfer of traffic would lead to some increase in journey times on other routes.	Stress in DM: range from 105% to >125% Stress in DS: <75% in Winterbourne Stoke, 109% between Longbarrow and Stonehenge Bottom	Neutral
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Benefits for users of rights-of-way network.	N/A	Neutral
	Access to Transport System	–	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils and would conflict with the policy to improve the A303 from London to the West Country.	N/A	Adverse

Partial Solution Junction Option 3		Description: Northern bypass of Winterbourne Stoke, single carriageway retained past Stonehenge, closure of A344/A303 junction and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £87.9 million (Low growth), £83.7 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Traffic noise levels would reduce slightly at Stonehenge due to closure of A344 junction with A303. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 32 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1274 No. of properties with no change: 408 No. of properties experiencing a deterioration: 1945	Overall assessment score for NO ₂ : -164 } less effect on PM ₁₀ : -41 } property
	Greenhouse Gases	Emissions increase by 10.6% over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 125% Route as % Do-Min (2008): 111%
	Landscape	Does little to improve the setting of Stonehenge, maintaining the existing barrier created by the A303. Few adverse visual effects on property. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform. Potential significant adverse effects from borrow pits.	N/A	Moderate Adverse
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Minor beneficial effects on internationally important setting of Stonehenge and immediately associated monuments within the World Heritage Site. Direct impact on Scheduled linear earthwork and 10 unscheduled sites inside and outside the WHS. Adverse indirect effects on 4 sites in wider parts of the WHS.	Length of new route above ground in WHS: as now Permanent/temporary landtake in WHS: 2.4ha / 0ha	Neutral
	Biodiversity	Overall adverse impacts through construction of Winterbourne Stoke Bypass. Most significant adverse impacts on breeding birds. Other net negative effects on Barn Owls, wintering birds, bats and reptiles and possibly Stone Curlews. No beneficial effects within WHS. Potential for beneficial effects on Great Crested Newts through habitat enhancement, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates and other species within new highway land. Improved protection from pollution events for riverine flora and fauna.	N/A	Slight to Moderate Adverse (potentially improved through off-site agreements and land use change)
	Water Environment	The Partial Solution would have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme only partially improves rights-of-way network, in particular severance of rights-of-way near Stonehenge is perpetuated.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Increased driver stress due to greater congestion in the single carriageway section past Stonehenge offset by improvements through Winterbourne Stoke. View of Stonehenge would be retained for drivers.	N/A	Neutral
SAFETY	Accidents	Scheme would be beneficial in reducing traffic conflicts within Winterbourne Stoke, at Countess Roundabout and at A344 junction. It would increase vehicle conflicts at Longbarrow Crossroads.	Reduction in PIAs over 60 years: Low growth: 1278, High growth: 1416	PVB £51.4m (Low growth) PVB £53.2m (High growth)
	Security	The dual carriageway Winterbourne Stoke Bypass section would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	–	Central Gov. PVC: £87.9m (Low) £83.7m (High)	PVC: £87.9m (Low growth) £83.7m (High growth)
	TEE: Business Users & Transport Providers	–	Business (PVB): £76m (Low) £109.0m (High) Private Sector Providers: Negligible	PVB: £76m (Low growth) £109.0m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1 min (off peak) and 2.5 mins(peak)	PVB: £63.9m (Low growth) £106.4m (High growth)
	Reliability	Scheme would provide some benefits to motorised users by reducing congestion on the A303 and side roads at junctions in Winterbourne Stoke, at Stonehenge Bottom and at Countess roundabout. Closure of A344 would increase journey times between Stonehenge Bottom and Longbarrow Crossroads.	Stress in DM: range from 105% to >125% Stress in DS: <75% in Winterbourne Stoke, >125% between Longbarrow and Stonehenge Bottom	Slight Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Benefits for users of rights-of-way network.	N/A	Neutral
	Access to Transport System	–	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils and would conflict with the policy to improve the A303 from London to the West Country.	N/A	Adverse

Partial Solution Junction Option 4		Description: Northern bypass of Winterbourne Stoke, single carriageway retained past Stonehenge, closure of A344/A303 junction and grade-separation over the A345 at Countess Roundabout.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £90.3 million (Low growth), £86.3 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	Traffic noise levels would reduce slightly at Stonehenge due to closure of A344 junction with A303. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 9 100-200m 31 200-300m 151	Estimated net 32 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : none. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : none. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1274 No. of properties with no change: 408 No. of properties experiencing a deterioration: 1945	Overall assessment score for NO ₂ : -157 } less effect on PM ₁₀ : -38 } property
	Greenhouse Gases	Emissions increase by 8.2 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006) : 122% Route as % Do-Min (2008): 108%
	Landscape	Does little to improve the setting of Stonehenge, maintaining the existing barrier created by the A303. Few adverse visual effects on property. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform. Potential significant adverse effects from borrow pits.	N/A	Moderate Adverse
	Townscape	Beneficial effects on the village of Winterbourne Stoke from reduction in traffic. Avoids ribbon development at Countess Roundabout.	N/A	Moderate Beneficial
	Cultural Heritage	Minor beneficial effects on internationally important setting of Stonehenge and immediately associated monuments within the World Heritage Site. Direct impact on Scheduled linear earthwork and 10 unscheduled sites inside and outside the WHS. Adverse indirect effects on 4 sites in wider parts of the WHS.	Length of new route above ground in WHS: as now Permanent/temporary landtake in WHS: 2.4ha / 0ha	Neutral
	Biodiversity	Overall adverse impacts through construction of Winterbourne Stoke Bypass. Most significant adverse impacts on breeding birds. Other net negative effects on Barn Owls, wintering birds, bats and reptiles and possibly Stone Curlews. No beneficial effects within WHS. Potential for beneficial effects on Great Crested Newts through habitat enhancement, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates and other species within new highway land. Improved protection from pollution events for riverine flora and fauna.	N/A	Slight to Moderate Adverse (potentially improved through off-site agreements and land use change)
	Water Environment	The Partial Solution will have no adverse effect on groundwater or river flow. Road drainage pollution prevention measures proposed would be a significant improvement on the existing A303 drainage system, thus the water environment would be better protected, and this could have a beneficial effect on water quality.	N/A	Neutral
	Physical Fitness	Scheme only partially improves rights-of-way network, in particular severance of rights-of-way near Stonehenge is perpetuated.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Increased driver stress due to greater congestion in the single carriageway section past Stonehenge offset by improvements through Winterbourne Stoke. View of Stonehenge would be retained for drivers.	N/A	Neutral
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1412, High growth: 1634	PVB £57.9m (Low growth) PVB £63.0m (High growth)
	Security	The dual carriageway Winterbourne Stoke Bypass section would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	-	Central Gov. PVC: £90.3m (Low) £86.3m (High)	PVC: £90.3m (Low growth) £86.3m (High growth)
	TEE: Business Users & Transport Providers	-	Business (PVB): £115.3m (Low) £172.1m (High) Private Sector Providers: Negligible	PVB: £115.3m (Low growth) £172.1m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2012) with Low growth: 1.5 min (off peak) and 3 mins (peak)	PVB: £101.1m (Low growth) £168.5m (High growth)
	Reliability	Scheme would provide some benefits to motorised users by reducing congestion on the A303 and side roads at junctions in Winterbourne Stoke, at Stonehenge Bottom and at Countess Roundabout. Closure of A344 would increase journey times between Stonehenge Bottom and Longbarrow Crossroads.	Stress in DM: range from 105% to >125% Stress in DS: <75% in Winterbourne Stoke, >125% between Longbarrow and Stonehenge Bottom	Slight Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Benefits for users of rights-of-way network.	N/A	Neutral
	Access to Transport System	-	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land and soils and would conflict with the policy to improve the A303 from London to the West Country.	N/A	Adverse

National Trust Corridor Route 1		Description: Northern bypass of Winterbourne Stoke, surface route running through Larkhill, north of Durrington Walls and crossing the River Avon south of Bulford. New junction with the A303 east of Folly Bottom.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: £133.4 million (Low growth), £123.6 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	The nearest distance to Stonehenge from the route is approximately 2000 metres giving significant reduction in traffic noise. Noise would increase at Larkhill, Durrington and Bulford. A noticeable increase in traffic noise levels would arise along the Packway. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 129 100-200m 238 200-300m 278	Estimated net 84 additional residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : 69. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : 69. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 1630 No of properties with no change: 113 No. of properties experiencing a deterioration: 1886	Overall assessment score for NO ₂ : 746 } more effect on PM ₁₀ : 258 } property
	Greenhouse Gases	Emissions increase by 21.5 % over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006) : 137% Route as % Do-Min (2008): 122%
	Landscape	Adverse effects on setting of Durrington Walls and Woodhenge. Beneficial effects on the landscape immediately around Stonehenge, and some surrounding monument groups, inc the Winterbourne Stoke group at Longbarrow Crossroads. Uses land disrupted by military development at Larkhill. Adverse effects on River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Moderate Adverse
	Townscape	Significant adverse visual effects and demolition at Larkhill, Durrington and Bulford. Beneficial effects in Winterbourne Stoke from reduction in traffic. Avoids flyover at Countess Roundabout.	Demolition of 30 houses, Officers Mess, Catholic Church and youth club in Larkhill and 1 house in Bulford	Moderate Adverse
	Cultural Heritage	Beneficial effects on internationally important setting of Stonehenge and immediately associated monuments. Severance of Stonehenge from Robin Hood's Ball. Direct impact upon 4 Scheduled Monuments at 3 sites, and 11 other unscheduled sites. Potential adverse indirect effects upon 28 sites inside and outside the WHS, including Durrington Walls and Woodhenge. Surveyed less than for Published Scheme and detailed investigations may identify further remains; so adverse impacts stated here are likely to represent a minimum figure.	Length of new route above ground in WHS: 6.1km Permanent/temporary landtake in WHS: 24.0ha / 0ha	Moderate Adverse
	Biodiversity	Overall adverse impacts anticipated due to the construction of new road through largely undisturbed farmland and new viaduct crossing of River Avon SAC. Most significant adverse impacts on Salisbury Plain SPA, riverine habitats and vegetation, aquatic invertebrates and fish in the River Avon, aquatic vegetation of the River Till Pond, Stone Curlew, Barn Owl, breeding and wintering birds, and potentially Salisbury Plain SPA. Adverse impacts also on Salisbury Plain SAC and SSSI, River Avon SAC and SSSI, habitats, vegetation and fish in River Till, Great Crested Newts, bats, riverine birds of the Avon, bats, valued grasslands, Desmoulin's Whorl Snail and Water Voles in the Avon. Some localised benefits through previously fragmented habitat in WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land and through reduced disturbance to Countess Farm Swamp SNCL. Improved protection from pollution events for riverine flora and fauna.	N/A	Large Adverse with risk of Very Large Adverse (potential for some improvement in this through off-site agreements and land use change)
	Water Environment	Scheme would be designed to have no adverse effect on groundwater or river flow. Road drainage system an improvement on the existing A303 system; this could have a beneficial effect on water quality. However, there would be a risk of contamination of a groundwater Source Protection Zone (Durrington) used for public supply from spillage of hazardous substances outside the control of the drainage system leading to long term shut down of the source.	N/A	Neutral but could be Severe Adverse.
	Physical Fitness	Scheme significantly improves rights-of-way network, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Driver stress reduced from High to Low due to high standard dualling. Loss of view of Stonehenge for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would arise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1546, High growth: 1780	PVB £78.2m (Low growth) PVB £87.4m (High growth)
	Security	The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	–	Central Gov. PVC: £133.4m (Low) £123.6m (High)	PVC: £133.4m (Low growth) £123.6m (High growth)
	TEE: Business Users & Transport Providers	–	Business (PVB): £69.7m (Low) £136.4m (High) Private Sector Providers: Negligible	PVB: £69.7m (Low growth) £136.4m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2013) with Low growth: 1 min (off peak) and 3.5 mins (peak)	PVB: £61.8m (Low growth) £137.1m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation. Increased trip lengths for some local movements.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road & in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Beneficial
	Access to Transport System	–	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'. Beneficial effect on policies protecting important sites and monuments within Stonehenge WHS offset by adverse effects on other key WHS monuments and Listed Buildings.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land but supports the policy to improve the A303 from London to the West Country.	N/A	Beneficial

National Trust Corridor Route 2		Description: Northern bypass of Winterbourne Stoke, surface route running south of Larkhill, north of Durrington Walls and crossing the River Avon south of Bulford. New junction with the A303 at Folly Bottom.	Problems: Stonehenge and the World Heritage Site (WHS) currently suffer from adverse effects of traffic on A303 and A344. There are safety and congestion problems along the A303 and environmental problems through Winterbourne Stoke village. A303 carries 22,400 vpd (10.6% HGV) west of village and 32,100 vpd (8.5% HGV) at Countess Roundabout.	Present Value Cost to Government: 118.9 million (Low growth), 108.3 million (High growth)
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE MEASURE	ASSESSMENT
ENVIRONMENT	Noise	The nearest distance to Stonehenge from the route is approximately 1400m giving significant reduction in traffic noise. Noise would increase at Larkhill, Durrington and Bulford. The bypass would take traffic out of Winterbourne Stoke bringing significant noise benefits to the majority of residents in the village.	Residential properties 0-100m 22 100-200m 169 200-300m 247	Estimated net 22 fewer residents would be annoyed by noise in the design year
	Local Air Quality	NO ₂ : Increase by more than 4 µg/m ³ : 6. Decrease by more than 4 µg/m ³ : 31 PM ₁₀ : Increase by more than 2 µg/m ³ : 6. Decrease by more than 2 µg/m ³ : 31 No breach of an air quality standard. The project is not located within an Air Quality Management Area.	No. of properties experiencing an improvement: 2453 No of properties with no change: 366 No. of properties experiencing a deterioration: 909	Overall assessment score for NO ₂ : -278 } less effect on PM ₁₀ : -82 } property
	Greenhouse Gases	Emissions increase by 25.3% over the extent of the traffic model network (with Scheme versus equivalent year without Scheme). Arising mainly through increased vehicle kilometres over the area.	N/A	CO ₂ emissions: Route as % baseline (2006): 141% Route as % Do-Min (2008): 125%
	Landscape	Adverse effects on setting of Durrington Walls and Woodhenge and poor alignment in the Avon valley landscapes. Beneficial effects on the landscape immediately around Stonehenge and some of the surrounding monument groups, including the Winterbourne Stoke group at Longbarrow Crossroads. Adverse effects on the River Till valley landscape north of Winterbourne Stoke and on Downland landscapes elsewhere. Effects mitigated by earthworks to integrate route into the landform.	N/A	Moderate Adverse
	Townscape	Significant adverse visual effects at Larkhill and Durrington. Beneficial effects in Winterbourne Stoke from reduction in traffic. Avoids flyover at Countess Roundabout.	N/A	Moderate Adverse
	Cultural Heritage	Beneficial effects on internationally important setting of Stonehenge and immediately associated monuments. Severance of Stonehenge from Robin Hood's Ball. Direct impact upon 9 unscheduled sites. Potential adverse indirect effects upon 26 sites inside and outside the WHS, including Durrington Walls and Woodhenge. Surveyed less than the Published Scheme and detailed investigations may identify further remains, so adverse impacts stated here are likely to be a minimum figure.	Length of new route above ground in WHS: 6.2km Permanent/temporary landtake in WHS: 27.0ha / 0ha	Minor Adverse
	Biodiversity	Overall adverse impacts anticipated due to the construction of new road through largely undisturbed farmland and new viaduct crossing of River Avon SAC. Most significant adverse impacts on Salisbury Plain SPA, riverine habitats and vegetation, aquatic invertebrates and fish in the River Avon, aquatic vegetation of the River Till Pond, Stone Curlew, Barn Owl, breeding and wintering birds, and potentially Salisbury Plain SPA. Adverse impacts also to River Avon SAC and SSSI, habitats, vegetation and fish in River Till, Great Crested Newts, bats, riverine birds of the Avon valued grasslands, bats, Desmoulin's Whorl Snail and Water Voles in the Avon. Some localised benefits through previously fragmented habitat in WHS, net creation of species-rich hedges and valued grasslands providing habitat for terrestrial invertebrates, reptiles and other species within new highway land and through reduced disturbance to Countess Farm Swamp SNCI. Improved protection from pollution events for riverine flora and fauna.	N/A	Large Adverse (with potential for some improvement in this through off-site agreements and land use change)
	Water Environment	Scheme would be designed to have no adverse effect on groundwater or river flow. Road drainage system an improvement on the existing A303 system; this could have a beneficial effect on water quality. However, there would be a risk of contamination of a groundwater Source Protection Zone (Durrington) used for public supply from spillage of hazardous substances outside the control of the drainage system leading to long term shut down of the source.	N/A	Neutral but could be Severe Adverse
	Physical Fitness	Scheme significantly improves rights-of-way network, facilitating greater use.	Estimated change in no. of cyclists and pedestrians making journeys of >30 minutes a day: 0	Total no. of people walking/cycling for >30 mins/day: about 130
	Journey Ambience	Driver stress reduced from High to Low due to high standard dualling. Loss of view of Stonehenge for drivers, weighed against significant benefits elsewhere along route. The overall benefit for journey ambience would rise for many users (>20,000 per day) which equates to a large beneficial assessment.	N/A	Large Beneficial
SAFETY	Accidents	Scheme would be beneficial in removing accident clusters at junctions with the A303 and reducing traffic conflicts within Winterbourne Stoke.	Reduction in PIAs over 60 years: Low growth: 1509, High growth: 1688	PVB £78.8m (Low growth) PVB £86.8m (High growth)
	Security	The dual carriageway would provide less stopping potential, with fewer lay-bys, thereby reducing the security risk.	N/A	Slight Beneficial
ECONOMY	Public Accounts	-	Central Gov. PVC: £118.9m (Low) £108.3m (High)	PVC: £118.9m (Low growth) £108.3m (High growth)
	TEE: Business Users & Transport Providers	-	Business (PVB): £61.8m (Low) £116.6m (High) Private Sector Providers: Negligible	PVB: £61.8m (Low growth) £116.6m (High growth)
	Transport Economic Efficiency: Consumers	No significant net impact on non-motorised users (pedestrians, cyclists, equestrians etc).	Expected time savings in Opening Year (2013) with Low growth: 0.5 min (off peak) and 3 mins (peak)	PVB: £55.4m (Low growth) £119.5m (High growth)
	Reliability	Scheme would provide benefits to motorised users by reducing congestion on the A303 and side roads at junctions, thus reducing travel time variation. Increased trip lengths for some local movements.	Stress in DM: range from 105% to >125% Stress in DS: <75% on new road and in Winterbourne Stoke	Moderate Beneficial
	Wider Economic Impacts	The Scheme does not serve or bisect a Designated Regeneration Area.	N/A	N/A
ACCESSIBILITY	Option Values	No modal choice change, road improvements may assist PT (road) options.	N/A	Neutral
	Severance	Substantial benefits for users of rights-of-way network.	N/A	Beneficial
	Access to Transport System	-	N/A	Neutral
INTEGRATION	Transport Interchange	The Scheme has no impact on transport interchange.	N/A	Neutral
	Land Use Policy	A344 closure meets Government commitment at time of WHS inscription. Conflicts with national, county and local policies (including the Stonehenge WHS Management Plan) which support this as an 'exceptional environmental scheme'. Beneficial effect on policies protecting important sites and monuments within Stonehenge WHS offset by adverse effects on other key WHS monuments.	N/A	Adverse
	Other Government Policies	The Scheme would result in some loss of best and most versatile agricultural land but support the policy to improve the A303 from London to the West Country.	N/A	Beneficial