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Re-Consultation 2019 and Preferred Route Announcement Failings

1. Lyminster bypass interdependent benefits miscounted

Background

In the 2017 Arundel Bypass public consultation, the Worthing/Lancing improvement proposal and the A284 Lyminster bypass proposal were not part of the assumed existing network, the "core scenario", under the guidance from National Highways' Transport Planning Group.

In the 2019 re-consultation both of these schemes were included in the core network scenario, because the TPG guidance had changed in January 2018. But in June 2020 Worthing was once more excluded when guidance changed to its third version in three years. As a result, the 2019 re-consultation included both schemes but before the preferred route, Grey, was chosen Worthing had been excluded. Section 5 below tracks this problem in more detail.

The Lyminster scheme was and still is assumed to be in place as part of the Arundel scheme core network scenario, the so-called Do Minimum position. By definition, the benefits ascribed in Do Something to the six options at Arundel must be additional to the benefits provided by the Do Minimum core network. Benefits and costs for the individual schemes that are assumed to be present have had individual benefits taken and their costs are assumed as already incurred; their benefits and costs are "sunk". Leaving costs to one side therefore, were Lyminster to be excluded from the Do Minimum and Do Something scenarios at Arundel, the options' benefits would remain unchanged, because Lyminster's individual benefit had not been included in the first place.

This ignores a significant aspect. Where the interaction of schemes produces a benefit over and above individual scheme benefits, then these *would* show up in the calculation. It is possible that when taken together a number - or a programme - of schemes in a single corridor would interact positively and in combination. They could deliver additional benefit beyond the sum of the schemes' individual benefits (marriage value, added value, synergy value). Future schemes that are forecast to enhance one another's benefits above their individual scheme benefits create a forecasted benefit interdependency.

The additional benefit arising from Arundel and Lyminster's interdependency needs to be included in the computation of benefits for both schemes. But, so as to avoid over-counting or double-counting the interdependent benefit, it needs to be shared between the schemes; this is only the case where the assumed schemes are futuristic and not yet - in fact - paid for, with sunk costs. The whole benefit cannot correctly be ascribed to just one future scheme's benefit, and recorded in its BCR ratio, since the whole benefit will not to be secured by that scheme's cost alone.

National Highways disagrees. After much correspondence the issue was put to the National Audit Office, who investigated. As they phrased it "*Highways England does not allow for the apportioning of synergy benefits between combinations of schemes. It appears there is the potential to include synergy benefits more than once on different schemes which would, in effect, double count these benefits.*"

The NAO was already alive to the problem of interdependent schemes and how National Highways treats such schemes in "whole corridors". Shortly before the Arundel Bypass Further Consultation the NAO in its May 2019 report on the A303 had recommended that DfT and NH should consider how to reflect the following, "*which will be important to demonstrate future value for money of investments along the A303/A358: • clear, measurable objectives for delivering the whole road corridor; • clarity about the most appropriate sequencing of upgrades; • methodologies to analyse and capture the benefits, including those related to heritage benefits. Highways England has started work to develop programme-level benefits; • demonstrate need for investment in subsequent projects along the corridor; and • be transparent about the basis on which it approves projects that contribute to a wider strategic approach. (They) could include these in a programme-level business case.*" The NAO recommendation has a wider significance and is applicable to the "whole corridor" of Worthing-Lancing, Arundel, Fontwell and Chichester whose schemes are being presented individually without a programme-level business case.

The Data

The forecast effect of the Lyminster bypass is superficially clear in that, as an standalone scheme, by 2041, it is expected to boost annual average daily traffic (AADT) on the A284 between the A27 and Littlehampton by just under 10,000 AADT, to some 19,000 AADT; this is the Do Minimum core scenario forecast, broadly supported by both West Sussex CC (as Highway Authority) and National Highways. Traffic volumes completely dominate benefit computations and for clarity will be taken here as total.

When the Grey preferred option is also assumed built, then the forecast for Lyminster rises from its *individual* impact of 10,000 extra vehicles to an *interdependent* impact of 22,000 extra vehicles. The two schemes *in combination* are forecast to add some 12,000 AADT to Lyminster's individual AADT forecast for 2041. This is a major increase and accounts for a minimum 68% share of Grey's traffic volume impact; the interdependent AADT increase of 12,300 AADT with Lyminster compares with a total Grey addition of 18,200 AADT.

Interdependent benefit with Lyminster is a major boost for Grey's benefit to cost ratio. Worthing was included in the 2019 re-consultation at Arundel and the preferred option, Grey, was ascribed BCR 1.95, including "wider economic benefits". When Worthing was excluded, this fell to BCR 1.46. Separately, if Lyminster was excluded instead, the fall was to BCR 1.36. The interdependent, additional 12,000 AADT benefit of Lyminster-with-Grey is thus forecast

to be worth (1.95 - 1.36) a BCR of 0.59. National Highways declined to give a figure for when both Worthing and Lyminster were simultaneously removed and it disputed attempts to calculate this but said that the presumption of a reduction to BCR 0.87 was wrong. This leads to speculation that Worthing and Lyminster were *themselves* interdependent, and provided further synergistic traffic volume increases which should have been deducted when Worthing but not Lyminster was once again assumed not to be built after the 2019 re-consultation; that is not divulged.

Whether 2019's public re-consultation was run fairly, on the basis of Worthing's additional benefits being included, but then privately excluded after the second consultation but before the 2020 choice of Grey is a separate issue. Another separate issue is whether the 2018 guidance used for the 2019 re-consultation at Arundel in 2019 was flawed from the outset prior to its correction in 2020; this too is an undermining of the re-consultation's fairness. But since National Highways then ignored the re-consultation outcome anyway, these points may be both correct and irrelevant (see Section 5 below).

Double Counting Suggested

Grey's forecast *costs* will be unaffected by removing the future Lyminster scheme from the network. But Grey's forecast *benefits* will be reduced by such a removal, along with traffic volume. Removing Lyminster's individual benefit leaves Grey's benefits unchanged, as noted above, and the reduction in Grey's benefit reflects the removal of *additional* benefit only, the interdependent or synergy benefits. The observed reduction in Grey's benefits, BCR 0.59, is the result of removing the extra traffic and its synergy benefit. A simple subtraction of the Do Minimum forecast (representing the assumed future network) from the Do Something forecast (representing the assumed future network with Grey) leaves not only the individual benefit of adding Grey to the network but also *all of the synergy benefit* derived from the presence of both of the two future schemes, Arundel and Lyminster.

The Do Something forecast adds a further 12,000 vehicles, a synergy benefit for which Grey and its costs are only partly responsible. In theory, Lyminster's own scheme benefit forecasts might similarly claim all the synergy benefit from exactly the same traffic volume increase in its own BCR computation, when those are calculated, on the basis that Arundel exists in Lyminster's network. As noted previously, the whole benefit cannot sensibly be ascribed to just one of the two future schemes, a logical view supported by the National Audit Office. For future schemes, some apportionment is required. National Highways makes no such apportionment, but instead credits the whole interdependent synergy benefit to Grey in Grey's BCR, without any cost adjustment. The impact is significant for a marginal scheme, as will become clear later. For example, if one half of the synergy benefit only is ascribed to Grey, its BCR falls to BCR 1.2 or less. In this, any changes to wider economic benefits and other ramifications have been set aside for clarity, as have non AADT features in benefit

calculations, but they will plainly need reintroduction at some point, apportioned as necessary.

Double Counting Denied

National Highways disagrees with this analysis although it did not fully engage on the issue. The DfT meanwhile attempts to justify the National Highways approach; its justifications in its own words are set out in Appendix 1, but can be summarised here to the effect that no interdependent or synergy benefit was included in Grey's appraisal or in its BCR and so there can be no over-counting or double counting. There was no synergy benefit because that is *"a separate issue to the inclusion of schemes within core modelling for the purposes of accurately representing the network at present and in future."* Synergy benefits *"only occur when all schemes are completed and are only assessed at a programme level"*. DfT says there is no synergy or interdependent benefit at Arundel because Lyminster is assumed already to be built into the network, so that any and all benefit flowing from Grey is then entirely attributable to Grey.

Explanation

The explanations here are detailed because the issue is contentious. The issue rests on the hypothetical nature of schemes assumed in the core network, and the schemes' chronologies involved. If a series of several interdependent future schemes are being planned and each, in turn, is treated as Grey has been treated then the entire, multiple, synergy benefit would be re-used, each time and for each scheme, potentially to inflate each individual scheme's BCR and help illogically and falsely to justify each of the several schemes, in turn; it is a point alluded to by the NAO in its A303 recommendation referred to above. If the National Highways approach - that any future but assumed scheme in a network never gives rise to synergy benefit because they are in every sense historic - then such corridor /programme schemes' benefits are *always* over-counted and their inflated BCRs could severely mislead not only the public but also decision-makers. It can have been happening since the 2018 Transport Planning Group guidance came into being and is a dangerous nonsense, although the pragmatism in TASM's letter of 18th October 2021, Appendix 1, is interesting to note.

The dispute was sent to an independent complaints assessor and was not upheld because he could not rule on the technical issues. The National Highways Board Chairman, Chief Executive and DfT Representative received the assessor's report, and they and the offices of the DfT's Director General, Roads, and DfT's Chief Analyst are all aware of this problem. Indeed, the National Audit Office has confirmed that the problem is of course one of which National Highways was already aware, but it proposed that in practise it might be unlikely to influence events. However, the Outline Business Case extracts discussed in section 4 do not support the existence of any such practical safety net in this case. The scheme is below £500 million and therefore it is comprehensively delegated to National Highways by DfT. Similarly, the

economic advisor to TASM's letter proposes that the process pragmatically relies on significant DfT / National Highways interaction, but presumably because of the delegated function such interaction is not reported to have occurred in this particular case and that failure is clearly relevant.

Grey's BCR 1.95 given to the public for the re-consultation fell to BCR 1.46 when Worthing was later removed and fell again to BCR 1.37 after cost changes in 2020. The public was not informed about either reduction. If now halved, the suggested synergy benefit would give Grey BCR 1.1. The margin that makes Grey a Low VfM scheme and not a Poor VfM scheme is wafer-thin. The BCR is almost half of what the public was told, and this is before consequential changes are made and before other issues are considered, in the sections below.

The NAO in its letter of 21st June 2021 refers to sensitivity analysis "to see the impact on the BCR when related schemes are not included." National Highways did this and, interpolating the result into its September 2021 figures it shows the Arundel BCR falling to some 0.8; essentially the sensitivity analysis excluding Lyminster shows an unfundable project.

2. Lyminster Bypass Capacity

Reference is made above to the National Highways 19,000 AADT forecast for the Lyminster bypass in 2041 under the Do Minimum core scenario, something broadly agreed by West Sussex CC as Highway Authority. It is suggested that Lyminster's congestion reference flow is of the order of 23,000 AADT, whereafter congestion will gradually increase to reflect rising traffic volumes. (Congestion reference flow is the AADT at which the road is likely to be 'congested' in peak periods on an average day). The forecast of about 19,000 AADT by 2041 appears to allow for many years of traffic growth after 2041 before the Lyminster bypass ceases to be free-flowing.

National Highways on the other hand has forecast that, with Grey in place, by 2041 the new bypass will be serving 31,500 AADT and not 19,000 AADT. These very different forecasts matter, twice over.

First, over-forecasting: As seen in section 1. above, the 12,000 AADT additional interdependent traffic growth - forecast by National Highways but not by the Highway Authority, West Sussex CC - makes a difference of about BCR 0.59 to the benefits of Grey; National Highways and West Sussex CC used the same consultants, WSP, to obtain these different forecasts for the same road, based on different assumptions (Do Something and Do Minimum). If the over-counting suggestion in section 1 is correct then any over-forecasting by National Highways could have consequences well beyond its quantum, given Arundel's wafer-thin BCR 1.1 which relies upon that over-forecasting.

Second, congestion: With Grey in place and at 31,500 AADT, the Lyminster bypass is forecast by National Highways to be 8,500 AADT above its free-flowing capacity in 2041. It will then have been severely congested for years beforehand, with consequential impact on the functioning of the road itself and also on traffic flows at the Crossbush junction. This congestion throws into doubt the benefits which National Highways attributes to the 12,000 AADT additional traffic volume it is forecasting or over-forecasting. Once again, this would reflect back into the Arundel benefits and negatively impact Grey's BCR 1.1.

Both these issues and their ramifications were ignored by National Highways when in September 2020 it advised DfT that the Grey option had a BCR 1.37 and was Low VfM, not Poor VfM. The most obvious ramification would be a reduction in the traffic-related benefits from wider economic impacts, that currently add some 20% to Grey's benefits. It is concerning that DfT was not fully informed of these aspects when it approved Grey as preferred route rather than one of the more rewarding options.

A further question mark over the Grey BCR, beyond over-counting and over-forecasting traffic volume benefit, is that BCR 1.1 was calculated before "*the significant negative environmental impacts have been included*". The VfM Statement discussed in section 4, is clear that these had not, in Autumn 2020, been reliably monetised. One can only assume that the environmental impacts on BCR 1.1 will also be a significant negative to add to those already mentioned.

3. Corridor Amalgamation and Scheme Impact

National Highways' brief is to improve the traffic flow on the A27, with a series of schemes at Lewes, Chichester, Worthing and Arundel. The Arundel preferred option Grey is some 80% over its 2017 budget at a likely "narrow range upper" cost. But even at that level above budget, its potentially overstated benefits still leave it at the Poor / Low VfM margin.

Benefits will very largely result from increased traffic volumes derived from clearing current congestion. Beyond the several matters already noted, three further points need to be made in regard to forecast traffic volumes and the resultant benefits of Grey:

a. The Lyminster bypass is not in the A27 corridor and does not directly serve east-west traffic. The bypass runs north-south between the A27 and Littlehampton. Littlehampton itself is in the A259 east-west corridor between Worthing and Bognor, a route serving the Sussex coastal plain. West Sussex CC, in its role as Highway Authority, is upgrading the A259 with substantial public money to cater for major residential development and jobs growth in the coastal plain. It forecasts relatively high levels of traffic volume growth on the A259. National Highways, on

the contrary, forecasts *a fall in* A259 traffic volume. This is all of a piece with National Highways' much higher Lyminster bypass forecast than that of West Sussex CC, as in section 2 above. The County Council sees the key local residential and commercial route as the A259, whereas National Highways sees the A27 Arundel bypass as a through route but one that will also nonetheless induce/capture significant local traffic from the A259. The public is asked to fund both the schemes that rely on these competing forecasts.

b. It is a moot point whether Lyminster traffic induced from the A259 should, in any event, be included as a benefit to Grey, whether or not this is contrary to Highway Authority forecasts. National Highways proposes in its forecast that most of the induced traffic from the A259 uses only the Crossbush junction element of the Arundel scheme; it will not use or benefit from the Arundel bypass itself. The Crossbush junction is planned for all options including the least expensive. Nonetheless, the induced local traffic's rather tangential involvement with the Grey option, at the Crossbush junction only, is enough to establish the increased benefits for the dual-carriageway Arundel bypass itself, although little of the Lyminster traffic will in fact use it.

c. The Grey option for the A27 creates two problems where currently only one exists, if National Highways' 2041 forecast of traffic volume increases is correct. At Fontwell, the modestly under-capacity roundabout junctions with the A29 will suffer a major 18,200 AADT increase, 57%, and congestion delays are certain. At Worthing, the 14,600 AADT increase, 37%, will exacerbate the existing severe congestion. No acceptable solution has yet been proposed at Worthing to solve even the serious current congestion and Grey could lead to peak hour gridlock. These traffic volume increases forecast in the wake of Grey are on top of the expected growth if nothing was done at Arundel; at Fontwell that is growth of 12% by 2041 and towards Worthing it is 46% growth by 2041. National Highways' forecasts for asymmetric growth before and after Grey, at the east and west ends of the Arundel scheme, have been questioned but are left unexplained. The huge increases in A27 traffic volumes being forecast under Grey necessarily underpin the still wafer-thin Grey benefit calculations, yet they are not capable of being accommodated by the current network east and west of Arundel.
   The consequences of Grey are road schemes at the two immediately adjacent locations that are not costed into the Arundel bypass, may not be value for money, and may, in the case of Worthing, not be soluble at any sane cost. Both adjacent locations will also suffer uncosted noise and air quality issues. Colloquially, Grey clones the Arundel congestion can and kicks one of them down the road eastwards and the other westwards.

National Highways' Arundel bypass benefits rely on forecasts that see traffic drawn to its Grey option from other roads that in some cases, such as the A259, are already being upgraded to cater for increased traffic based on the Highways Authority forecast. Grey creates major delays just outside its scheme boundaries, and justifies its construction by taking the benefits but then simply ignoring the resultant significant costs thereby incurred. A large question mark hangs over the basis on which National Highway prepared its BCR calculations for the DfT, intensified if one adds these three problems to those mentioned in sections 1 and 2 above.

4. Value for Money Judgement

The DfT's *Value for Money Framework* and *Value for Money Supplementary Guidance on Categories* set out the position. They define the Value for Money category ("VfM") of a proposal in terms of its indicative BCR levels but then consider scheme impacts which, either because they cannot be monetised or because their monetary value is considered highly uncertain, do not form part of the BCR. In this way all risks, uncertainties and impacts are taken into account; VfM is not a calculation like BCR but a judgement made under the headings of economic, social, and environmental elements. The influence of such risks, uncertainties and impacts are considered to ascertain whether they are likely to be sufficiently large to warrant placing the scheme in a different one of the VfM categories i.e. whether the VfM category should be shifted up or down from its indicative BCR category. The indicative BCR and VfM categories are shown in Appendix 2.

National Highways ascribed a BCR 1.95 to the Grey option and judged it as Medium VfM at the 2019 public re-consultation. It did not tell the public but it changed this to BCR 1.37 and Low VfM before the DfT approved Grey as the preferred route. At that level, it is among the least financially effective 5% of approved road schemes; as the DfT table in Appendix 2 makes clear, 95% of schemes that achieve Secretary of State approval are of Medium VfM or better. A host of reasons already given in sections 1. and 2. and 3. above suggest that Grey's BCR 1.37 and Low VfM remain a significant exaggeration. Nonetheless, in its request for DfT's approval to Grey as the preferred route in September 2020, National Highways set out two VfM Statements. One was for 2019's re-consultation and another for the July 2020 request for Grey's approval (see Appendix 3).

In 2019, all six options are shown categorised as Medium VfM, despite Grey being the *only* option having a Medium VfM indicative BCR. The other five options are each less expensive and two are on-line routes (less damaging and intrusive to landscape), but all five have been "switched" down from High VfM to Medium VfM, from the higher category to the lower one, conveniently allowing them not to out-perform the preferred route. Then, in July 2020, all six

options were re-categorised as Low VfM. This time the four cheapest options, a mix of off- and on-line, had Medium VfM indicative BCRs but were "switched" to the Low VfM category. Thus, in 2019 just Grey but in 2020 just Grey and Amber managed to retain their indicative BCR categorisation when the VfM judgements were made, while the remainder were penalised and moved down one VfM category.

It is wholly unclear why the cheaper options, including the online options, should have risks, uncertainties and impacts sufficiently large to warrant placing these schemes in a lower VfM category, while the most expensive and an intrusive option, Grey, retains its indicative BCR ranking throughout. It does so with Large Adverse environmental impacts, a negative which has still yet to be quantified and included in its BCR; it is therefore probable that its Low VfM categorisation actually represents an upgrade, from a Poor VfM indicative BCR.

When asked about the factors that led to these weird and illogical features in its judgements, National Highways said (19th March 2021) "*taking into account all impacts, risk and uncertainty, no option significantly outperforms the other options. All six options are considered to have medium VfM for the core scenario … When undertaking the VfM assessment all options are considered in the same way, there aren't any risks or uncertainties which are included or removed for specific options*." This restatement of its process outcomes failed to explain how it reached its key but skewed judgements.

National Highways refers to Medium VfM here because, although by March 2021 Grey had been reclassified as Low VfM, it was not publicly acknowledged that Grey had become the preferred option after the updating and use of different information to that given the public. To maintain this fiction in responding to the question, National Highways had deliberately to reference the outdated public information.

When the unanswered query was resubmitted, National Highways responded (6th December 2021) that the analyses for the VfM assessments were in the Scheme Assessment Report of October 2020, Appendix F, and in a landscape monetisation note. Appendix F lists the key impacts of the six options with quantitive, distributional and qualitive or monetary assessments but with no analyses or any ranking.

The summary table in the landscape monetisation note, dated July 2019 and used in both the 2019 and 2020 VfM judgements, identifies the negative landscape monetised values for each option. The value range is from minus £147.41m for Cyan, through minus £183.41 for Grey, to minus £292.99m for Crimson. As is clear, these values do not explain, in any way, why for example the least expensive option, Cyan, was downgraded at the same time as Grey, the most expensive, was not downgraded, given that the value benefit to Cyan relative to Grey is a positive £36 million; the asymmetric, skewed, judgements remain unexplained. Further, National Highways says in its Outline Business Case that this landscape monetisation is a method with known limitations and is not robust or reliable and that, for this reason, its

outcomes are excluded from BCR calculation and were, and still are, only built into the VfM judgement itself.

The issue of inconsistent VfM judgements and classifications therefore remains unexplained and unresolved. At different times, options are treated differently and randomly move categories for reasons that National Highways appears unwilling to divulge under repeated questioning. And meanwhile the BCR 1.1 for Grey continues to exclude the monetised negative Landscape Impact feature, provisionally worth some £183 million.

5. Public Re-Consultation and Preferred Route

In the first public consultation in 2017, the preferred option called 5A had a £250m cost and the public was told its benefits were BCR 2.6, a benefit total of £650 million, in *nominal* terms. Less than a year later National Highways said those benefits had fallen to BCR 1.51; benefits had dropped to £375 million. Under a Judicial Review challenge, the Courts were unconvinced that the 2017 consultation had been fair so HE decided to run another consultation in 2019.

In the 2019 re-run of the consultation, National Highways changed its Transport Planning Group guidance and assumed the inclusion of the Worthing scheme in its core scenario as if it had happened, even though National Highways had clearly said the assumed scheme would not be happening. It also included the future Lyminster bypass scheme. The Grey preferred route cost was now up at £455 million (narrow range upper figure), with benefits back up at BCR 1.95, or £887 million, from £375 million. Then, after the second consultation, in summer 2020 the Transport Planning Group changed its guidance again, and Worthing was removed. The benefit of the preferred Grey scheme fell to about BCR 1.37, or about £623 million (National Highways is unwilling to divulge current Most Likely cost; figures were redacted). Once again, the benefits on which the public were consulted turned out to be illusory. The £264 million apparent decrease in nominal benefits, has, over a year later still not been declared to the public. It does not inspire confidence in National Highways computations or its transparency. Instead, the Grey route went forward at the undeclared reduced benefit, subject to the deduction of Landscape Impact once it has been re-calculated. The application by National Highways was approved, in that form, by the DfT.

The Grey option was not - and still has not been - supported by any public consultee body or authority when offered a choice. The 93% of the public who did not support Grey included our Member of Parliament. The public has never had its say on the preferred route on the basis of reasonably correct information and against a budget and set of objectives. Not only were both consultations run on the basis of critical information that needed major correction after the event, but the public's opinion, when offered, was ignored. Public consultation outcomes are

shown to be treated as an irrelevance by National Highways. Grey was quickly approved by DfT, notwithstanding these failings.

One aspect needs clarification. In the 2017 consultation no option was offered that ran outside the South Downs National Park. In the 2019 re-consultation only one was offered - Grey. In its application to the DfT for Grey as preferred route, National Highways said "*Detailed examination of various options over a number of years has identified that there is no single solution that is clearly better or can easily be differentiated from all others; the factors are complex and inter-related; policy constraints are considerable; the stakeholders are polarised and there is no single option which generates a majority of the support for the scheme.*"

This turns out to be not entirely true. As the application to DfT makes clear, both 2017 and 2019 consultations were run on dubious National Highways assumptions. The options offered to the public that ran inside the Park - a total of eight - were options National Highways was advised were legally impossible to deliver and would not be compliant with the National Policy Statement for National Networks. As National Highways reports to the DfT "*The selection of a preferred route has been subject to ongoing legal and Queen's Counsel (QC) advice which … was that GREY is the only deliverable option since:*

1. *it is wholly outside the South Downs National Park; QC advice is that GREY must be the preferred route as there are no foreseeable exceptional circumstances to permit a route inside the SDNP.*
2. *It does not impact on any ancient woodlands.*
3. *It is the furthest away from any bat roosting sites, thus it is the only option that is compliant with NNNPS and has a strong case for gaining the necessary consents.*
4. *It delivers the most safety and journey time reduction benefits since it is the option that provides the longest length of new road.*
5. *It will provide enhanced connectivity within West Sussex and is the first step in creating a much-needed strategic East-West corridor south of the M25.*

Reason 4 is unsubstantiated and is dealt with below, while Reason 5 is true of all options. In respect of Reasons 2 and 3 the statutory environmental bodies including Natural England and very notably, the South Downs National Park all consider that the online options would be least environmentally damaging, as National Highways reports to DfT; these bodies must be acknowledged to speak with authority. Thus, only Reason 1 - that Grey alone runs outside the Park - is unchallengeable, except possibly by the Park itself. The legal position has not changed and was known in 2017.

If the legal advice above is correct, the consultation and re-consultation were run on a flawed basis; out of nine options, only Grey had a realistic chance of planning success, and as the only

option outside the Park it was very easily differentiated from the others. The public would then have been misled twice, at significant cost to the public purse, and with much expertise and professional input from many people being wasted.

The statutory consultee Natural England wrote to National Highways within weeks of the preferred route announcement as follows (*NE's stress retained*): "*the preferred route for the Arundel Bypass presents a highly damaging scheme into this exceptionally important environment … In addition, it may not be possible for Natural England to issue a bat mitigation licence for certain scenarios which could effectively prohibit the scheme proceeding … It is therefore uncertain at present whether Natural England would be able to issue a licence in respect of the proposed route.* ***This issue therefore potentially affects the legal viability of the proposed route and requires urgent resolution*** *… we advise that it is difficult to see how such a damaging scheme can fulfil Policy requirement and HE's objectives to deliver a net gain in biodiversity … In view of the above, we reiterate our concern regarding the viability of pursuing option 5BV1. The scale of the required mitigation for impacts to a National Park and the floodplain of the river Arun, combined with the lack of evidence required to substantiate efficacy with regards to bats is of major significance.*"

Natural England makes plain that this advice had previously been given. National Highways, in its DfT application, was then specifically ignoring that advice in favour of the legal view quoted above. In referencing the Natural England non-compliance risk, National Highways wrote simply that "there was a risk of failure to obtain Natural England licences and that it proposed *"Continual engagement with Natural England to develop an acceptable mitigation package*". It does not draw attention to the conflict of opinion between its legal advice and the position of its statutory consultees. Having discounted Reasons 2 to 5 as above, the conflict is important because either the legal advice is incorrect and other options are possible, even preferable, or else the advice that Grey "is the only deliverable option" is correct, in which case the repeated consultations were an expensive and time-wasting irrelevance. National Highways decided that Grey should be the preferred route, "*primarily but not exclusively because, it is wholly outside the South Downs National Park and therefore the most compliant option with regard to the National Networks National Planning Statement*".

6. Journey Time Improvement and Rat Running

In the National Highway's A27 Arundel Bypass Preferred Route Announcement, October 2020, the scheme objectives are listed and the reasons for choosing Grey are given.

The announcement text makes clear that improved journey times and ending rat-running are important. It states, for Grey, that "*As well as removing high traffic flows from Arundel town*

centre, the route will cater for forecast traffic volumes while also offering the greatest time savings compared to today's travel times". And *"congestion around Arundel also leads to problems elsewhere as drivers try to avoid tailbacks by using local roads that aren't designed for large numbers of vehicles by reducing congestion in the area … the scheme will improve journeys between Brighton and Portsmouth which is great news for local people and the regional economy."*

The statement that the Brighton to Portsmouth journey will be "*improved*", with Grey offering "*the greatest time savings*", means there will be shorter journey times on this trip in the wake of the scheme. References to rat-running also indicate that journeys will be faster between Brighton and Portsmouth once Grey is delivered; the journey must be faster via the A27 than via the rat runs.

National Highway's own example trip, Brighton to Portsmouth includes existing delay hotspots at Chichester, Worthing and to a much lesser degree at Fontwell too. The public rejected the Worthing scheme as inadequate in 2017. National Highways confirmed that the proposed scheme was not to proceed but it also announced that a more comprehensive scheme was unaffordable. For four years the Worthing situation has been in stasis. The Grey option increases the A27's AADT at the western edge of Worthing by 37%, and thus, while Grey takes the benefit from the additional traffic, it will lead to even worse problems in Worthing, perhaps insoluble ones.

In similar fashion, to the west of Arundel National Highways forecasts Grey will increase traffic volumes by 57% AADT at Fontwell, which indicates congestion will worsen significantly at this A29 / A27 double roundabout, doglegged, intersection with traffic lights. Just beyond the Grey scheme's boundaries, therefore, major delays are created or made far worse by Grey, to both east and west. Further afield, Chichester, like Worthing, may prove an insoluble problem at a viable cost, one exacerbated by the additional A27 traffic volumes that Grey is forecast to create. As identified in section 3c above, this leaves an Arundel Bypass scheme attracting sufficient traffic to perhaps pay for itself, but the cost of that extra traffic is the creation or intensification of problems elsewhere in the A27 traffic corridor.

The piecemeal approach to this traffic corridor that separates its individual scheme elements enables National Highways to obscure the individual BCRs for each element's solution (section 1), to conceal the real corridor journey time benefits for each element's solution (section 6), and to ignore the full consequential costs imposed by each element's solution.

National Highways was asked during both the 2017 and 2019 consultations what the wider corridor journey time savings would be. It could not or would not provide answers and cannot or will not, even now, justify its statements about the Brighton to Portsmouth journey time improvement that it has claimed publicly. The assertions remain unsupported.

The same is true about rat running. For example, in the case of the A29/B2139/A283 through the South Downs National Park, with the resulting noise and air quality benefits National Highways claims, its assertions about faster journey times ending rat running are presently merely unsupported contentions. The public has been given no data. A yet further request for the requisite data, this time under FoI terms, is currently outstanding.

7. Summary

The assumed presence of the Lyminster bypass proposal, under the short-lived National Highways 2018 guidance, is essential to the Arundel Bypass scheme's BCR and its VfM; exclusion of Lyminster, or even of the Littlehampton traffic, destroys Grey's viability.

It is arguable that in 2018 and in 2020 National Highways' Transport Planning Group issued incompetent guidance for its teams to follow, and misled itself about DfT and Treasury Green Book intentions. It is arguable that it deliberately over-counted benefits under its helpful and freshly-minted guidance, which was subsequently investigated and ruled on by the NAO.

The National Highways forecasting places traffic on the Lyminster bypass with which that road will not be able to cope, but claims the benefits as if it will cope. In the main, that traffic in any event uses just the Crossbush junction to reach Littlehampton, north-south; it will not use the planned eight kilometres of new Arundel Bypass dual carriageway that will run east-west.

Grey has been judged much more benignly than all the other options, relatively, when it comes to VfM; it is the only option not to be penalised by a classification reduction from its indicative BCR ranking. Compared with the least expensive, on-line, option Grey brings 20% more benefit (largely more traffic) but costs more than 50% extra, even before its greater off-line negative landscape costs are incorporated. National Highways has repeatedly failed to justify its VfM process in any way.

Journey time improvements and rat running advantages are claimed, but no data is given to substantiate these wider corridor claims. It seems likely that the delays that Grey will cause by attracting more traffic to the A27 will even prove counter-productive, with new or extra congestion caused elsewhere. Yet if this traffic was not attracted by the Arundel scheme, then potentially the scheme would not be viable.

The public has been treated with distain. It was first given poor-quality data on which to comment and so had to be reconsulted. When re-consulted, not a single statutory consultee supported Grey. Among the public, 93% did not support Grey. But National Highways chose Grey. This was despite the fact that Grey's published BCR 1.95 was inflated by 42% by allowing Worthing to be counted in, but after the re-consultation - without telling consultees or the public - National Highways removed Worthing and then preferred Grey at its much lower - but

still exaggerated - BCR 1.37. And then, finally, we learn belatedly that National Highways believed that no option but Grey would be legally secure. It might be thought that the entire consultation process was a charade.

The sustainability and environmental damage caused by the Arundel Grey option is probably as ill-considered by National Highways as have been the traffic forecasting and benefit issues outlined in sections 1 to 6 above. Advice and requests from Natural England, the Environment Agency, Forestry Commission and South Downs National Park Authority have been openly ignored. Once calculated, negative landscape impact will be deducted from Grey's BCR of 1.1 or less, and then accounted for properly in its VfM. Meanwhile the legal advice that National Highways relied on and quoted in support of its application to the DfT - that Grey is "*the only deliverable option*" - was shown in section 5 to be suspect advice.

The Grey option is way over the scheme budget and at very best is only marginally viable, despite all six options having been publicly billed in 2019 by National Highways as "*viable and affordable*". Given the tight financial situation of Grey, references to expected or requested mitigation may need to be disregarded. However, no up-to-date present-day costs have been published since 2019. It seems from National Highways' redactions that commercial confidentiality will now prevent any reworked costings being given. Therefore, as a result, there cannot be any transparent analysis of BCR and VfM. Along with public consultation, transparency and openness are relegated to become irrelevancies.

The application for Grey's preferred route choice should not have been accepted and approved by DfT for many reasons, some key ones being set out in the sections above; DfT was perhaps severely misled by National Highways, and its approval was improperly obtained. Even at National Highways' exaggerated BCR, of all six options Grey has the lowest return on cost (subject still to reduction to account for a large adverse landscape impact) and arguably it has the lowest value for money.

From the correspondence, it is evident that some DfT departments have trouble in understanding their own guidance, and they experienced problems in giving effect to that guidance when approving Grey as preferred route. In consequence the DfT approval is highly questionable. It is rooted in misunderstanding and misinformation revealed above. The selection of Grey as preferred route has not passed correctly through the required process, and by extension the Statutory Consultation on the Grey route is without proper foundation.

Appendix 1

Double Counting Description by NAO and Rebuttal by DfT

Per Lee-Anne Murray, Director, Transport Value for Money

National Audit Office 14th June 2021

"*Based on our understanding of the modelling process it appears that DfT's current approach, which is applied by Highways England, does not allow for the apportioning of synergy benefits between combinations of schemes. It appears there is the potential to include synergy benefits more than once on different schemes which would, in effect, double count these benefits. However, Highways England and DfT are aware of these issues with the modelling approach, which is one of the reasons that they usually perform sensitivity analysis to see the impact on the BCR when related schemes are not included [1].*"

Per Matthew Clark, Economic Advisor

DfT Road Investment Strategy Delivery, 22nd July 2021

"*… the National Audit Office … response refers to 'synergy benefits and states that "there is the potential to include synergy benefits more than once on different schemes which would, in effect, double count these benefits." Synergy benefits are the benefits coming from two or more schemes being completed and interacting with each other, over and above the addition of the benefits of the individual schemes. … this is a separate issue to the inclusion of schemes within core modelling for the purposes of accurately representing the network at present and in future [2]. … if a scheme is expected to be 'more than likely' in place as of the scheme in question's opening year, it is recommended that the scheme is included in the core scenario, in both the do-minimum and do-something. This ensures that the modelled network best reflects the future composition of the network, subject to uncertainty. This does not imply a double-counting of scheme benefits, as the benefits of the scheme in question are derived from the difference between the do-minimum and the do-something modelling scenarios [3]. … In conclusion it is not correct that DfT appraisal guidance allows double-counting of scheme benefits, nor do we accept that there has been double-counting in the appraisal of the A27 Arundel scheme. There were also no synergy benefits applied to the appraisal for A27 Arundel scheme [4].*"

Per Matthew Clark, Economic Advisor

DfT Road Investment Strategy Delivery, 10th August 2021

"*The NAO letter said there could be double counting if "synergy benefits" were included in a scheme's BCR. As stated in our response dated 22nd July, 'this is a separate issue to the*

inclusion of schemes within core modelling for the purposes of accurately representing the network at present and in future' [2]. The Arundel scheme assessment included no synergy benefits and therefore no double counting [4]."

Per Stuart Allen, Economic Advisor: Cost Benefit Analysis Lead

DfT Transport Appraisal and Strategic Modelling, 18th October 2021

"Whether and how to apportion benefits from nearby schemes depend on a range of factors, from timescales and size to dependency and a more general understanding of planning in the locality in question. The cases where programmatic appraisal have to be applied are, by their very nature, usually large and complex schemes. For this reason, TAG is not explicit on the treatment of 'synergy' benefits, or which schemes should and should not be defined as sitting within each modelled scenario (do-minimum/do-something) in cases of programmatic appraisal. Instead, these cases are usually agreed between the DfT and the scheme promoter on an individual basis, as the appraisal of each programme of schemes should reflect the factors mentioned above (timescales, size etc.). These decisions follow the principles set out for defining the core scenario, as recommended in 3.1.1 of TAG Unit M4."

Per Catherine Mottram, Deputy Head

DfT Roads, Economics and Modelling and Evaluation Team, 11th October 2021

"TAG guidance in unit M4 … is how the Department and National Highways avoid double counting benefits when appraising individual schemes which interact [5]. So, while this approach does not explain how double counting synergy benefits is avoided, the information was provided as you had asked about appraising interacting schemes. … synergy benefits stem from interdependencies between schemes [6]. They only occur when all schemes are completed[3] and are only assessed at a programme level[4]. Therefore, they cannot be attributed to any individual scheme [7] and thus they are not included in a standalone scheme's BCR [8] and therefore there is no double counting. It follows for the A27, as per the above, that no synergy benefits are considered in the scheme's BCR."

Appendix 2

Value for Money and Benefit Cost Ratio

The Value for Money Framework's para 5.6 links BCR and VfM. Here the DfT's six Value for Money standard categories are listed and the DfT notes carefully that "*relevant indicative monetised and/or non-monetised impacts must also be considered and may result in a final value for money category different to that which is implied solely by the BCR*".

VfM Category	**Implied by**
Very High	BCR greater than or equal to 4
High	BCR between 2 and 4
Medium	BCR between 1.5 and 2
Low	BCR between 1 and 1.5
Poor	BCR between 0 and 1
Very Poor	BCR less than or equal to 0

Total PVC and proportion of spending per VfM category for projects approved

As the DfT table below, published December 2020 and covering 2015 - 19, makes clear, almost no Poor VfM schemes are approved by DfT and very few Low VfM schemes are approved.

VfM category	2015 proportion of approved spending	2016 proportion of approved spending	2017 proportion of approved spending	2018 proportion of approved spending	2019 proportion of approved spending	2015 PVC (£m)	2016 PVC (£m)	2017 PVC (£m)	2018 PVC (£m)	2019 PVC (£m)
Poor	0%	0%	1%	0%	1%	0	1	5	0	6
Low	17%	0%	2%	0%	6%	196	0	15	5	38
Medium	3%	5%	19%	43%	13%	36	65	129	661	83
High	20%	86%	28%	57%	70%	233	1038	191	871	445
Very high	59%	9%	49%	0%	10%	681	103	332	0	66
High and very high	80%	95%	78%	57%	80%	914	1,141	523	871	511
Total	100%	100%	100%	100%	100%	**1,146**	**1,207**	**672**	**1,533**	**638**

Appendix 3

Scheme Outline Business Case extract pp 68-73

Comprising Annex C and D:

Value for Money Statements 2019 and 2020

Analytical Assurance Statement

Value for Money Statement		
Value for Money Category	**Option 1v5**	**Medium**
	Option 1v9	**Medium**
	Option 3v1	**Medium**
	Option 4/5Av1	**Medium**
	Option 4/5Av2	**Medium**
	Option 5Bv1	**Medium**
RIS 1: 107 A27 Arundel Bypass		
PCF Stage: 2 (repeat)		
Summary		

Analytical Assurance for the modelling is currently rated RED.

The A27 Arundel Bypass is one of three Road Investment Strategy (RIS) schemes along the A27. One of the other schemes - the A27 Worthing and Lancing Improvements – is under review. The core transport modelling for this scheme includes Worthing to Lancing in the baseline.

Highways England has decided to undertake a further consultation to give the public and stakeholders another opportunity to comment on the options proposed for the scheme. All Six options are considered at this stage and will be part of the Public Consultation.

All options return a net benefit in terms of economic performance (journey time and operating cost benefits, accident benefits, construction delay costs, greenhouse gases, air quality, noise and wider economic benefits).

However, the BCRs excludes the significant negative environmental impacts which have not been reliably monetised but are included in the VfM assessment. These environmental impacts are particularly significant because the scheme is located within the South Downs National Park. They include landscape impacts, biodiversity and the historic environment. Although an indicative money value has been placed on landscape it is not robust enough to be incorporated into the BCR, but stands to demonstrate that the scheme is expected to deliver medium VfM. Option 1v5 is likely to present best VfM because it avoids the most significant negative impacts on the national park (it retains the current route, keeping costs down and giving maximum journey time savings, and minimises additional land requirements reducing impact on the environment).

Options 4/5Av1 and v2 and Option 5Bv1 are have a lower impact on the South Downs National Park and only option 5Bv1 is entirely outside the national park, but they are significantly more expensive and do not deliver a significant increase in benefits although they do have the highest economic PVB (compared to option 1v5, option 5Bv1 has 46% higher costs but only delivers 20% increased benefits). In addition, the land take required from new routes implies a greater impact on the landscape.

Previous VfM Status: Not directly comparable due to additional options considered and change in do-minimum. Both costs and benefits have changed for all options.			
Last VfM: Low	Date: 21/11/18	Costs: ☒ N/a	Benefits: ☒ N/a

Change:			

Key Impacts

	Positive Contributions	Negative Contributions
Quantified	Travel time savings Accident savings Improvements to air quality Agglomeration	Vehicle operating costs Greenhouse gases Increased noise Delays during construction Large adverse impact on landscape (not in BCR)
Un-quantified	Improvements to journey time reliability Journey quality Severance Accessibility and physical activity	Very large adverse impact on biodiversity due to the location of wildlife sites and habitat loss. Large adverse impact on the historic environment

	Option 1v5	Option 1v9	Option 3v1	Option 4/5Av1	Option 4/5Av2	Option 5Bv1
Landscape Impact	Moderate Adverse	Moderate Adverse	Very Large Adverse	Large Adverse	Large Adverse	Large Adverse
PVC (£m)	132.99	129.65	161.61	174.82	183.06	193.97
PVB (£m)	**286.76**	**266.8**	**350.24**	**352.66**	**377.19**	**378.47**
BCR (adjusted)	2.16	2.06	2.17	2.02	2.06	1.956
VfM	Medium	Medium	medium	Medium	Medium	medium

Key Assumptions/Sensitivities

There is a high degree of uncertainty on the landscape impacts of all options so the BCR is not reflectively of the value for money. A more robust approach to assessing the impacts on natural heritage is required in order to refine the VfM assessment.
Analytical Assurance for the modelling is currently rated RED.
It is assumed that the significant limitations to the analytical approach used for option 1 recorded in previous Analytical Assurance Statements have been corrected. A sensitivity test removes Worthing to Lancing from the baseline modelling has been undertaken which indicates should that scheme be paused the VfM ratings for this scheme would fall to Low for all options.

Author	[redacted]	**Date:**	25/07/2019

Value for Money Statement		
Value for Money Category	Option 1v5 (Cyan)	Low
	Option 1v9 (Beige)	Low
	Option 3v1 (Crimson)	Low
	Option 4/5Av1 (Magenta)	Low
	Option 4/5Av2 (Amber)	Low
	Option 5Bv1 (Grey)	Low
RIS 1: 107 A27 Arundel Bypass		
PCF Stage: 2 (repeat)		
Summary		

The A27 Arundel Bypass is one of three Road Investment Strategy (RIS) schemes along the A27. One of the other schemes - the A27 Worthing and Lancing Improvements – was confirmed as a RIS 2 scheme in March 2020. The scheme is currently under review with key stakeholders to take forward in RIS2. This VfM statement is based on a sensitivity test which does not include Worthing and Lancing in the baseline.

Highways England decided to undertake a further consultation to give the public and stakeholders another opportunity to comment on the options proposed for the scheme. All
Six options which were considered in this stage were presented as a part of the 2019 Public Consultation. Option 5Bv1 (Grey) has been identified as the preferred route, with the PRA planned for October.

All options return a net benefit in terms of economic performance (journey time and operating cost benefits, accident benefits, construction delay costs, greenhouse gases, air quality, noise and wider economic benefits).

However, the BCRs excludes the significant negative environmental impacts which have not been reliably monetised but are included in the VfM assessment. These environmental impacts are particularly significant because the options are located within or in close proximity to the South Downs National Park. They include landscape impacts, biodiversity and the historic environment. Although an indicative money value has been placed on landscape it is not robust enough to be incorporated into the BCR, but stands to demonstrate that the scheme is expected to deliver low VfM.

Option 1v5 is likely to present best VfM because it avoids the most significant negative impacts on the national park (it retains the current route, keeping costs down and giving maximum journey time savings, and minimises additional land requirements reducing impact on the environment). Options 4/5Av1 and v2 and Option 5Bv1 have a lower impact on the South Downs National Park and only option 5Bv1 is entirely outside the national park, but they are significantly more expensive and do not deliver a significant increase in benefits although they do have the highest economic PVB (compared to option 1v5, option 5Bv1 has 46% higher costs but only delivers 20% increased benefits). In addition, the land take required from new routes implies a greater impact on the landscape.

Previous VfM Status:			
Last VfM: Low Change: No change	Date: 23/07/2020	Costs: ↑ Revised cost estimate for 5Bv1.	Benefits: ☒ N/a

Key Impacts

	Positive Contributions	Negative Contributions
Quantified	Travel time savings Accident savings Improvements to air quality Agglomeration	Vehicle operating costs Greenhouse gases Increased noise Delays during construction Large adverse impact on landscape (not in BCR)
Un-[illegible]	Improvements to journey time reliability Journey quality Severance Accessibility and physical activity	Very large adverse impact on biodiversity due to the location of wildlife sites and habitat loss. Large adverse impact on the historic environment

	Option 1v5 (Cyan)	Option 1v9 (Beige)	Option 3v1 (Crimson)	Option 4/5Av1 (Magenta)	Option 4/5Av2 (Amber)	Option 5Bv1 (Grey)
Landscape Impact	Moderate Adverse	Moderate Adverse	Very Large Adverse	Large Adverse	Large Adverse	Large Adverse
PVC (£m)	132.99	129.65	161.61	174.82	183.06	206.46
PVB (£m)	236.40	207.70	286.56	268.87	266.69	282.91
BCR (adjusted)	1.78	1.60	1.77	1.54	1.46	1.37
VfM	Low	Low	Low	Low	Low	Low

Key Assumptions/Sensitivities

There is a high degree of uncertainty on the landscape impacts of all options so the BCR is not reflectively of the value for money. A more robust approach to assessing the impacts on natural heritage is required in order to refine the VfM assessment.

The provided BCRs and VfM category is based on a sensitivity test that removes Worthing to Lancing from the baseline modelling. If the A27 Worthing to Lancing proceed in its original form the VfM would raise to medium.

Only option 5Bv1 got a revised cost estimate in September 2020, the other options cost estimates are from August 2019.

The Government has increased its ambition around carbon reduction in the UK and this may in future increase the values of carbon used in scheme appraisal. The analysis above is based on the "central" values of carbon, using the "high" values the options would all remain Low value for money.

Author	[redacted]	Date:	08/09/2020

Analytical Assurance Statement: 3rd Line of Defence

Appropriateness	Compliance	Uncertainty	Fit for Purpose
Green	Amber/Red	Amber	Amber

Project Lead
Analytic Lead
Subject Matter
Assurer(s)

[redacted]

Lead Assurer

[redacted]

Traffic - The options considered in the PCF documentation are: Option 1 v5 & v9; Option 3 v1; Option 4/5A v1 & v2; and Option 5B v1. The traffic and economic analysis undertaken on these options has utilised standard modelling procedures, no updates have been made to the previous PCF Stage 2 base model. Most of data used in the model is now 5 years old and the journey time data is approaching 6 years old. While this is acceptable it is a point to note. Forecast years have been amended to align with the current programme (2026 opening year) and a 2051 forecast year is available for economic analysis. The November 18 data book and RTF18 have been utilised as has TEMPro v7.2.

The 2018 Data book and TUBA 1.9.12 are no longer current from a core perspective, (Data book 1.13.1 is the most recent), and there's no Data book 1.14 sensitivity test either. (Though NTEM 7.2 and RTF18 remain current).

In March, (AASv7) according to TPG guidance at that time, A27 Worthing Lancing was included in the core scenario. However, at that time, that scheme was paused, so a sensitivity test had been undertaken without the scheme included. A table has been produced, (see March TPG AASv7 input), that shows the impact of this on the scheme options. The value for money of schemes is impacted at a similar scale across the options and while it changes the ranking of the schemes to some degree, the two best performing options remain so.

As of the date of this AASv8, status-wise: Worthing/Lancing has been "un-paused" – it is back in RIS2 as a committed RP2 scheme [i.e. not just a RIS3 Pipeline], but it is still pre-PRA and is likely to start at stage 0 again. However, TPG's updated forecasting guidance, (June 2020), now reflects that HE schemes should be included in the future year core forecasts once they are in a RIS and post Preferred Route Announcement. (Previously just being in a RIS was sufficient). So, we should now be excluding Worthing/Lancing from the core. But, we do have a sensitivity test reported which excludes this – as above.

Economic appraisal has been undertaken without A27 Worthing Lancing, but this is limited to TUBA analysis. All other benefits are assumed to be the same proportion as the core scenario. A similar sensitivity test has been undertaken excluding Lyminster bypass. With respect to the economics, TUBA 1.9.12 and the Nov 2018 data book have been used in the appraisal. Low & optimistic scenarios were undertaken. The assurance for the traffic modelling and appraisal is rated Amber.

NB: The time span between AASv7 in March 2020 and this AASv8, dated September 2020 is 6 months. Should TPG be asked for a further Lead AAS across this Stage 2, based upon this current appraisal, (i.e. without taking account of the above missing updates above), then the fit for purpose rating would be set to Amber/Red as below for this Stage 2. It would be very difficult to maintain the traffic assurance rating at Amber, as this current Amber is well within the lower amber 'band' than previously due to above – i.e. extremely close to Amber/Red. Basically, since March, whilst the 'analysis hasn't changed the assurance has changed, and any further delay will mean an Amber/Red rating.

Environment – Overall, the standard assessment processes have been followed, as required for Stage 2, with environmental impacts, on the whole, being appropriately considered and reflected in the documentation. The issues regarding the rushed programme and inconsistencies/ typos highlighted previously should have been addressed through the latest reviews and revisions of the EAR, although these have not been reviewed by SES Environment Group. The EAR highlights a number of significant environmental sensitivities that are applicable across all route options, and which conflict with the NNNPS. These include, but are not limited to, the presence of Ancient Woodland, South Downs National Park (SDNP) and Scheduled Monuments. On the whole, these are accurately addressed in the EAR. In terms of the SDNP Special Qualities appendix (to the EAR), there is a concern that this does not sufficiently link to the special qualities and take on board SDNP's comments. Draft ASTs were commented on previously, including highlighting areas where they did not comply with WebTAG Unit A3. The issues regarding non-compliance have been addressed by WSP. Overall the ASTs are considered adequate at this stage. Overall, the rating for the environmental elements of the AAS are considered to be Green, subject to the quality issues identified previously being appropriately addressed.

Commercial - Central estimates were produced and released on 4th September 2020. For each scheme option, a central estimate has been produced, using the most likely point estimate of the assured option range estimate. Overall, it is considered that the assurance rating for these estimates is Amber.

Overall fitness for purpose is AMBER: Decision makers should be aware that there is risk inherent in using the analysis; however, the analysis remains strong enough to influence the decision.

The subject of this Analytic Assurance Statement is part of a staged decision- making process: Yes
If "Yes", the section below must be completed.

If the scope and quality of the analysis does not change during the next stage, the outcome of the next stage would be:

Appropriateness	Compliance	Uncertainty	Fit for Purpose
Green/Amber	Amber/Red	Amber/Red	Amber/Red

Author: [redacted] **CEng. MICE. Senior Transport Planner, Transport Planning Group, TPG, Chief Analyst's Division, Strategy and Planning Directorate, Highways England. 9th September 2020.**