

Campaign for Better Transport

WRITTEN REPRESENTATION

HIGHWAYS ENGLAND'S RESPONSE

1. Suppressed demand and forecasting

1.1 Suppressed demand

1.1.1 Highways England states that:

Highways England notes that CBT offers no evidence or data to support its claims and no adequate reasons (and again no evidence) explaining why the work done by Highways England is unsatisfactory. The expectation of suppressed demand is no more than supposition.¹

And

This Examination provides this opportunity for that public scrutiny to take place. However, it is not appropriate for unsubstantiated critiques of a model to be made without any supporting evidence, analysis or modelling to counter the detailed modelling work that has been undertaken as part of the assessment of the Scheme.²

1.1.2 Campaign for Better Transport accepts that it has not to date been able to fund a detailed critique of Highways England's modelling. As a small charity, we are not in a position to match Highways England's resources from the public purse.

Highways England Comment

1. Highways England notes Campaign for Better Transport's ("CBT") charitable status and will continue to respond to matters raised by CBT through the forum of the Examination proceedings.

¹ Paragraph 1.21, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

² Paragraph 1.41, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

1.1.3 *However, we do not accept that we have not provided any evidence on this issue as we have submitted a number of references in previous submissions highlighting that modelling is often not accurate and historically (as this is only how things can be accurately assessed) there is often an underestimate of induced traffic in modelling.*

Highways England Comment

2. Notwithstanding CBT's assertion, it remains the case that it has not submitted evidence. It has sought to use analogy to suggest that Highways England has not carried out modelling correctly. Nevertheless, Highways England agrees that the issue of induced traffic is a consideration to be accounted for in the assessment of schemes. Following the publication in 1994 of the report on the subject by the Standing Advisory Committee on Trunk Road Assessment ("SACTRA")³, it has become standard practice to allow for induced traffic in the modelling and appraisal of all but the simplest of improvement schemes. Accordingly, Highways England has used a model of the variable demand type (as recommended by SACTRA) to ensure any induced traffic response to the Scheme is captured and taken account of in its assessments. This ensures that induced traffic is considered by Highways England as a general proposition and in relation to this Scheme.

3. In respect of the claim that induced traffic is often underestimated in modelling, the evidence presented to SACTRA led the committee to conclude (paragraph 5.15) that the forecasts for on-line improvements (such as the Scheme) were the best, i.e. had the least level of discrepancy between forecasts and subsequently observed flows. In its conclusions, SACTRA identified (paragraph 11.23) three circumstances where the consideration of induced traffic was most important (and, as such could have most effect on the assessment):
 - a. Where the network is operating or is expected to operate close to capacity;
 - b. Where the elasticity of demand with respect to travel costs is high; and
 - c. Where the implementation of a scheme causes large changes in travel costs.

³ Trunk Roads and the Generation of Traffic, The Department of Transport, December 1994

4. Clearly, the first criterion applies in the case of the Scheme. However, the demand elasticity values used in the model are within the normal range indicated by TAG and the change in travel costs brought about by the Scheme, although beneficial, are not large-scale. Against these considerations, Highways England has concluded that its assessment of a low level of induced traffic, as estimated through the variable demand model, can reasonably be concluded not to affect the assessment materially.

1.1.4 In response to the statement that the expectation of suppressed demand is no more than supposition, while this technically might be correct, it is our professional judgement that given the geography, the economic buoyancy of the area and the pressure on that road network, that there will be suppressed demand for many transport movements. This would apply to various modes and not just to car travel.

Highways England Comment

5. Irrespective of the particular characteristics of the area, the modelling undertaken already takes account of constraints on travel and therefore suppressed demand. The variable demand model used by Highways England to assess the Scheme is of the multi-modal type, which allows additional capacity created in the transport network to be taken up by whichever is the most appropriate mode. The model includes growth factors taken from National Trip End Model that are specific to the south-east region, together with the substantial growth aspirations of the various local authorities. Therefore, Highways England maintains that it has taken adequate account of the particular circumstances underlying local travel demand.

1.2 Air Pollution

1.2.1 Highways England states:

Highways England has already made allowance for higher emissions than the prescribed standards through the use of LTTE6 as set in IAN 170/12 v3.⁴

And

⁴ Paragraph 2.61, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

Even considering if Euro 6/VI does not achieve their emission standards they will still be lower than Euro 4/IV and 5/V vehicle emissions. Consequently therefore it is reasonable to assume some level of reduction in emissions in the future and not an almost static trend as described by LTTE6. In adopting the LTTE6 approach, Highways England has still allowed for a greater level of uncertainty in future performance to enable the management of risk.⁵

1.2.2 What Highways England has not said in these statements is that IAN 170/12 v3 allows for a choice of long term trend to be used and that Highways England has chosen the more optimistic of these trends. It is worth noting that IAN 170/21 v3 states:

The annual projection factors are provided by the HA between 2008 and 2030. The long term trend is assumed to be linear as there is no observed long term impact of emissions from Euro VI vehicles on air quality monitoring trends available at this time. As such the precautionary principal is applied to future projections. Beyond 2017 the projections are expected to be conservative, but as more information becomes available the long term trend projections will be reviewed and this IAN updated accordingly.⁶

1.2.3 It is clear from this statement that there is a level of uncertainty about future projections, particularly beyond 2017. While it states that these are addressed in a conservative way, this was written before the recent exposure of emissions cheating by Volkswagen (VW) and the revelation that many diesels are emitting more pollution than they are supposed to.

1.2.4 Therefore, Highways England has still not explained why the more conservative Long Term Trend (LTT) line from IAN 170/12 v3 was not used. It has attempted to claim that the LTT line is an almost static trend, which makes it sound as though it does not allow for any improvement in air quality when it does.

1.2.5 The line actually falls in a linear way allowing for a steady improvement year on year and the gradient of this line is the same as the gradient of LTT_{E6} after 2026. What Highways England has failed to do is justify how the rapid improvement seen in LTT_{E6} after 2014 is

⁵ Paragraph 2.10.2, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

⁶ Section 3.1, page 6, [IAN 170/12 v3](#) ⁶

Paragraph 3.3.2, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

justified given everything that we now know and the evidence presented by expert witnesses to this Examination.

1.2.6 *It is also worth noting that IAN 170/21 v3 is uncertain about future trends beyond 2017, when LTT_{E6} is still showing a fairly rapid improvement in pollution levels. At the risk of repetition, given all we now know, this must raise questions as to how sound these projections are and we would urge the Examination Authority to have the air pollution data rerun using the more conservative LTT line.*

Highways England Comment

6. Highways England's position is as noted in CBT's representation above: the LTT curve does not include the anticipated benefits of Euro 6/VI technology, which in the opening year of the Scheme is projected to be a significant component of the vehicle fleet with the associated reductions in emissions. Therefore, it would be inappropriate to use an LTT curve in the Scheme assessment which is not capable of reflecting reductions in emissions and associated pollutant concentrations.
7. As such, Highways England considers that the LTT projection is overly pessimistic, and would not represent a realistic worst case scenario as is required by law. As noted in Advice Note Nine: Rochdale Envelope, page 8 *“The EIA should assess the likely worst case in terms of the potential variations within a project but the detailed design of the project and the variations should not vary beyond these limits so that the proposals as built would not have been assessed, thereby rendering the ES inadequate.”*
8. Interim Advice Note 170/12 v3 also includes two less conservative projections (EFT and E6Only) which have not been used because the LTT_{E6} curve has been preferred. The use of any curve to project future air quality within the assessment for the Scheme, which is more conservative than the Defra (EFT) projections, already goes beyond the requirement of the NN NPS paragraph 5.8 which states that:

“Defra publishes future national projections of air quality based on evidence of future emissions, traffic and vehicle fleet. Projections are updated as the evidence

base changes. Applicant's assessment should be consistent with this but may include more detailed modelling to demonstrate local impacts".

9. The Defra emission rates (EFT) already include an element of correction for the differences in performance between the laboratory and the real world. The emission rates included within the Defra tools are based on the COPERT emissions database, which is based on real world testing for Euro 5/V and earlier models. The emission rates included in the EFT are assumed to be 2.7 to 3 times higher than the laboratory testing rates for Euro 6, as set out by the Parliamentary Under Secretary of State for Environment and Rural Affairs in evidence to the Environment, Food and Rural Affairs Committee on 03 February 2016.

10. In addition to the use of the LTT_{E6} approach to future emission rates, the air quality assessment also includes a model verification step to correct for gaps between modelled and measured concentrations which will include the gap between laboratory testing and real world performance of vehicles.

2 Active Travel Severance and amenity

2.1.1 Highways England acknowledges that subways are not a preferred type of crossing 6 and that extending them would have a slight negative impact 7. However, it fails to acknowledge that increasing traffic on the surrounding road network will increase severance and reduce local amenity and attractiveness of walking and cycling 8. It hides behind a threshold for reappraising severance as opposed to the fact that increasing traffic levels will increase severance and reduce amenity, even if this is considered only slight.

Highways England Comment

11. Highways England continues to disagree with CBT's unsubstantiated supposition. Across the wider study area used to assess the effects of the Scheme, reductions in traffic flows on a significant number of local roads are forecast, which decreases rather than increases severance. For clarity, Highways England's assessment does also show that the Scheme will lead to increases in traffic flows on some roads:

⁷ Paragraph 3.3.3, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

⁸ Chapter 4 of Volume 11, Section 3, Part 8 of the Design Manual for Roads and Bridges (Pedestrians and other Community Effects) states that amenity is the relative pleasantness of a journey

generally those linking directly to the M4. These are other motorways or high-standard A-class roads whose primary function is to carry commensurate types and volumes of traffic. Whilst these roads may in some cases be used by people for walking or cycling, the roads are unlikely to have a high amenity value to those users due to the high volumes of traffic. Highways England disagrees that low levels of change in traffic flows materially reduce the available gaps to cross the road or degrade the local amenity significantly (or at all). The issue is when, and at what level, of increase in traffic are people dissuaded from walking and cycling. This assessment is provided for in DMRB, which is the methodology Highways England has already adopted in assessing severance and amenity.

12. Qualitative assessments of amenity and community severance are suggested in DMRB. Chapter 7 of Volume 11, Section 3, Part 8 of the DMRB (Pedestrians and other Community Effects) considers Relief from Existing Severance. This reference provides some insight into the scale of change needed to bring about slight, moderate or substantial levels of relief. In urban areas, reductions in traffic flows of c.30% and in rural areas, 60-75% is required to bring about just a slight level of relief. Based on the assessment of the effects of the Scheme using the traffic forecasts, where there is an increase in flow forecast on a feeder road to the M4, it is less than 10%. Accordingly, it was concluded that whilst there was an impact on severance and amenity in these instances, it was not of sufficient magnitude to require mitigation. Conversely, at those locations where there is forecast to be a reduction in traffic flow, the reduction is not of sufficient magnitude as to claim a slight level of relief to severance and amenity. Nevertheless, whilst not significant in assessment terms, there is still potential for a positive impact.

2.1.2 Given that the capacity of the M4 is being expanded by 25-33%, depending on which section is examined, this is going to lead to additional traffic on the surrounding road network, regardless of the disagreement of how great that will be. It will therefore have a negative impact on severance and amenity

Highways England Comment

13. Whilst it is acknowledged that the Scheme will result in traffic flows increasing on roads directly feeding the M4 junctions, the Scheme will result in reductions in flow

on many other roads. Accordingly, there will be a negative impact on severance and amenity on some roads and a positive impact on other road. On that basis, the assertion in CBT's representation does not follow, and the methodological assessment in DMRB should be preferred.

2.1.3 *Highways England states:*

*No historical severance issues in connection with the section of the M4 affected by the Scheme have been identified.*⁹¹⁰

2.1.4 *Yet, exactly what studies did Highways England commission to review this issue? It would appear that most of the analysis carried out was examining the impact of the changes, not whether there were any historical issues. Indeed the Environmental Statement wouldn't be expected to highlight the original and ongoing impacts of the existing road. That is not its purpose.*

Highways England Comment

14. Highways England has undertaken extensive consultation with statutory bodies, local authorities and parish councils, together with wider public consultation. These consultations have proved informative and consultees have provided Highways England with the benefit of local knowledge and insight into issues of concern, as reported in the Consultation Report (Application Document Reference 5-1, APP-042).

15. Two further points may be made here:

- a. First, the Scheme is not intended or required to mitigate or resolve existing issues on the M4 motorway. The objective of the Scheme is to deliver the extra capacity needed on this key transport route. In doing so, Highways England is committed to ensuring that the significant impacts of the Scheme itself will be mitigated.

⁹ Paragraph 3.7.1, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

¹⁰ Paragraph 3.3.4, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

- b. Second, the Environmental Impact Assessment, reported in the Environmental Statement used the existing situation on the M4 as the baseline. The impact of the Scheme was then assessed using the baseline as a starting point. On that basis, it is clear that in order to carry out the environmental assessment, Highways England had to understand the baseline. Consequently, existing severance effects were a legitimate subject of inquiry.

2.1.5 *Highways England describes what we are asking for as ‘nice to haves’ without providing any proof for this claim. The environmental and other funds established within the Roads Investment Strategy (RIS) were not done as ‘nice to haves’ but out of recognition that historically, the construction of the strategic roads network had had quite a few unnecessary negative impacts on the environment and people’s quality of life. As such, significant funds were allocated to addressing these issues.*

The executive summary of the RIS states that:

We want to see the company delivering better environmental outcomes and helping cyclists, walkers, and other vulnerable users of the network at the same as time as achieving real efficiency and keeping the network in good condition.¹¹

Highways England Comment

16. The Strategic Roads Networks refers to more than just motorways on which walkers and cyclists are not permitted. In addition to 1,865 miles of motorway, Highways England is responsible for a network of 2,571 miles of other trunk roads. Much of this non-motorway trunk road network is in rural areas and shared by walkers and cyclists. It is on these parts of its network that Highways England has the opportunity within its powers to achieve the aims set out in its strategy and policy documents.

17. As has previously been noted by Highways England, non-motorised users are prevented from using the motorway by law. Obviously, provision cannot be made on the motorway.

¹¹ Page 9, Executive Summary, Roads Investment Strategy: Strategic Vision, December 2014 ¹² Page 2, [Highways England Cycling Strategy](#) ¹³ Page 2, [Highways England Cycling Strategy](#) ¹⁴ Page 3, [Highways England Cycling Strategy](#)

2.1.6 *The key words here are ‘at the same time as’, indicating that the Government expects Highways England to deliver improvements for pedestrians and cyclists in schemes like this, not just ignore them or describe them as ‘nice to haves’.*

Highways England Comment

18. Further to Highways England's response to 2.1.5 above, Highways England is a custodian of public money. Highways England must ensure that the costs of its schemes and their benefits are not disproportionate to the benefits provided in order to ensure that a scheme represents a good use of public money. For this reason, the cost implications of achieving every objective can be prohibitive for some schemes.

19. The Scheme will improve the nearby noise environment, as set out in the Enhanced Noise Mitigation Study Report. This represents a better environmental outcome, and will be achieved whilst increasing the capacity, efficiency and condition of the M4 Junctions 3 to 12. Further, even though the Scheme is a motorway scheme, Highways England proposes to enhance the provision for pedestrians and cyclists, where appropriate, at six of the bridges which will be replaced as a result of the Scheme. For example, at Old Slade Lane, Highways England has agreed with Buckinghamshire County Council to establish the standards required to enable Old Slade Lane Overbridge to be made suitable for vehicles, bicycles, pedestrians, and horse riders, within the Scheme design and Order limits. The proposed design is suitable for shared space, with 1.8m high parapets, which are suitable for equestrians, and a 5m width, as shown in Drawing 11 of the Engineering and Design Report, Appendix F Overbridges (Application Reference Document 7.4, APP-120).

2.1.7 *Further to this, Highways England’s own Cycling Strategy makes a number of positive statements about Highways England’s approach to cycling which does not appear to be mirrored in this scheme. For example in its vision it states that:*

In particular, we want to contribute to a connected, comfortable, attractive and high quality cycling network, suitable and safe for use by people of all ages and abilities.¹²

Highways England Comment

20. Highways England's Cycling Strategy's 'our cycling vision' statement states as follows:

“Our vision for cycling builds upon our overall aim which is to deliver a high performing strategic road network and the best possible service to road users.

In particular, we want to contribute to a connected, comfortable, attractive and high quality cycling network, suitable and safe for use by people of all ages and abilities.”

21. Where cycle routes cross the M4 motorway, Highways England will ensure that cyclists continue to enjoy safe passage across the network during construction and operation of the Scheme.

2.1.8 *While it also describes the benefits:*

Cycling has many advantages over other types of transport, especially its environmental benefits; it causes negligible climate change, air pollution and noise. Increased levels of cycling can deliver a wide range of benefits to society, the economy and the environment.

Despite the benefits of cycling, many barriers, both real and perceived exist, including a lack of facilities, incoherent networks and a lack of information on where facilities do exist.

Cycling can play an important role in achieving our overall ambitions for the road network...¹³

2.1.9 *It also states that Highways England will:*

Update our design standards to raise the level of provision for cycling on our network...

Improve engagement and communication with our road users, in particular cyclists, to ensure our plans meet their needs.

14

Ensure that wider network investments incorporate cycling facilities...

2.1.10 There is obviously more, but these quotes help to give a sense that what we have asked for are in line with both Government and Highways England policies. They are really the minimum required of Highways England to fulfil its responsibilities and to conform to its own policies.

Highways England Comment

22. As set out above, the general point is that the Scheme is a motorway enhancement scheme. There is no provision for cyclists to access the M4. Indeed, they are prevented from doing so by operation of law. The policies raised by CBT are applicable to wider Strategic Roads Network, where proper provision for cycling and investment for cycling facilities can be made.

23. However, as noted in response to paragraph 2.1.6 above, Highways England nevertheless proposes to improve cycling facilities to the extent possible.

2.2 Cycling *Examining what Highways England claims are improvements for cycling (and other active travel) shows that in reality, Highways England has taken a do minimum, if not a do nothing, approach and focussed on managing its risk, rather than creating a better and more attractive infrastructure for cyclists and others. It is predominantly increasing the height of the bridge parapets from 1m high to 1.4m or 1.8m high¹². However, this offers little benefit to cyclists who use these facilities anyway. They are unlikely to notice much difference and it certainly isn't going to encourage more cycling.*

¹² Paragraphs 3.7.2 – 3.11.1, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

Highways England Comment

24. Highways England is including provisions within the Scheme to make a positive contribution to active travel. For example, the replacement of existing overbridges, as listed below, includes enhanced parapet provision to accommodate cycle or equestrian usages:

- a. Monkey Island Lane (1.4m high) – Accommodates a national cycle route;
- b. Oldway Lane (1.8m high) – Accommodates cycle route and a bridleway;
- c. Wood Lane (1.8m high) - Accommodates a bridleway;
- d. Datchet Road (1.4m high) – Accommodates a cycle route;
- e. Recreation Ground (1.4m high) – Accommodates a national cycle route; and
- f. Old Slade Lane (1.8m high) – Accommodates a bridleway.

25. Highways England considers that these enhancements will be of benefit to cyclists, and other non-motorised users. In addition to this safety benefit, further provision on the Oldway Lane, Wood Lane and Old Slade Lane bridges is being made for the safe passage of equestrians where the crossing forms part of a bridleway.

2.2.2 *The only other mention of cycle infrastructure is the mention of cycle / footways alongside Wood Lane and Datchet Road, which appear no more than replacing like with like, i.e. no improvement over the existing facilities.*

Highways England Comment

26. Highways England will ensure that cyclists continue to enjoy safe passage across the M4 during construction and operation of the Scheme. This will entail the provision of temporary facilities during construction where it is necessary to divert existing routes on a temporary basis, and the provision of permanent replacement facilities at those locations where existing routes are diverted on to replacement bridges to ensure connections are maintained at all times.

27. As noted above, Highways England will provide enhanced parapet provision where practicable, which is an improvement over the existing facility.

2.2.3 *Taking a number of the mentioned bridges in turn, our comments are as follows:*

2.2.3.1 *Monkey Island Lane – the plans¹³ show a 2 metre shared path but if this is like the existing path with bollards placed within it, it is far too narrow (a 2 metre path is narrow in any case). If there are upstanding obstacles on a path, a minimum of 2.5 metre width should be sought, to allow cyclists to pass each other safely. The existing bollards are presumably there to stop parking on the path and will therefore need to be installed on the new bridge. Unless this has already been allowed for when planning the width of the new path, it will end up compromised and too narrow. Equally, if bollards are not planned and then have to be retro-fitted, the path will end up compromised and too narrow. Signage also needs improving.*

Highways England Comment

28. None of the existing side roads or associated overbridges have a dedicated cycleway within the verge provisions. Given this existing situation, proposals to re-align or alter side roads and replace overbridges as part of the Scheme are based on shared use by pedestrians, cyclists and, in some cases, equestrians in line with the highway design standards. Providing for dedicated facilities for the separate usages would significantly increase costs and require the acquisition of additional lands as both the bridges and earthworks would need to be substantially wider. This would not be required to address an existing problem or to mitigate the significant effects of the Scheme. The Non-Motorised User Survey carried out by Highways England in 2015 showed that cyclist usage of the overbridges over 12 hour periods is not particularly high and thus dedicated provisions to accommodate such movements would be difficult to justify as cost effective.

2.2.3.2 *Oldway Lane – this appears to be purely raising the parapets on an existing bridge already used as part of a bridleway network. It will not change the usage of the route.*

¹³ [Side Road Plan & Profile Drawings](#), Sheet 2 Of 13 Monkey Island Lane
¹⁷ [Side Road Plan & Profile Drawings](#), Sheet 3 Of 13 Monkey Island Lane

Highways England Comment

29. A Non-Motorised User Survey was undertaken in the summer of 2015 to assess the usages of a number of the existing bridges over the M4 motorway. The results applicable to Oldway Lane are shown below. Highways England does not consider that a change of usage of the route is required, or indeed is a matter for the Scheme, and adequate provision has been made for the replacement of the existing bridge and the associated side road improvement improvements.

<i>Date</i>	<i>Adult</i>	<i>Child</i>	<i>School Child</i>	<i>Cyclist</i>	<i>Equestrian</i>	<i>Total</i>
<i>Wed 3 June 2015</i>	54	0	1	7	0	34
<i>Sat 6 June 2015</i>	82	2	0	34	0	118

2.2.3.3 *Wood Lane – apart from concern that a 2m shared path is quite narrow, this road has a 20mph speed limit with speed bumps. The raising of the parapets will have no impact on its use and if a segregated facility is being provided for pedestrians and cyclists it should be wide enough so that they can pass each other without fear of snagging on the parapet or wobbling into the traffic.*

Highways England Comment

30. Highways England considers that this point is addressed in its response to paragraph 2.2.3.1 above.

2.2.3.4 *Datchet Road – seems to be replacing like with like as above for Wood Lane, except that here a 3 metre wide path is being provided, which begs the question: why is this not being done for other shared paths?*

Highways England Comment

31. The replacement overbridge at Datchet Road will be constructed on the basis of Highways England's over-arching approach, which is to replace affected overbridges on a like for like basis. The existing layout at Datchet Road already has a wide hardened verge beyond the bridge itself, which is not the case elsewhere, and it is for this reason that a 3 metre wide path will be constructed.

2.2.3.5 Recreation ground – purely raising the parapet height will not impact on use.

Highways England Comment

32. A Non-Motorised User Survey was undertaken in the summer of 2015 to assess the usages of a number of the existing bridges over the M4 motorway. The results applicable to the Recreation Ground overbridge are shown below. As can be seen, the pedestrian and cyclist usage is relatively high and Highways England does not consider that a change of usage of the route is required, or indeed is a matter for the Scheme. Furthermore, adequate provision has been made for the replacement of the existing bridge and the associated side road improvement improvements.

<i>Date</i>	<i>Adult</i>	<i>Child</i>	<i>School Child</i>	<i>Cyclist</i>	<i>Equestrian</i>	<i>Total</i>
<i>Wed 3 June 2015</i>	<i>211</i>	<i>5</i>	<i>475</i>	<i>142</i>	<i>0</i>	<i>833</i>
<i>Sat 6 June 2015</i>	<i>189</i>	<i>12</i>	<i>2</i>	<i>135</i>	<i>0</i>	<i>338</i>

33. None of the existing side roads or associated overbridges has a dedicated cycleway within the verge provisions.

2.2.3.6 Old Slade Hill – purely raising the parapet height will not impact on use.

Highways England Comment

34. A Non-Motorised User Survey was undertaken in the summer of 2015 to assess the usages of a number of the existing bridges over the motorway. The results applicable to Old Slade Lane are shown below. As can be seen the pedestrian and cyclist usage is relatively low and Highways England does not consider that a change of usage of the route is required, or indeed is a matter for the Scheme, and adequate provision has been made for the replacement of the existing bridge and the associated side road improvement improvements. The improvement to the parapet heights of the new Old Slade Lane overbridge are an enhancement to the existing situation – see Highways England's response 2.2.4 below.

<i>Date</i>	<i>Adult</i>	<i>Child</i>	<i>School Child</i>	<i>Cyclist</i>	<i>Equestrian</i>	<i>Total</i>
<i>Wed 3 June 2015</i>	45	4	2	7	0	58
<i>Sat 6 June 2015</i>	35	0	0	9	0	44

2.2.3.7 Marsh Lane – the plans¹⁷ say that the new path is a cycle/footway but this appears an error as the existing route does not appear to have shared use here and Highways England does not mention that it is raising the parapet height on this route, which is surprising given it has listed this route¹⁴ as being important for non-motorised users (NMUs).

Highways England Comment

35. A Non-Motorised User Survey was undertaken in the summer of 2015 to assess the usages of a number of the existing bridges over the motorway.

¹⁴ Paragraph 3.7.2, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

The results applicable to Marsh Lane are shown below. As can be seen the pedestrian and cyclist usage is low and Highways England does not consider that a change of usage of the route is required, or indeed is a matter for the Scheme, and adequate provision has been made for the replacement of the existing bridge and the associated side road improvement improvements.

<i>Date</i>	<i>Adult</i>	<i>Child</i>	<i>School Child</i>	<i>Cyclist</i>	<i>Equestrian</i>	<i>Total</i>
<i>Wed 3 June 2015</i>	34	0	0	106	0	140
<i>Sat 6 June 2015</i>	35	0	0	270	0	305

36. None of the existing side roads or associated overbridges has a dedicated cycleway within the verge provisions.

2.2.3.8 Lake End Road – this is not a crossing mentioned by Highways England but is the type of instance where it should be taking action and future proofing its design. There are already a number of important cycle links to the south of this bridge, with a shared path coming up from them alongside Lake End Road up to Ashford Road, just short of the order limits. If this shared path was extended over the M4 to Hunterscombe Lane South, it then offers the opportunity of linking up to Cippenham to the east with a proper tarmacked surface. Again improving the footbridge over the M4 spur would aid this, but this is also just outside the order limits. Another issue with the plans are that the existing junctions onto Lake End Road are already quite large with large splays. The new design appears to create even bigger junctions, particularly for Hunterscombe Lane South, which will encourage cars to travel faster around the junctions where often the greatest risk for pedestrians and cyclists is. This appears unnecessary given that the road sign at the Hunterscombe Lane South junction says the road is unsuitable for HGVs. Therefore there seems no reason not to take the opportunity to tighten the junction dimensions and improve road safety.

Highways England Comment

37. Highways England's over-arching approach to replacing the existing overbridges affected by the Scheme is set out in Highways England's responses above. Works outside the Order limits are beyond the scope of the Scheme, and for that reason, Highways England has not considered the works suggested by CBT.

38. In relation to the junction arrangement at Huntercombe Lane South, the Scheme's design is based on Highways England's design standards. However, the junction arrangement will be reviewed during detailed design, and changes to junction dimensions may be discussed with the local authority.

2.2.4 *Overall, Highways England might have provided a long response, but there is no evidence within it to show that they have enhanced active travel and nothing to show how they are following Government and their own policies to enhance the level of cycle provision.*

Highways England Comment

39. Highways England disagrees with CBT's assertion. Highways England's responses above provide evidence which confirms that Highways England has, where practicable, enhanced active travel. The evidence also demonstrates that Highways England has complied with Government and Highways England's policies concerning cycling so far as possible on a motorway improvement scheme.

3 Traffic Safety

3.1 Safety claims

3.1.1 *Highways England makes a bold claim that All Lane Running (ALR) 'reduces the risk of technology failure'¹⁵ but provides no evidence to back this up. From what we have been told by Highways England, the safety of ALR is wholly dependent on technology and continuous monitoring of the road network. If there is an incident on an ALR motorway, it is just as dependent on camera and signal reliability, if not more so, than Hard Shoulder Running (HSR).*

¹⁵ Paragraph 6.4.2.3, Highways England response to Campaign for Better Transport's Written Representation (Deadline V)

40. In the response to CBT at Deadline V, Highways England noted that ALR reduces the risk of technology failure (where there would be impact on the provision of additional capacity and therefore subsequent impact on journey times) and risk to the workforce. The response at Deadline V provided examples of "technology failure" which means that the hard shoulder cannot be opened to traffic on occasion.
41. On an HSR scheme there is a safety requirement that all hard shoulder lane signals must be available before the hard shoulder can be opened to traffic as a running lane. This is to ensure that there is clear guidance to road users as to whether the hard shoulder is open to traffic or not. When a hard shoulder lane signal develops a critical technology fault and cannot display a signal aspect (e.g. reduced speed limit such as 50 or 60 mph) then the hard shoulder cannot be opened for that link. This technology and safety requirement is not present on an ALR scheme.
42. In addition, there is a further safety requirement that the control room operator must be able to view the full length of hard shoulder prior to opening. Should a hard shoulder camera develop a fault where the operator cannot view a section of hard shoulder (either through another hard shoulder camera or a Pan-Tilt-Zoom camera) then the operator is not allowed to open the hard shoulder to traffic. Consequently, Highways England's experience from the initial HSR schemes shows that they have a greater dependency on technology than that on ALR schemes. On occasions when there are technology failures, this would mean that the hard shoulder could not be opened to traffic when required for congestion management. This is not present on an ALR scheme.
43. By contrast, for an ALR scheme, the provision of the additional capacity resulting from the conversion of the hard shoulder into a running lane does not rely on the availability of the hard shoulder lane signals or hard shoulder cameras. The reduced number of signals and cameras also reduces the maintenance and repair liability and so reduces the risk to the maintenance workforce. For these reasons, there is a reduced dependency on technology in an ALR scheme, and a reduction in the risk of the additional capacity not being available compared to an HSR scheme.

44. Highways England has undertaken studies to identify the reasons for the hard shoulder not being opened. Project TSAR (Technology Systems Availability Review) was established to improve the availability of the hard shoulder for use as a traffic lane within Smart Motorway schemes. The project considered the M42 between Junctions 3a and 7 as this was the first operational Smart Motorway. It adopted an evidence based approach to understand the level of availability that is currently achieved, and the impact of this. It sought to understand the root causes of non-availability and to identify how hard shoulder availability could be improved.
45. During the Project TSAR study period (October 2013 to March 2014), the actual availability for each link averaged approximately 94%. This means that typically there were 22 peak periods per month when it was not possible to open the hard shoulder on one link within the M42 section. This affected approximately 200,000 vehicles per month, and indicates a risk that an inconsistent level of availability could lead to driver uncertainty and potential misuse of the hard shoulder. Overall, the project concluded that it was not possible to open the hard shoulder on 6% of the occasions when it was required. Of this 6%, technology issues accounted for the hard shoulder being unavailable on 3.1% of the occasions when it was required.
46. Notwithstanding the response above, to the extent that it is relevant, Highways England agrees that if there is an incident on an ALR section, it is just as dependent on camera and signal reliability in order to safely manage traffic.

3.1.2 *If the camera fails on an HSR road, the hard shoulder is not opened, leaving a safe space for vehicles. If a camera fails on an ALR road, there is the potential to miss an incident with the consequential safety implications. Equally, if a signal develops a fault on ALR this must also have safety implications and in terms of repairing broken equipment, the risks can be no greater for HSR than ALR.*

Highways England Comment

47. If a camera fail on an HSR scheme then the hard shoulder cannot be opened safely for that link. When not in use as a running lane, the hard shoulder is available for emergency use on an HSR scheme. However, the response from Highways England

to the Transport Select Committee notes that the hard shoulder on a traditional motorway is not a safe environment – between 2010 and 2014, 8% of the fatal collisions on all motorways happened on hard shoulders. Therefore, even though the hard shoulder is available to stop in an emergency, it would be safer for the motorist to reach an Emergency Refuge Area or leave the network before stopping.

48. If a CCTV camera were to become unavailable on an ALR scheme, then other technology will have been installed to mitigate the risk. This includes the queue protection system which will automatically set reduced speed limits should a vehicle stop in a live lane (for example as a result of a breakdown) and traffic begins to queue. The queue protection system alerts control room operators and also provides them with location information, meaning that even if a camera was unavailable, the operator would be able to despatch a resource accordingly. The operator may also be alerted through a 999 call, emergency roadside telephone call or a call from an on-road Traffic Officer patrol about a vehicle stopped in a live lane.

49. On an ALR scheme, a camera failure would not prevent the road from continue to operate as normal, meaning less potential confusion. As explained above, the queue protection system can automatically set reduced speed limits in the event of a broken down vehicle which will alert control room operators.

3.1.3 Overall, we believe that it is premature to make claims about ALR safety when there is very little documented evidence on this and we are still awaiting the results of the M25 first year study. Recent submissions to the House of Commons Transport Committee’s All Lane Running Inquiry from the RAC and Transport Planning Society, for example, expressed reservations on safety and it is clear that for many the case is far from proven.

Highways England Comment

50. An ‘Outline note on the All Lane Running Monitoring Report’ (January 2016) was submitted by Highways England at Deadline VI. This Outline Note accompanied the issue of the M25 J23-27 Twelve Month Evaluation Report which was made available on 01 February 2016. The Outline Note stated that conclusive results will come with 3 years of safety data. However, the data relating to the first 12 months of ALR

shows that the M25 scheme is safe. The performance of ALR will continue to be monitored over the coming years as the statistical significance of the results continues to increase.

51. The Outline Note provided an overview of the output from the M25 J23-27 scheme following one year of operation. The Note considered how the M25 J23-27 scheme has performed and assessed whether there was any impact from the monitoring that should affect the M4 Scheme.

52. Highways England is aware that the RAC and the Transport Planning Society have expressed reservations on safety, and has reviewed the submissions of these organisations to the Transport Select Committee ALR inquiry. Highways England provided a response to the committee following the issue of the M25 J23-27 Twelve Month Evaluation Report, which confirmed that the M25 J23-27 scheme's monitoring output showed that the M25 J23-27 scheme was generally performing in line with expectations. The results show that the overall safety performance over the initial 12 month period has not worsened and the indications are that the objectives of the M25 J23-27 scheme are being achieved.