TOWN & COUNTRY PLANNING ACT 1990: SECTION 78

TOWN AND COUNTRY PLANNING ACT 1990 – SECTION 78 APPEAL MADE BY THE MINISTRY OF JUSTICE ON LAND ADJACENT TO HMP GARTH AND HMP WYMOTT, LEYLAND, LANCASHIRE

Re-Opened Inquiry

Appeal Ref: APP/D2320/W/22/3295556
LPA Ref: 21/01028/OUTMAJ

REBUTTAL PROOF OF EVIDENCE OF G EVES BSc CEng MICE MCIHT

March 2024

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APPENDICES

1. INTRODUCTION

1.1. My name is Graham Eves. My details, experience and instructions are set out in my proof of evidence dated August 2023 (Doc O22) which I originally prepared for the re-opened Inquiry. This rebuttal has been prepared to address the Appellant's November 2023 Rebuttal (Doc M9), and more particularly the Appellant's February 2024 Addendum evidence (Doc M10).

1.2. The evidence that I have prepared, and provide, for this re-opened Inquiry in this rebuttal proof of evidence is true and has been prepared, and is given in accordance with, the guidance of my professional institutions and I confirm that the opinions expressed are my true and professional opinions irrespective of by whom I am instructed.

2. THE ADDENDUM PROPOSALS

2.1. The Appellant's original proposal provided for the introduction of traffic signals at the A581/Ulnes Walton Lane junction, but then, following the Secretary of State's interim decision letter, it proposed the conversion of that existing "priority" junction to that of a mini-roundabout which was to be provided within the confines of the existing public highway.

2.2. That remained the understanding of all other parties to this Inquiry until an Addendum Highways Proof of Evidence (Doc M10) was submitted by the Appellant on 26th February 2024. That Addendum identified that the Appellant had secured control of land adjacent to the junction, and was therefore now inviting the Inspector/SoS to consider an alternative, enlarged, mini roundabout scheme using this additional land (whilst, at the same time appearing to submit that the earlier, smaller, roundabout would be acceptable).

3. THE ISSUES FOR THIS REBUTTAL

3.1. Some 3 years have passed since the Appellant's original traffic data was obtained, and given that passage of time, and the concerns I expressed on behalf of UWAG in my initial evidence, it is surprising that Mr Yeates has not taken the opportunity to comprehensively update the traffic data, provide his own speed surveys, physically check visibility provision at the Moss Lane junction and review the "Assessment Years" used in his analysis of the operation of the various junctions.

3.2. This rebuttal therefore considers the Appellant's updated proposals for the A581/Ulnes Walton Lane junction and also responds to some of the matters set out by Mr Yeates in his August 2023 PoE (Doc M6) and his November 2023 rebuttal (Doc M9).

4. THE APPELLANTS UPDATED PROPOSALS

Ulnes Walton Lane/A581 Southport Road Junction

(i) The Road Safety Audit

4.1. The proposals for a mini roundabout at the A581/ Ulnes Walton Lane junction, as proposed by the Appellant in March 2023 ("the original mini-roundabout"), were flawed for the reasons set out in my 2023 Proof of Evidence (Doc O22). The appellant must have been concerned that this proposal was flawed as negotiations were undertaken with landowners adjacent to the junction to secure additional land to enable a larger mini roundabout to be provided – that scheme ("the new mini-roundabout") was only revealed in Mr Yeates' Addendum (Doc M10) at the end of February 2024 – albeit that this new arrangement is put forward only as a possible alternative (and not a replacement) for the March/August 2023 proposal. The updated proposals (as now proposed in Doc M10) appear to have been developed following consideration of the concerns raised in respect of that earlier scheme.

4.2. Mr Yeates has provided details of a Stage 1 Road Safety Audit for the new mini-roundabout (Doc 10A Appendix M) which he summarises at Table 3-1 of his Addendum (Doc 10). However, in that summary he fails to include the caveat at the beginning of VIA's recommendation that the proposed traffic calming measures are fundamental to keeping drivers at low speeds – it is also noteworthy that VIA do not suggest that such measure will reduce personal injury accidents, only those with the potential for high severity!

4.3. VIA go on to identify a range of potential issues and difficulties which will need to be addressed in the design of these fundamental traffic calming measures (i.e., they have not yet been addressed and remain 'at large').

4.4. The list of "difficulties and issues" identified in this Audit is extensive, and, without a more detailed design, significant doubts exist as to whether they can be adequately addressed.

4.5. It is not sufficient for the Appellant to state that the recommendations outlined in the Road Safety Audit will be 'carefully considered' (i.e. post-planning permission, if it is forthcoming) as there is no evidence before the Inspector that they **can** be adequately be addressed (perpetuating the concerns identified in the SOS interim decision letter).

4.6. Nor is it sufficient, in my view, for Mr Yeates to simply say 'there are numerous ways to address those issues' (paragraph 3.2.3 of his Addendum).

4.7. On this basis there is **still** insufficient evidence to demonstrate that the new mini-roundabout is capable of addressing safety concerns and, in particular, the multiple (and serious) concerns raised in the most recent Road Safety Audit.

4.8. By way of example, the Road Safety Audit recommends the provision of splitter islands within the proposed hatched areas (capable of accommodating additional signing) but it is not clear what impact such islands may have on the Swept Path of vehicles, which in some instances already encroach into those hatched areas (Doc M10A, Appendix F and G).

4.9. It is also not clear whether there is sufficient highway land available on the approaches to the junction to allow 'map type' signs to be provided, as per the Audit recommendation (Doc 10A PDF page 81).

4.10. Such issues and difficulties are fundamental to determining the acceptability of any scheme and the potential implications for highway safety. Given the concerns previously expressed, and the specific and narrow scope of this re-opened inquiry, in my view it is not sufficient to 'kick the can down the road' and rely on assertions about the ability to sort out these fundamental issues at a later date. In the absence of evidence that they can be resolved, and how, in my view the fundamental road safety concerns remain.

ii) The data years

4.11. In his August 2023 Proof of Evidence (Doc M6), at Paragraph 5.32, Mr Yates seeks to update the 'opening year' traffic data to a 2028 assessment year (to reflect the delays in the opening of GW2).

4.12. This update is based solely on a February 2023 survey on each of the approach arms at the A581/Ulnes Walton Lane junction. Apart from a survey of NMU along Ulnes Walton Lane in June 2023, no other update traffic survey information has been provided by the Appellant.

4.13. The February 2023 survey conclusions must be treated with caution as February is not normally considered to be a neutral month for traffic surveys. Also, Mr Yates has not provided the actual survey data to support his hypothesis, nor what the flows are on the individual arms of the junction (either outside of the two peak hour periods or throughout the entire day).

4.14. A 2028 opening year (with a 60-month construction period) is, in any event, still extremely optimistic, as this assumes that construction would have commenced in 2023 (it did not, obviously) and that the new prison would be filled to capacity immediately on completion of its construction – on this basis, a 2030 opening year would seem to be more realistic scenario. There is no analysis of the implications of such a scenario: the 2030 position is not assessed.

4.15. Notwithstanding that, the analysis of the operation of the A581/Ulnes Walton Lane junction in the February 2024 Addendum only provides an indication of the operation of that junction in 2026, when in the AM peak it is shown to be operating close to, or above, its normally acceptable capacity (Table 2.1 of Doc M10). There is no updated analysis of the original mini-roundabout to reflect the delay in opening year. It is not therefore possible for Mr Yeates to state (as he does at 2.6.5. of DocM.10) that the alternative preliminary highway design for the design for the junction – i.e. the new mini-roundabout - would mitigate the impact of the development to an acceptable degree – to reiterate he provides **no evidence** to demonstrate how this critical junction will operate once GW2 is fully open.

4.16. At paragraph 2.6.6 he also refers to the A581 Rufford to Euxton safety improvement scheme. Whilst such an improvement scheme has previously been part of the Highway Authority's bid for funding safety for roads, and some significant road safety improvements have been undertaken, no further funding has been available since 2021 for any further road safety improvements along the A581. Accordingly, there is presently no general A581 Rufford to Euxton safety improvement scheme to which the proposed roundabout is able to contribute.

4.17. Given the now evident delays in the opening of GW2 it is also surprising that Mr Yeates has not taken the opportunity to update his analysis of the operation of other parts of the highway network (e.g. the Moss Lane junction and the Dunkirk Lane junction) at a revised opening year – the only updates in Doc M3 relate to construction peaks.

Moss Lane Junction

4.18. In his November 2023 rebuttal (Doc M9) Mr Yeates draws attention to a discrepancy between my evidence and that of Mr Riley in respect of the available visibility at this junction. He then relies

on the arguments in Section 2.1 of his evidence to suggest that the available visibility is above the guidance for requirements for local roads.

4.19. First, I am surprised that, given the importance of this visibility (as raised by the Inspector in his original report), Mr Yeates has not considered it necessary to undertake his own detailed measurement of visibility (taking into account hedgerow growth), and speeds, to better inform the Inquiry. However, if relying on my evidence regarding speeds and visibility then his Manual for Streets ("MfS") visibility calculation (Fig 2-2 of Doc M9) indicates that my measured visibility on site (50m) falls short of the required visibility (53m). He should also be using some professional judgement as, in this location, any visibility issues or excessive speeds are likely to result in T-bone collisions which may result in serious injury. In my view, such judgment could *only* lead to an increase in the required visibility, not a reduction.

4.20. At para 3.1.4 of Doc M9 Mr Yeates criticises me for stating that "there will <u>always</u> be at least 1 vehicle waiting to turn right" but then (at Fig 3-2) provides a graph which demonstrates that, apart from the extreme "shoulders" of the peak period, the "end of the queue" will be 1 or more PCUs!). This graph supports my hypothesis.

4.21. However, it should also be noted that this capacity analysis is predicated on the assumption that construction vehicles can arrive before 7am and that there will be **no** working hours restriction. In the original scheme, the noise evidence suggested that working hours would be restricted in order to protect the night-time noise environment. Mr Yeates justifies this change (at para 3.4.2 of Doc M9) by producing a further Hydrock noise report. However, this report only considers the effect of traffic noise on properties close to Moss Lane. It does not consider the impact that such additional construction "night-time" traffic will have on properties close to Ulnes Walton Lane (or indeed perhaps on Dunkirk Lane or the A581). In this respect he confirms (at para 3.1.3) that there will be an additional 235 PCUs using Ulnes Walton Lane (north) between 06.00 and 07.00 – the traffic survey at Appendix 1 of my original evidence (Doc O22: PDF page 24) indicates that the existing southbound flows at this hour are around 32 PCUs, thus, if there really is intended to be no "night-time" working restriction, properties adjacent to UWL (north) will experience a 7-fold increase in traffic during the early hours. The impact of such an increase has not been assessed at all, and would give rise to self-evident concerns.

4.22. In my original PoE I express concerns that, from the plan at Appendix B of the Additional Evidence (Doc M3A), the signage required (and any relocated cabinet) at the Moss Lane junction will encroach into the new footway to be provided for pedestrians, thus narrowing the width available for pedestrians. This concern was identified as a result of my measurement of the presently available verge width at this location. Mr Yeates provides no evidence to counter that concern except to suggest that it can all be sorted at detailed design stage. If it cannot, and the required signage and cabinet do encroach into the footway, then pedestrian safety at this location will be compromised – this appears to me to be another example of kicking the can down the road.

5. VULNERABLE ROAD USERS

5.1. At para 2.4.6 of Doc M9 Mr Yeates suggests that almost 50% of Ulnes Walton Lane is "too narrow" for two large HGVs to pass. The most appropriate advice in respect of the width of rural roads which may be subject to construction traffic can be found in a document produced by HS2 (Appendix 1 to this rebuttal) which identifies that a minimum width of 6m is required for roads used occasionally by HGVs and a width of 6.8m is required for roads where heavy goods vehicles are likely to pass each other on a regular basis (as will be the case for Ulnes Walton Lane during construction of GW2).

5.2. The evidence provided by UWAG at the earlier Inquiry session (attached as Appendix 2 for ease of reference), and which was not disputed, identifies only 3 locations where Ulnes Walton Lane is 6m wide or greater, but even at its widest is only 6.11m wide. Nowhere does it even approach 6.8m in width!

5.3. Mr Yeates then goes on to suggest (at para 2.4.4) that his analysis shows that the "most likely" point at which two HGVs traveling in opposite directions (along a lane 1.5 km in length) will meet is 400m north of the A581 junction where sufficient passing space is available. The SPAs (based on OS mapping) cannot provide definitive evidence when actual width measurements and design guidance is available. In any event, his analysis is based on a wholly unrealistic assumption that vehicles will travel at regular intervals and at consistent speeds along the lane to meet at this location. In reality they will meet at various points along Ulnes Walton Lane, often at points where they cannot safely pass one another.

5.4. He also cannot rely (as he seeks to at para 2.4.8) on the logistics report in this regard, as this only considers whether vehicles impact, or run over, kerb lines. There does not appear to be any consideration of the implications of what happens when a large oncoming vehicle is encountered – although the penultimate paragraph of the Proposed Logistics Summary (Doc M3 PDF page 153) does state that consideration should be given to make exiting vehicles travel north along Ulnes Walton Lane suggesting that the authors of this report do have a concern about 2 large veicles meeting.

5.5. If HGVs do meet along sections of the lane which are too narrow to allow vehicles to pass each other, then verges will be overrun, or worse, one of the vehicles may have to reverse. Mr Yeates also omits any consideration of HGVs passing cyclists or equestrians (paras 5.8 and 5.9 of my original evidence) or to acknowledge that much of Ulnes Walton Lane is part of the Sustrans network. The evidence before the inquiry is that Ulnes Walton Lane is well-used by cyclists, those on horses and pedestrians.

5.6. On this basis it is evident that Ulnes Walton Lane is not an appropriate route to accommodate the large volumes of HGV construction traffic which will occur during the lengthy construction phase.

6. CONCLUSIONS

6.1. These conclusions do not repeat those set out in my earlier Proof of Evidence (Doc O22).

6.2. The Addendum still does not provide any traffic analysis of the operation of the various parts of the highway network at a realistic 'opening year' – Table 2.1 of the Addendum only considers an assessment year of 2026.

6.3. The rebuttal evidence produced by Mr Yeates (Doc M9) only emphasises the safety issues which will arise from construction vehicles using Ulnes Walton Lane.

6.4. Accordingly, there is still **insufficient evidence** to demonstrate that the new proposal is capable of addressing safety concerns.

6.5. On this basis I invite the Inspector to recommend, and the SoS to find, that there remain serious highway safety issues arising from this proposal to justify refusal of planning permission.

Appendix 1

Appendix A – HS2 Rural Road Design Criteria

A.1 Introduction

A.1.1 In many cases, published design standards are not fully relevant to rural roads (especially minor ones).

A.1.2 The Design Manual for Roads and Bridges (DMRB) is only directly applicable to motorways and all-purpose trunk roads, although most local highway authorities adopt DMRB standards and advice notes (either wholly or in part) for their major rural roads.

A.1.3 In many cases, local authorities will have a design guide (or similar document) which is used by developers when planning new local distributor roads and housing / industrial estate road networks. However, these are not generally applicable to the rural road network.

A.1.4 Whilst some of the principles for low-speed roads contained in the Manual for Streets (MfS) can be applied to minor rural roads, care needs to be taken as this document was primarily aimed at those designing for the estate road environment. The gap between this and the DMRB was partially addressed by the publication of the Manual for Streets 2 (MfS2), but that document is principally focussed on busier urban streets.

A.1.5 A set of design criteria have therefore been developed for works on rural roads where no other design basis is suitable, and it is intended to provide a safe, consistent and proportionate approach to help ensure that the character and distinctiveness of such routes is retained as far as is reasonable practicable.

A.2 Requirements and guidance

A.2.1 Requirements are differentiated from the main text of this document by use of the DMRB convention of placing a 'black box' around the mandatory elements. Any variation or waving of a requirement will require a Departure from Standard.

NOTE – Guidance is differentiated from the paragraph to which it relates by use of italic type.

A.3 Guiding principles

i) All works – both temporary and permanent – affecting rural roads must provide route continuity for non-motorised users (NMUs) as well as vehicular traffic.

ii) Potential adverse impacts of HS2 on the existing rural road network should be 'designed out' where reasonable practicable to do so.

iii) Where adverse impacts on rural roads are unavoidable, appropriate and proportionate mitigation measures must be incorporated into the design.

iv) All works – both temporary and permanent – affecting a rural road should aim to retain the existing character and distinctiveness of the route wherever feasible.

v) Therefore, as a general rule, the starting point for design should be the existing engineering parameters when a rural road is diverted or reinstated.

vi) For new routes, the requirements should be based on other similar rural roads in the area.

vii) All works should be designed to minimise, as far as is reasonably practicable, future maintenance requirements.

A.4 Design year

A.4.1 The design year shall be taken as 15 years after the expected date of the new or altered road being brought into use.

A.5 Design life

Permanent works

A.5.1 The design life of highway structures on rural roads shall be 120 years.

A.5.2 The design life of rural road pavements shall be 20 years.

Temporary works

A.5.3 The design life of any temporary structures, pavements or other works shall be 12 months longer than their expected period of use.

A.6 Carriageway width

A.6.1 Separate requirements are given for diversions of existing two-lane and single-track roads.

A.6.2 Widths for new rural roads should generally match those found on adjacent routes of a similar type, subject to the limits given below.

Two-lane roads

A.6.3	Rural road widths for diversions should generally match the existing, subject to a minimum of 5.5 metres (the minimum for two cars to pass in safety at low speed). This minimum width shall be increased to 6.0 metres for lengths with occasional use by buses or heavy goods vehicles and 6.8 metres for roads where buses or heavy goods vehicles are likely to pass each other on a regular basis.
A.6.4	The need for any increased lane width at bends shall be determined on a case-by-case basis using vehicle tracking design tools.
A.6.5	The maximum carriageway width for two-lane roads shall be 7.3 metres (plus any widening on bends that may be required).
A.6.6	Hardstrips shall not be provided on minor two-lane rural roads.

Single-track roads

A.6.7	For safety reasons, the normal width of single-track roads shall be 3.5 metres (above which the risk of uncertainty increases about whether two vehicles can pass each other over a length without passing places). However, the need for local widening at bends must be determined of a case-by-case basis using vehicle tracking design tools.
A.6.8	Inter-visible passing places must be provided on single-track roads at a maximum spacing of 200 metres.
A.6.9	The combined width of single-track road plus passing bay shall be 5.5 metres over a length of 5 metres (or 15 metres where likely to be used by buses or heavy goods vehicles). Tapers 5 metres long shall be provided at each end.
A.6.10	The carriageway width across overbridges and through underbridges on single-track roads shall be 5.5 metres, using road markings to give a centred 3.5 metre running lane to discourage a sudden increase in traffic speed or unsafe overtaking manoeuvres. Inter-visible passing places must be provided at each end of the structure.

A.7 Verges and footways

Verges

A.7.1	Verge widths for rural road diversions should generally match the existing, subject to a minimum of 1.5 metres, or 2.5 metres where a road restraint system is installed.

A.7.2 New rural road verge widths should generally match those found on adjacent roads of a similar type, subject to the limit above.

NOTE – Greater verge widths may be required for visibility reasons or to accommodate highway drainage systems and/or statutory undertakers' apparatus.

Footways

A.7.3 In order to prevent 'creeping suburbanisation' of the countryside, paved footways should normally be considered on rural roads only where necessary to retain existing paved pedestrian route continuity.

A.7.4 Where a footway is provided within the verge, the paved width shall be in accordance with DMRB standard HD 39.

Alternative provision for non-motorised users

A.7.5 On 'quiet lanes' where traffic speeds are inherently low due to physical constraints, it will usually be appropriate for pedestrians, cyclists and equestrians to walk/ride along the carriageway on an informal shared-use basis (especially where remote from built-up areas).

A.7.6 However, on higher speed roads with regular pedestrian, cyclist or equestrian use, it may be preferable to provide a wider verge on one or both sides of the road with a parallel path (or paths, as appropriate to the level of demand) comprising an unbound surface separated from the carriageway by a grass verge.

A.7.7 Where provided, separate paths for non-motorised users shall have a desirable minimum width of 2.0 metres if intended for pedestrians only or 3.0 metres if mixed use (with absolute minimum values of 1.3 and 2.0 metres respectively).

A.7.8 The grass verge between edge of carriageway and path shall have a preferred width of 1.5 metres (1.8 metres if path is to be used by equestrians) and an absolute minimum width of 0.5 metres.

A.7.9 A further grass verge shall normally be provided between and path and boundary feature, with a minimum width of 0.5 metres. However, as an alternative, the minimum width of the path can be increased by 0.25 metres to allow for 'kerb shyness' for boundary feature heights up to 1.2 metres (or by 0.5 metres if the boundary feature is higher).

A.8 Headroom

A.8.1	Headroom at HS2 underbridges shall be 5.7 metres, plus any allowances for vertical sag curvature and deflection, over the paved width and 'structure free zone' in accordance with DMRB standard TD 27.
A.8.2	Headroom to other structures shall be in accordance with DMRB standard TD 27.

A.9 Design speed

A.9.1	For existing rural roads with an 85th percentile speed greater than 40 mph, the design speed shall be selected using DMRB standard TD 9.
A.9.2	For lower-speed roads, the design speed shall be selected using Table A.1 where 85th-percentile speed data is available.

Table A.1: Selection of design speed for lower-speed rural roads

85th-percentile speed (mph)	Design speed (kph)
34-40	60
28-34	50
22-28	40
16-22	30

NOTE – Lower speeds are not recommended for design purposes.

A.9.3	In the event that 85th-percentile speed data is either unavailable or not applicable (e.g. for lengths of new road), engineering judgement shall be used to select a suitable design speed given the particular circumstances of the site.

A.10 Horizontal alignment

Curvature

A.10.1	For rural roads with a design speed greater than 60 kph, horizontal radii shall be in accordance with DMRB standard TD 9.
A.10.2	For rural roads with a design speed of 60 kph or less, horizontal radii shall be greater than or equal to the values given in Table A.2.

Table A.2: Minimum horizontal radius for lower-speed rural roads[1]

Design speed (kph)	Minimum radius (m)
60	64
50	44
40	28
30	16

NOTE – Lower speeds are not recommended for design purposes.

Crossfall / superelevation

A.10.3 For rural roads with a design speed of 50 kph or more, crossfall / superelevation shall be in accordance with DMRB standard TD 9.

A.10.4 For rural roads with a design speed less than 50 kph, crossfall / superelevation shall be provided in accordance with Table A.3.

Table A.3: Crossfall / superelevation for low-speed rural roads

Road type	Crowned cross-section	Cambered cross-section
Two-lane	2.5% down from centreline	2.5% up / down from centreline (non-adverse on bends)
Single-track	Not applicable	

NOTE – Superelevation above 2.5% should not be necessary with low traffic speeds.

Transitions

A.10.5 In addition to providing a smooth horizontal alignment without abrupt changes in direction, changes of width and crossfall / superelevation are usually applied over transition lengths in order to provide a satisfactory visual appearance and to help avoid drainage problems such as ponding.

A.10.6 For rural roads with a design speed of 50 kph or more, transitions shall be provided in accordance with TD 9.

A.10.7 For rural roads with a design speed less than 50 kph, transitions of an appropriate length shall be provided where the horizontal alignment results in a change from crowned to cambered cross-section or at changes of camber from one direction to the other.

[1] Source: Section 8.3 of Manual for Streets 2.

Tie-ins

A.10.8	Changes of width, radius and crossfall / superelevation at rural road tie-ins shall be achieved over a transition of appropriate length.

A.11 Vertical alignment

Curvature

A.11.1	For rural roads with a design speed of 50 kph or more, K values for vertical curvature shall be in accordance with DMRB standard TD 9.
A.11.2	For rural roads with a design speed less than 50 kph, K values for vertical curvature shall be greater than or equal to the values given in Table A.4.

Table A.4: Minimum K values for low-speed rural roads[2]

Design speed (kph)	Minimum crest K value (m)	Minimum sag K value (m)
40	4.0	4.0
30	2.5	3.0

NOTE – Lower speeds are not recommended for design purposes.

Gradient

A.11.3	Maximum and minimum gradient for rural roads shall be less than or equal to the values given in Table A.5.

Table A.5: Maximum gradient for low-speed rural roads[3]

Gradient	Usage by cyclists	
	Significant	Not-significant
Desirable maximum	3%	6%
Absolute maximum	5% (100 metres maximum) 7% (30 metres maximum)	8%
Minimum	0.5% (except where an 'over the edge' approach is adopted to dissipate carriageway runoff)	

[2] Source: TD 9 for 50 kph, values adopted on Channel Tunnel Rail Link (High Speed 1) for 40 and 30 kph.

[3] Source: Section 8.7 of LTN 2/08 for roads where use by cyclists is significant, TD 9 elsewhere.

A.12 Visibility

Stopping Sight Distance (SSD)

A.12.1 For rural roads with a design speed greater than 50 kph, minimum stopping sight distance values shall be in accordance with DMRB standard TD 9.

A.12.2 For rural roads with a design speed of 50 kph or less, minimum stopping sight distance shall be greater than or equal to the values given in Table A.6.

Table A.6: Minimum stopping sight distance for low-speed rural roads[4]

Design speed (kph)	Minimum SSD (m)
50	50
40	36
30	24

NOTE – Lower speeds are not recommended for design purposes.

Visibility splays at junctions and private accesses

A.12.3 For rural roads with a design speed greater than 50 kph, visibility splays shall be in accordance with DMRB standards TD 42 for road junctions and TD 41 for private accesses.

A.12.4 For rural roads with a design speed of 50 kph or less, visibility splays shall be in accordance with DMRB standard TD 42 or TD 41, as appropriate, except that a maximum 'X' distance of 2.4 metres shall be provided and the 'Y' distance shall equal the minimum SSD distance given in Table A.6.

A.13 Junction and private access layout

A.13.1 For rural roads with a design speed greater than 50 kph, major-minor junction layouts shall be in accordance with DMRB standard TD 42.

A.13.2 For rural roads with a design speed of 50 kph or less, major-minor junction layouts shall normally be in accordance with DMRB standard TD 41 Layout 6 except where no long vehicles are predicted in which base Layout 3 shall be used.

A.13.3 Roundabout layouts shall be in accordance with DMRB standard TD 16.

[4] Source: Sections 7.5 and 7.6 of Manual for Streets and Section 10 of Manual for Streets 2, using values of 1.5 seconds for reaction time, deceleration rate of 3.68 m/s² (0.375g) and bonnet length of 2.4 metres.

A.13.4	DMRB standard TD 41 Layout 1 shall be used for field accesses; Layout 2 for accesses from single dwellings; and Layout 3 or 6, as appropriate, for other types of private access.
A.13.5	However, in all cases, layouts shall be modified on a case-by-case basis using vehicle tracking design tools if necessary to accommodate larger vehicles.

A.14 Pavement design

A.14.1	The traffic assessment for pavement design shall be undertaken in accordance with DMRB standard HD 24.
A.14.2	Pavement foundations shall be designed in accordance with Interim Advice Note (IAN) 73 until such time as DMRB standard HD 25 is re-issued.
A.14.3	Road pavements shall be designed in accordance with DMRB standard HD 26.
A.14.4	Any widening of existing roads shall be designed in accordance with DMRB standard HD 27.
A.14.5	Surfacing materials shall be bituminous and comply with DMRB standards HD 36 and HD 37.

NOTE – Horses can experience difficulty using certain recently-laid bituminous surfaces so care needs to be taken to specify appropriate materials for rural roads with significant equestrian use.

A.15 Kerbing and drainage

A.15.1 In order to retain the rural character of roads in the countryside, kerbs shall not normally be provided on rural roads except in the following circumstances:

- To maintain continuity with adjacent kerbed lengths
- Where new footways are being provided
- Where a positive drainage requiring kerbing is installed

A.15.2	Kerbs shall be the 45°-splay type except along footways where half-batter kerbing shall be used.

A.15.3 On embankments, it will often be possible to adopt an ‘over the edge’ approach to dissipate carriageway runoff unless surface contours or any footway kerbing result in large areas draining to a single point.

A.15.4 Similarly, if the road is nominally at grade then an ‘over the edge’ approach can still be adopted provided that verge levels are kept slightly (typically 25 mm) below the edge of carriageway.

A.15.5 In cuttings, it may also be possible to adopt an 'over the edge' approach to collect carriageway and slope runoff by means of filter drains or linear soakaways (where ground conditions permit).

A.15.6 A positive drainage system shall be provided at the end(s) of overbridges as necessary to collect runoff from the structure surface.

A.15.7 A positive drainage system shall be provided from any low points located within underbridges and their immediate approaches as necessary to collect runoff from the carriageway, footway and paved verge surfaces.

A.15.8 Wherever feasible, underbridge drainage systems should be designed to operate by gravity in order to avoid the need for pumping systems requiring maintenance.

A.15.9 Drainage pipes shall be designed to ensure self-cleansing flow rates.

A.15.10 Where a positive drainage system requiring kerbing is used, it may be preferable to use kerbed offset gullies rather than installing long lengths of kerbing on rural roads. This arrangement also benefits any non-motorised users who may be walking or riding along the carriageway edge (where no separate path is provided).

A.15.11 Trapped gullies shall be used to minimise the risk of pollution from highway drainage systems. Similarly, catchpits shall be used rather than conventional manholes on highway drainage carrier drain systems.

A.16 Errant vehicle protection

A.16.1 In order to retain the rural character of roads in the countryside, passively-safe street furniture compliant with BS EN 12767 shall be used wherever reasonably practicable in order to avoid unnecessary lengths of road restraint systems.

A.16.2 Road restraint systems shall be provided on routes with AADT flows above 5000 and a speed limit of 50 mph or more in accordance with TD 19.

A.16.3 For routes with AADT flows below 5000 and/or a speed limit of less than 50 mph, all bridges over (and roads alongside) HS2 shall be considered 'Higher Priority Sites' in accordance with the UK Roads Liaison Group document entitled 'Provision of Road Restraint Systems on Local Authority Roads'. Such sites shall be provided with the appropriate road restraint system(s) unless the risk assessment demonstrates that other interventions reduce the risk to a level where the road restraint system(s) can be omitted.

A.16.4 In other locations on routes with AADT flows below 5000 and/or a speed limit of less than 50 mph, road restraint systems shall only be provided where deemed necessary following a risk assessment undertaken in accordance with the 'Provision of Road Restraint Systems on Local Authority Roads' guidance.

A.16.5 A standard set-back of 1.2 metres shall be adopted for road restraint systems used on rural roads, except where wider verges are necessary to provide the required stopping sight distance.

A.16.6 In visually-sensitive locations, wooden-faced safety fences compliant with BS EN 1317 may be an appropriate solution.

A.17 Traffic signs and road markings

A.17.1 In order to retain the rural character of roads in the countryside, the design should aim to eliminate (where possible), and at least minimise, the need for large numbers of traffic signs and extensive road markings. For example, by adopting similar layout parameters to those found on adjacent roads of a similar type, warning signs for features that are the norm in the vicinity should not be necessary and inappropriate 'sign clutter' can be avoided.

NOTE – Although road markings can themselves be considered a suburbanising feature (especially on the smaller lanes), in some situations their use can reduce or eliminate the need for signage which may be more visually intrusive.

A.17.2 There may be the need for visibility splays in front of certain signs (typically advance direction signs on busier rural roads) that are significant enough to require extra landtake, and potential sites where this may be required must be identified at an early stage.

A.17.3 Existing features such as bespoke cast-iron and wooden fingerpost signs can be highly valued by communities, enhancing the sense of local distinctiveness and heritage. Therefore, if affected by HS2 works to rural roads, historic signage should be retained or relocated wherever feasible[5].

A.18 Lighting

A.18.1 Apart from on some busier 'A' roads and other roads in and around larger communities, few rural roads have existing street lighting systems.

A.18.2 In recent years, there has been also been a move in many parts of the country to minimise energy costs and 'light pollution' effects by reducing existing street lighting in various ways. These include:

- Taking a proportion of columns out of service

[5] Further advice is given in TAL 6/05.

- Switching off lighting for a period in the middle of the night and early morning
- Decommissioning systems entirely

A.18.3	Existing street lighting systems affected by HS2 works to rural roads shall only be replaced on a 'like-for-like' basis, subject to any planned reductions to those systems.
A.18.4	New street lighting systems shall not be installed on rural roads affected by HS2 works unless an assessment demonstrates that it would be economically justified.

NOTE – Aspects of DMRB advice note TA 49 – modified as necessary where applied to non-Highways Agency roads – can be used as a basis for assessment, but a full Project Appraisal Report (PAR) is unlikely to be appropriate for minor roads in most rural locations.

A.18.5 The design should also seek to avoid the need for traffic signs on rural roads to be illuminated (except where this is required by the Traffic Signs Regulations and General Directions 2002 (TSRGD), as amended).

A.19 Other street furniture

A.19.1	In order to maintain the character of rural roads, other street furniture – such as bus stops and shelters, litter bins and pedestrian railings – shall only be provided on a like-for-like basis (re-using the existing materials, where appropriate).

A.20 Highway structures

A.20.1	All highway structures shall be designed in accordance with the applicable standards and advice notes contained in DMRB volumes 1 to 3.

A.21 Earthworks

A.21.1	All road embankments and cuttings shall be designed in accordance with DMRB advice note HA 44.

A.22 Boundary treatments

A.22.1 Apart from on motorways, roads are not required to have features such as fences, hedges or walls on the highway boundaries. However, in practice, most roads have boundary features on both sides but these are the responsibility of the adjacent landowner rather than the highway authority.

NOTE – Most new or replacement highway boundary features on rural roads affected by HS2 will thus be accommodation works agreed with the relevant landowners, but it will always be beneficial for these to be of a type and appearance consistent with the character of those found on adjacent roads of a similar type.

A.22.2	For security reasons, fencing between roads and HS2 shall be designed to prevent, as far as reasonable practicable, the risk of trespass onto railway land.
A.22.3	Secure gates shall be provided in HS2 boundary fencing as necessary to enable maintenance access.

A.23 Landscaping

A.23.1 In addition to adoption of appropriate boundary treatments (see above), it may be appropriate in certain circumstances for areas of landscaping to be provided (or re-provided) within the highway boundaries.

NOTE – Opportunities for landscaping may occur on highway land where existing roads are realigned but any 'surplus' areas are not stopped up.

A.23.2	All landscape areas require ongoing maintenance and none shall be provided without the specific acceptance of the local highway authority.

A.24 Temporary diversions and traffic management

A.24.1	The geometric layout of temporary diversions shall be as for permanent works, subject to any reduced requirements where a mandatory temporary speed limit is to be applied.
A.24.2	Traffic management shall be in accordance with Chapter 8 of the Traffic Signs Manual.

A.25 Safety

A.25.1	Road safety audits (RSAs) shall be carried out for all permanent road layout alterations in accordance with DMRB standard HD 19 in order to help ensure motorised user safety.
A.25.2	Similarly, temporary road layout alterations shall be subject to a road safety review with a scope proportionate to the nature and expected duration of the works.

A.25.3	Non-motorised user audit reports shall also be prepared in accordance with DMRB standard HD 42 in order to help ensure pedestrian, cyclist and equestrian safety.

Appendix 2

Ulnes Walton Lane - Road Width Measurements

Method	The roadway is very busy, so measurements had to be taken as safely as possible. To this end measurements were taken in two stages. A measurement was taken from the 'midpoint' of the white line to the inside kerb edge or tarmac edge; for both nearside and offside halves of the roadway. These were added together to determine the full width of the roadway.		
Location	**Nearside reference point**	**Distance (metres)**	**Offside reference point**
Slater Lane junction school crossing point	Inside Kerb	6.05	inside Kerb
Hedgerows crossing to St. James' Park	Inside Kerb	5.40	Inside Kerb
Barn	Inside Kerb	6.00	Inside Kerb
CCI Eurolam gateway	Inside Kerb	5.50	Tarmac edge
Longton Riding Club bus stop	Inside Kerb	5.60	Inside Kerb
Millers Farm Bus stop	Inside Kerb	5.20	Inside Kerb
Old School lay-by entry point to telegraph pole	Inside Kerb	5.10	Inside Kerb
Equine Centre lay-by entry point	Insde Kerb	5.20	Tarmac Edge
Southport Road Junction at warning sign	Inside Kerb	6.11	Inside Kerb

Maximum vehicle lengths in UK

Articulated HGV: 16.5m
Articulated HGV with low loader trailer: 18m