Land at Hartnolls Farm, Tiverton

Proof of Evidence of Neil Thorne
BSc (Hons) MSc MCIHT MTPS

Covering Highways and Transportation Matters

Local Planning Authority Reference – 21/01576/MOUT
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1 Introduction

Qualifications and Experience

1.1 My name is Neil Thorne BSc (Hons) MSc MCIHT MTPS.

1.2 I am Transport Planning Director at Rappor, infrastructure and environmental consultants, having joined in June 2023. I have over 24 years' experience in Transport Planning and Engineering matters, beginning my career at Peter Brett Associates in 2000.

1.3 I am a Bachelor of Science in Human and Physical Geography and a Master of Science in Transport Planning and Management; I am a member of the Chartered Institute of Highways and Transportation and a member of the Transport Planning Society.

1.4 I provide a wide range of Transportation and Engineering advice to public and private sector clients, covering site development, masterplanning, integrated transport strategies, highway design and detailed design issues. In particular, I have advised clients with regard to residential and mixed-use developments ranging from small sites through to large scale urban extensions and Strategic Development Areas.

1.5 My evidence has been prepared and will be given in accordance with the guidance of my professional institution and I confirm that the opinions expressed are my true and professional opinions.

1.6 My Proof of Evidence is submitted in respect of the planning appeal (APP/Y11138/W/3313401), made on behalf of Waddeton Park Ltd. ("the Appellant") against the refusal of planning application 21/01576/MOUT by Mid Devon District Council (MDDC), the Local Planning Authority.

1.7 This Proof of Evidence should be read in conjunction with my Rebuttal Proof of Evidence (September 2023) submitted in support of the previous Appeal Inquiry relating to this application.

1.8 In particular, whilst there are no Highways and Transportation Reasons for Refusal, and all relevant matters were agreed with the Local Planning and Highway Authorities well before the appeal was bought against non-determination, this Proof focuses on the information presented by Westcountry Land, as a Rule 6 Party, and the representations made by Halberton Parish Council.

1.9 I am familiar with the site and issues applicable to the area, having visited the site and the surrounding locality on numerous occasions, including walking between the site and key local facilities and amenities.

1.10 I have been involved with the assessment of the site since the initial Transport Assessment scoping discussions were held with Devon County Council (DCC, the Local Highway Authority) from May 2021.

Scope and Structure of this Proof of Evidence

1.11 With reference to the above, my evidence is broken down into the following sections:

- In **Section 2**, I refer to the submitted Transport Assessment and position established with the Local Planning and Highway Authorities, updating where necessary.
- In **Section 3**, I set out my assessment of the information presented by Westcountry Land, in particular the suitability of their proposed junction arrangement.
- In **Section 4**, I set out my response to Halberton Parish Council's representations.

2 Transport Assessment & Access Strategy Summary

Introduction

2.1 Planning application 21/01576/MOUT was submitted in outline with all matters reserved for subsequent approval apart from the means of access (Drawing No. 48582/5501/SK02 Rev H) (CD39). The application submission included a Transport Assessment (TA) (CD37) and Framework Travel Plan (FTP) (CD38), both dated July 2021, to support the site. A Technical Note (Response to Highway Consultation Comments) was later submitted in April 2022, following post application discussions with DCC (CD54).

2.2 The description of development was:

"Outline for the extension of existing business park for up to 3.9ha of employment land and up to 150 dwellings with associated infrastructure and access with all other matters reserved".

Proposed Access Strategy

2.3 The access strategy for the site is set out in full within Section 5.3 of the TA (CD37 Page 28). Vehicular access to the site is proposed to be gained via a new priority T-junction onto Post Hill. It is to be located approximately 90m to the east of the existing Hartnoll Business Centre access junction, which is to be stopped up.

2.4 Whilst the existing Hartnoll Business Centre access is considered suitable for some increased employment provision within the Business Centre, the access is not considered suitable for either residential development or as an eastern access to Area B of the Tiverton Eastern Urban Extension (TEUE).

2.5 The proposed access junction concept design is included as Drawing 48582_5501_SK02_H (CD39) and has been agreed with DCC. Swept path analysis has also been undertaken for the junction, which is included in Drawing 48582_5501_SK06, within the Drawings Section of the TA.

2.6 Currently, a layby is situated on the southern side of Post Hill where the new junction is proposed to be located. This will be located within land that is under the control of the client as well as highway land. Drawing 48582_5501_SK02_H also provides details of the relocated layby proposals, which would be situated to the west of the Post Hill / Crown Hill junction.

2.7 Within the proposed development, the site access road will provide connections to all areas of the development. The existing Hartnoll Business Centre access road will be realigned so that it connects to the proposed access road via a priority junction. The proposed employment and Gym / leisure uses will be accessed via an extension to the existing Hartnoll Business Centre.

2.8 Residential and employment parcels of land will be accessed off the primary street via appropriate priority junctions. The masterplan will provide a network of secondary and tertiary streets with permeable pedestrian facilities to encourage walking. It is proposed that the internal roads in the masterplan will be subject to 20mph speed limit and will therefore be suitable for on-carriageway cycling. These proposals will be in accordance with LTN1/20, Cycle Infrastructure Design.

2.9 As set out within the Additional SoCG with MDDC (CD8, Para 3.5.1), securing a secondary access to Area B of the TEUE has been a long-held objective of the Council. The benefits of a secondary access include: (a) that it would accelerate delivery of Area B, which then wouldn't be contingent on access being provided from Area A for development to begin; and (b) it would enable the bus services serving the TEUE to run as a through route, rather than on a less effective internal loop.

2.10 It is agreed with MDDC that the Appeal site offers the opportunity to support development of the adjacent Area B of the TEUE allocation.

2.11 The TEUE Masterplan SPD (adopted June 2018) (relevant extracts included within my **Appendix NT1**) sets out the ambitions and parameters of the urban extension, including the access and movement strategy designed to support the scheme. The SPD notes that an access onto the eastern boundary (although not increasing vehicular movement onto Manley Lane) would be desired, which the Appeal site could deliver as set out in the Planning Application.

2.12 In accordance with the adopted SPD, the Appeal site's main access road is proposed to extend to the western boundary of the site, on Manley Lane. This access road could therefore connect into Area B of the Tiverton Eastern Urban Extension (TEUE), across Manley Lane, in order to provide early access into the eastern part of the TEUE as and when this comes forward for development.

2.13 Stantec Drawing 48582/5501/SK02 Rev E is an earlier version of the final access drawing, and shows the indicative alignment of the access road to the western boundary. This is included as Appendix A of the 'Transport Assessment Scoping Note' (Stantec, 19th May 2021), which itself is Appendix A of the TA.

2.14 Both the proposed access arrangement, and the connection to Area B, can be secured by way of Condition. Para 3.5.3 of the Additional Statement of Common Ground (CD8) sets out the agreed Condition for securing both the approval of technical details and delivery of the access road connection prior to the occupation of any dwellings on the Appeal site.

Transport Assessment Summary

2.15 The key findings of the TA are summarised below:

a) A scoping report was produced and submitted to DCC (May 2020) and subsequent agreement was reached with the highway authority regarding the scope of the assessment.

b) The development is compliant with all transport related policies at a national and local level

c) The proposed development will be accessible to the local facilities and public transport services in the vicinity of the site, utilising the existing pedestrian and cycle links that are already in place in the area, including the National Cycle Route 3. This will ensure that many of the travel needs of residents and visitors of the site can be met without the requirement of a private car.

d) Offsite enhancements will improve and encourage access to sustainable modes and include the provision of new bus stops, a new footway along the northern frontage to connect with the existing footway network and crossing points over both Manley Lane and Post Hill.

e) The existing road network is of a good condition and well aligned in the vicinity of the site. Based on the existing conditions on the surrounding highway network and a review of the accident history within the area, it is not envisaged that the proposed development will result in any highway safety concerns.

f) The vehicle trip generation of the site has been based on analysis informed by the TRICs database and indicates that a total of 143 and 150 two-way vehicle trips will be generated during both the AM and PM peak hours respectively.

g) The application of a modal split based on local data indicates that the multi modal trip generation of the site will equate to 187 and 197 two-way movements during the AM and PM peak hours respectively.

h) Vehicle trip distribution analysis has been based on Census 'Journey to Work' data and assigned to the local highway network.

i) Traffic surveys were undertaken in June 2021 in order to inform the assessment and on which to base the traffic analysis assessment. These were validated against pre-pandemic flows and concluded to be appropriate for use. TEMPro growth factors have been generated and applied to the surveyed traffic in order to produce future year baseline scenarios.

j) These flows have been subject to redistribution analysis to take account of the impact of the A361 junction in the vicinity of the site. This has been based on SATURN outputs provided by DCC.

k) Committed development traffic associated with the permitted part of the Tiverton EUE has been generated following liaison with DCC and assigned to the highway network to generate Reference Case modelling scenarios.

l) Development traffic has been added to the Reference Case traffic flows in order to generate Test Case scenarios for modelling.

m) Junction models have been built using industry standard software and the traffic flows inputted. The junctions are all forecast to operate within capacity and the development impact is considered to be minimal.

2.16 Taking into account the findings of the TA outlined above, with regards to the accessibility of the development and the minimal impact to the existing operation of the local road network, it was concluded that the proposed development is considered acceptable on transport grounds, in line with NPPF, on the basis that:

I. appropriate opportunities to promote sustainable transport modes can be – or have been
   - taken up, given the type of development and its location;

II. safe and suitable access to the site can be achieved for all users; and

III. any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

2.17 The TA confirmed that there would be no unacceptable impact on highway safety, and the residual cumulative impacts on the road network would not be severe.

Agreed Position with Local Planning and Highway Authorities

2.18 Following submission of the application, and subsequently the Response to Highway Consultation Comments, all highways and transportation technical matters were agreed with DCC ahead of determination. This is confirmed within final DCC comments on application, dated 20th June 2022.

2.19 MDDC agree that there are no unacceptable impacts on highway safety, and the residual cumulative impacts on the road network are not severe. See Additional Statement of Common Ground (CD8) Para 2.0 (iv).

2.20 MDDC also agree that the access road provided to Area B on the appeal scheme is safe and suitable, including for the volume of traffic that would be generated by the TEUE. See Additional Statement of Common Ground (CD8) Para 3.5.2.

2.21 MDDC agree that the proposal is in a sustainable location in transport terms, including by reference to its accessibility to local facilities and amenities and the choice of sustainable transport modes that it offers. See Additional Statement of Common Ground (CD8) Para 2.0 (viii).

2.22 On this basis, there were no Highways related objections to the planning application from any of the Statutory Authorities, and no Highways related Reasons for Refusal.

Relevant Updates Since Original Transport Assessment

Traffic Flows on Post Hill

2.23 The latest available traffic data on Post Hill has been taken from Red Linhay's application relating to the Hartnolls Anaerobic Digester (Application ref: 23/01798/FULL). This Automatic Traffic Counter (ATC) provides vehicle flows for 7 days from 8th June 2023. This data is presented in my **Appendix NT2**.

2.24 This data has been compared with the traffic flows used to inform the TA for the Appeal site (collected w/c 5th June 2021). These are summarised for the network peak hours within **Table 2.1** below.

Time Period	Eastbound			Westbound			Two-way		
	2021	2023	Difference	2021	2023	Difference	2021	2023	Difference
08:00-09:00	295	244	**-51**	326	252	**-74**	621	496	**-125**
17:00-18:00	299	255	**-44**	344	278	**-66**	643	533	**-110**

Table 2.1: Comparison of Surveyed Traffic Flows – Post Hill

2.25 As demonstrated in the table above, recorded traffic flows on Post Hill have reduced since the completion of the Transport Assessment in both directions and both peak hours. The reductions are in the order of 17 - 20%.

2.26 The TA sets out the methodology for assessing the impacts of the proposed development across the local and strategic road network. The observed traffic flows were growthed to provide future year baseline flows, with committed development and the proposed development traffic flows then added on top. These forecast flows were used to assess the impacts of the development within the TA.

2.27 On the basis that the baseline flows are now lower than those used within the assessment, the original TA is now shown to have overestimated the future traffic flows across the network and therefore the conclusions, with respect to future operational performance, are considered extremely robust and remain valid.

Public Transport Services

2.28 Since the TA was produced in July 2021, very slight changes to the local provision of bus services has occurred. A summary of the updated destinations, routes and frequencies of bus services from the existing Post Hill bus stops closest to the site is presented in **Table 2.2**.

No.	Operator	Route	Frequency		
			Weekday Frequency (First / Last Service)	Saturday Frequency (First / Last Service)	Sunday Frequency (First / Last Service)
1/1A	Stagecoach	Tiverton – Cullompton - Exeter	Hourly (06:22 & 19:37)	Hourly (06:21 & 19:37)	No service
373	Stagecoach	Tiverton – Uffculme - Cullompton	Hourly - additional services provided for school travel (06:22 & 20:39)	Hourly (06:22 & 20:38)	Every 2 hours (08:07 & 21:00)
X22	Buses of Somerset	Tiverton – Uffculme - Taunton	Five per day (07:12 & 18:27)	Every two hours (09:07 & 16:52)	No service

Table 2.2 Summary of Local Bus Services (updated October 2024)

2.29 During a weekday, the first bus to Tiverton Town centre from these stops is at 06:58, provided by the 1 service. Additional services at 08:21 and 08:28 are provided by the Number 373 and 1 service, with journey times of approximately 8 minutes.

2.30 The last westbound service is at 20:39 (373 service). These services therefore continue to provide for commuting as well as other journey (e.g. leisure) purposes to Tiverton town centre.

2.31 The first weekday eastbound service from these stops to Tiverton Parkway Station is at 06:22 and the last returning service reaches the bus stop at 18:53 (provided by the 1A and 373 respectively), which would continue to offer longer distance commuters to make journeys from the site via a combination of bus and train.

2.32 There have therefore been no changes since the preparation of the Transport Assessment which would alter the conclusions reached at the time.

3 Westcountry Land Proposed Access Arrangement

Introduction

3.1 The planning considerations relating to the established access principles within the TEUE SPD and Area B masterplan are covered in Mr Seaton's evidence.

3.2 Notwithstanding the strategy adopted within the SPD, Westcountry Land is proposing to deliver an access via a new junction with Post Hill, to the west of the Appeal site and within the existing residential area of Post Hill.

3.3 Westcountry Land state within their Statement of Case that they (Para 4.10):

"… *have employed a specialist highways consultant, (Advance) who have worked in conjunction with Devon County Highways to produce a new junction and link road design, entirely within the Devon County Highways owned land on Post Hill, combined with freehold properties that the company has acquired, fronting onto Post Hill. Namely, "The Spinney" and 51A "The Beeches" on Post Hill, together with an intervening parcel of land, known as "The Strip".*"

3.4 The Westcountry Land drawing (Advance Drawing C23172-TP001 Rev B), which forms Appendix JRD3 of the Westcountry Land Statement of Case, shows the creation of a new road with a tight bend heading c.90 degrees south from Post Hill, with this access road located between Manley Lane on the south side of Post Hill and the unnamed road which provides access to Tiverton Golf Club on the north side of Post Hill. The location of the proposed access arrangement can be identified within the Preliminary Site Masterplan for the Westcountry Land area (Bean Drawing PC2333:11), which is located at Appendix JRD4 of the Westcountry Land Statement of Case.

3.5 The drawing shows a change in priority of Post Hill such that the new access road would form the major arm with Post Hill east, while Post Hill west would become the minor arm. The drawing shows a right turn lane provided on the major arm to facilitate the dominant east-west movement along Post Hill.

3.6 The Westcountry Land Statement of Case continues by stating that (Paras 4.11 and 4.12):

"*The access design, junction, link road and works to Post Hill is complete and the intention is to submit a standalone planning application for the access in October 2024.*

WCL (Tiverton) Ltd have formally engaged with the Local Planning Authority, including a preapplication process and PPA which is ongoing, until submission of the planning application. This pre-application has been submitted to include the junction/access design on Post Hill and masterplan for the area B allocation as a whole."

3.7 Of note, the Statement of Case makes absolutely no reference to whether this junction / access design has been confirmed as safe and suitable by DCC.

3.8 It is my view that the junction raises concerns of safety (due to fundamentally inappropriate and unsafe junction design in a number of respects), capacity (which has not been assessed by Westcountry Land, but in respect of which there are clearly issues) and deliverability (due to absence of any consideration for vertical design, the requirement for third party land and impacts on residential amenity). I explain this view in detail below.

Technical Design & Safety Review

3.9 This section of my Evidence provides a detailed review of the Westcountry Land proposed access junction to the eastern part of the TEUE Area B allocation.

3.10 The proposed junction arrangement is shown by drawing C23172-TP001 Rev B, included within Westcountry Land's Statement of Case. The drawing of the proposed junction arrangement is titled 'Proposed Change of Alignment and Priority Upon Post Hill'.

3.11 It is noted that this drawing was first issued on 5th August 2024.

Traffic Survey

3.12 As noted above, an Automatic Traffic Count (ATC) was carried out on Post Hill for a seven-day period in June 2023. This ATC was located approximately in the vicinity of the Appeal Site proposed access junction. A summary of the results of this ATC are shown by **Table 3.1.**

ATC Location	Vehicle Volumes			
	Weekday AM Peak Average (08:00-09:00)	Weekday PM Peak Average (17:00-18:00)	Weekday 24hr Average	Whole Week 24hr Average
Eastbound	244	255	2,965	2,738
Westbound	252	278	3,058	2,810

Table 3.1 Automatic Traffic Count Results (Vehicle Volumes)

3.13 The ATC recorded an average of approximately 3,000 vehicles in each direction (6,000 vehicles two-way) per weekday.

Established Road Hierarchy

3.14 The North Devon Link Road opened in 1988. As DCC's website states[1]:

"*The North Devon Link (NDL) Road is the key strategic link connecting northern Devon and northern Cornwall to the rest of the country via the M5. The route is 70km long and comprises of the A361 from the M5 to Barnstaple.*"

3.15 Should any incident occur on the A361 North Devon Link Road between M5 J27 and Tiverton, then traffic would be expected to reroute along the Blundell's Road / Post Hill corridor.

[1] https://www.devon.gov.uk/ndlr/background

3.16 Additionally, Blundell's Road / Post Hill remains an important route between Tiverton and settlements to the east such as Willand, Halberton and Sampford Peverell, as evidenced by circa 500 two-way movements in each peak hour period, and 6,000 movements each weekday.

3.17 Accordingly, the Tiverton Eastern Urban Extension Masterplan SPD (adopted June 2018) sets out it's Guiding Principles at Section 3.3. Guiding Principle C3 states that (pp50):

"*the new neighbourhood should have a clear and legible hierarchy of streets and spaces to respond to different travel and movement needs.*"

3.18 Under Section 4.1, Masterplan, the SPD continues (pp66):

"*The principal street in the area hierarchy would be Blundell's Road with a secondary vehicular 'loop' in the vicinity of the neighbourhood centre providing access to the residential areas in the southern part of the site.*"

3.19 This hierarchy is set out within the image "Movement" at Page 70 of the SPD. This identifies Blundell's Road / Post Hill as the "Primary route", with the main access streets within the TEUE as a "Secondary route". This plan also shows this "Secondary route" pointing towards the Appeal site at the eastern boundary.

3.20 Figure 33 "Movement" (pp68) of the Tiverton Eastern Urban Extension Area B Masterplan (Consultation Draft, December 2019) identifies Blundell's Road / Post Hill as the "Primary Road", with the main access streets within the TEUE as a "Secondary road".

3.21 This figure also shows this "Secondary road", with "vehicular access" indicated at the eastern extent with the boundary of the Appeal site. The key for Figure 33 also confirms that "*no direct access will be taken from Manley Lane*" and that "*third party land is required*". This third party land is the Appeal site, and confirms the Council's expectation that vehicular access would be taken from the Appeal site.

3.22 An established street hierarchy is important. Neither the TEUE SPD, or the Area B masterplan, propose changing this street hierarchy or diverting the Primary Route, which accommodates the predominant vehicular movement, between Tiverton and settlements to the east.

Junction Type / Priority

3.23 Junctions need to be carefully designed, in accordance with the hierarchy and relevant design guidance, so as not to unnecessarily increase turning movements which interrupt the predominant flow and materially increase potential for vehicular conflicts. In this case the base flow to consider is circa 500 two-way movements in each peak hour, and 6,000 two-way movements each weekday along Post Hill.

3.24 I go on to assess the operational performance of the junction later in my evidence, but for the purpose of demonstrating this point, **Figure 3.1** presents my assessment of the predicted future traffic flows at the Westcountry Land junction in the future (2029) with both TEUE Area A and Area B occupied.

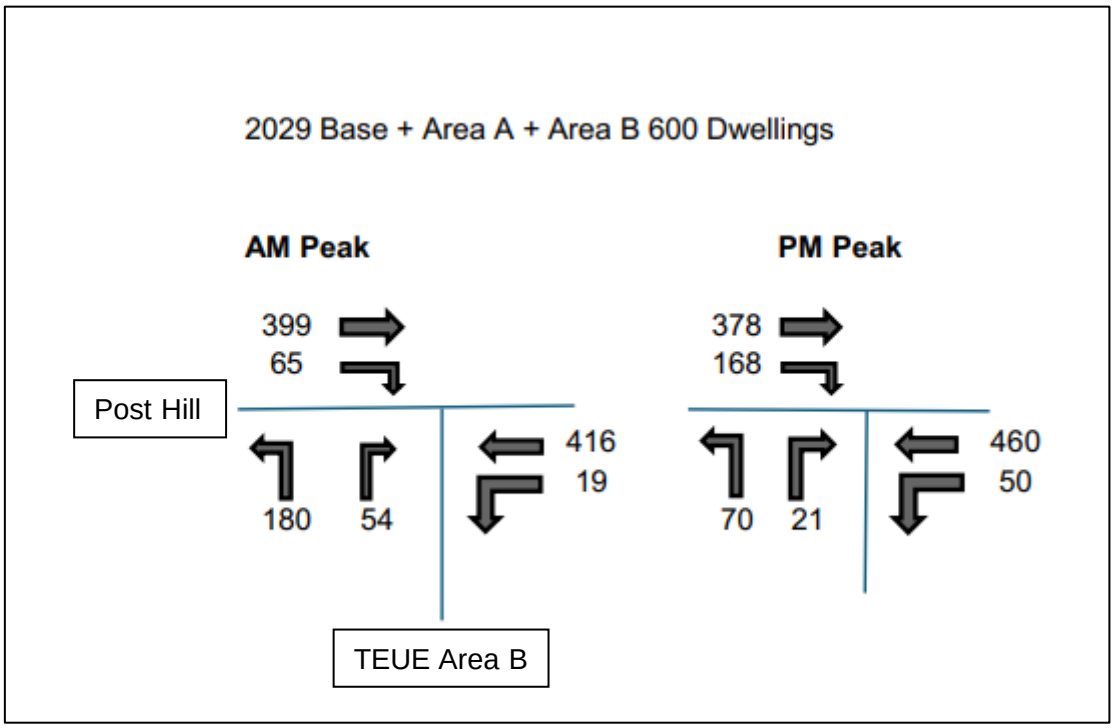

Figure 3.1 Future Predicted Traffic Flows at Westcountry Land Proposed Junction

3.25 In the future, with Area A fully occupied, the two-way flows on Post Hill are predicted to increase to 815 (399 + 416) and 838 (378 + 460) vehicles during the AM and PM peak hours, respectively. As shown in Figure 3.1, these Post Hill movements are by far the highest flows at the junction in both peak periods.

3.26 This demonstrates that the significant majority of traffic will in future continue to travel east-west along Post Hill, to and from Tiverton, consistent with the established hierarchy as set out within the Adopted SPD and Area B Masterplan.

3.27 In contrast, the predicted two-way flows along the Westcountry Land proposed main road with changed priority (TEUE Area B to Post Hill East), would be 73 (54 + 19) and 71 (21 + 50) during the AM and PM peak hours, respectively.

3.28 The proposed arrangement would therefore force the dominant east-west movement to give way to vehicles accessing the Westcountry Land site along their proposed main road.

3.29 This means that the westbound vehicles on Post Hill (416 in the AM peak and 460 in the PM peak) would now be required to turn right from the new Post Hill major arm to the new Post Hill minor arm. The predicted eastbound vehicles on Post Hill (399 in the AM peak and 378 in the PM peak) would now be required to turn left from the new Post Hill minor arm to the new Post Hill major arm.

3.30 As well as introducing delay to existing journeys, forcing the predominant flow to turn right across the junction, presents a safety concern. While these movements currently have priority along Post Hill and are not required to give-way to side roads, the introduction of the proposed junction and its inherent conflicts, increases the risk of collisions occurring.

3.31 These views of increased highway safety risk are borne out by the relevant highway design guidance, which I set out below, with the relevant extracts included within my **Appendix NT1**.

Relevant Highway Design Standards

3.32 Whilst Design Manual for Roads and Bridges (DMRB) design guidance, 'CD 123 Geometric design of at-grade priority and signal-controlled junctions' is for schemes on all-purpose trunk roads, it is considered the most relevant design guidance for a ghost island priority junction on the local road network, such as that proposed by Westcountry Land.

3.33 It is noted that the Chartered Institution of Highways & Transportation (CIHT) Manual for Streets (MfS) 2, at paragraph 1.3.3, states that:

"Where designers do refer to DMRB for detailed technical guidance on specific aspects, for example on strategic inter-urban non-trunk roads, it is recommended that they bear in mind the key principles of MfS and apply DMRB in a way that respects local context. It is further recommended that DMRB or other standards and guidance is only used where the guidance contained in MfS is not sufficient or where particular evidence leads a designer to conclude that MfS is not applicable."

3.34 On the basis of the above, the proposed layout has been reviewed against both MfS and DMRB CD123.

Junction Form

3.35 MfS2, states at Para 9.4.2 that:

"*Detailed guidance on the design of priority junctions is given in TD42/95* [now replaced by CD123] *but (as with all sections of DMRB) this is written specifically for trunk roads and, where used in other situations, should not be applied uncritically.*"

3.36 However, at Para 9.4.3, MfS2 continues by stating that:

"*T and Y junctions have the fewest conflicting traffic movements. Where there is a straight or nearly straight through route drivers will tend to regard this as the major movement, and so even without road markings or signs, a natural priority will tend to develop.*"

3.37 In DMRB CD 123 it stated at paragraph 2.1 that:

"Priority junctions should not be located on a sharp curve on a major road.

NOTE 2 The placement of a priority junction on the outside of a sharp curve can result in drivers on the major road misinterpreting the minor road as the ahead direction. Equally drivers on the minor road could misinterpret the layout as drivers on the mainline as having to give way."

3.38 The guidance within DMRB CD123 is clear in that priority junctions should not be located on a sharp curve on a major road and that junctions on the outside of a sharp curve could lead to driver confusion. This could lead to drivers failing to give-way which could result in collisions.

3.39 Whether referring to either MfS2 or CD123, it is clear that there is a critical concern with the form of the Westcountry Land proposed junction, which would lead to misinterpretation over natural priority. With the straight alignment retained within the design, westbound vehicles on Post Hill may assume that continuing straight on (across both the right turn lane and the northbound lane on the tight bend) would be the natural priority, and risk collision with vehicles travelling north on the proposed TEUE Area B access road. This therefore leads to a significant risk of head on collisions.

3.40 To demonstrate this failing with the Westcountry Land proposed scheme, while a vehicle turning right from a major road to a minor road would typically be required to complete a 90-degree turn, a vehicle travelling west along Post Hill could complete a 'right turn' movement (westbound from Post Hill major road to Post Hill minor road) with little to no deflection. This movement is shown by **Figure 3.2**.

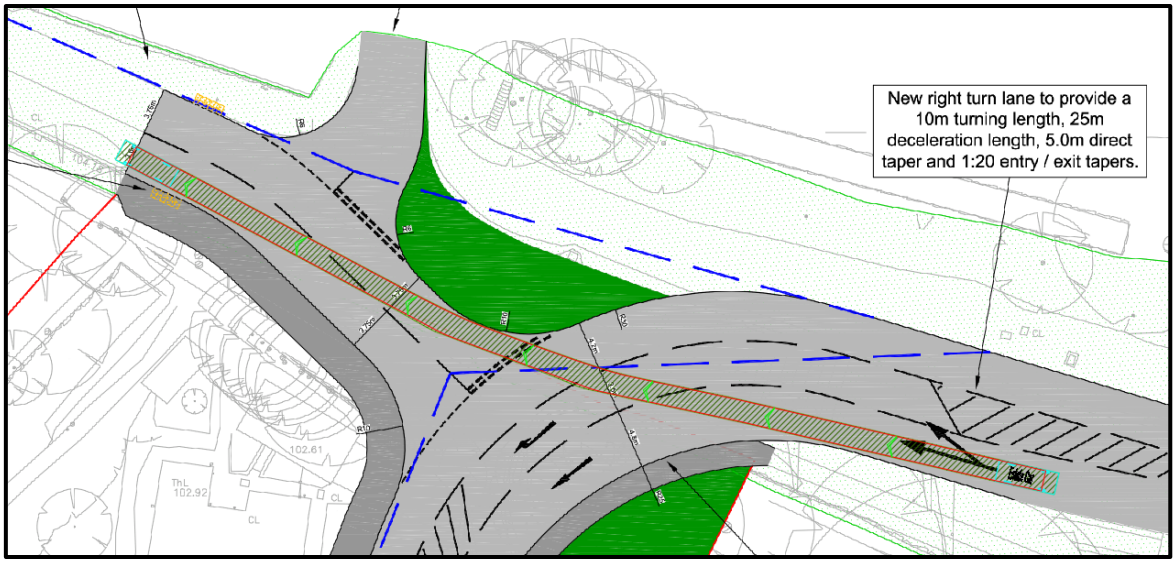

Figure 3.2 Deflection for Vehicles Travelling West on Post Hill

3.41 The DMRB design guidance 'CD116 Geometric design of roundabouts' states that deflection is a key safety concern for when vehicles are required to give-way. This document states at paragraph 3.2.1 that:

"The entry path radius is a measure of the deflection to the left imposed on vehicles entering a roundabout. It is the most important determinant of safety at roundabouts because it governs the speed of vehicles through the junction and whether drivers are likely to give way to circulating vehicles."

3.42 At paragraph 3.2.4 CD 116 states that:

"At compact roundabouts in urban areas, where the speed limit is 40 mph or less within 100 metres of the give way line on any approach, the entry path radius shall not exceed 70 metres."

3.43 Whilst this guidance relates specifically to roundabouts, the same principles also apply to other junction types. It is not specifically set out in CD 123 as the Para 2.1 requirement (as stated above – i.e. avoiding priority junctions on sharp bends) would inherently create this necessary deflection. It should be noted that it is a mandatory requirement to provide appropriate deflection on approach roads to roundabouts, due to the significant impact which deflection has on safety.

Design Speed

3.44 The proposed junction is located within an existing 40mph zone. The Westcountry Land drawing states that it is proposed to introduce a 30mph speed limit on approach to the junction from the east.

3.45 It is noted that there are future proposals to introduce a 30mph scheme on Post Hill in this vicinity under Blundell's Road Traffic Calming Phase 2b. However as far as I am are aware this has not yet been delivered, committed to or even funded.

3.46 Furthermore, the proposed change of speed limit would be subject to a Traffic Regulation Order (TRO). The potential acceptability of the Westcountry Land proposed arrangement is entirely reliant on this TRO being 'made' and the speed limit change enforced.

3.47 A review of DCC's TRO webpage,[2] and lack of scheme details within, demonstrates that this process has not yet commenced, and there is no guarantee that the TRO application would be successful, irrespective of the outcomes of this Inquiry or even a future planning permission.

3.48 Within Department for Transport (DfT) guidance on setting local speed limits (DfT Circular 01/2013, revised 03/2024) it states that (Para 41):

[2] https://www.devon.gov.uk/roads-and-transport/parking/traffic-regulation-orders/advertised-tros/

"Speed limits should not be used to attempt to solve the problem of isolated hazards, for example, a single road junction or reduced forward visibility, such as at a bend, since speed limits are difficult to enforce over such a short length."

3.49 If the TRO were unsuccessful, the speed limit of Post Hill would remain 40mph.

3.50 If the TRO were successful, the speed limit of Post Hill on approach to the proposed junction would be 30mph. However, this change of speed limit to 30mph would not mean that all vehicles would travel under 30mph and new junctions should be designed to the 85th percentile speed of traffic.

3.51 No information on vehicle speeds have been provided by Westcountry Land to establish the existing 85th percentile speed of traffic on Post Hill, or to evidence that the 85th percentile speed of traffic would be below 30mph following implementation of the scheme. However, it is considered highly unlikely that the 85th percentile speed of traffic approaching the junction from the east would be less than 30mph, due to the nature of this route.

3.52 Due to all of the above, a design speed of 30mph is inappropriate. The appropriate design speed to apply to a new junction in this location is 40mph.

3.53 All of that said, the Westcountry Land proposed junction cannot even meet the design requirements for a design speed of 30mph, let alone 40mph. This is demonstrated below.

Forward Visibility

3.54 Forward visibility is the distance a driver needs to see ahead to stop safely to avoid an obstruction in the road at a given speed. The required forward visibility splay for a 40mph design speed would be 120m, as per DMRB guidance. The required visibility splay for a 30mph design speed would be 43m as per MfS guidance. Neither of these forward visibility splays are achievable.

3.55 The 43m forward visibility splay is shown (in blue) in **Figure 3.3**.

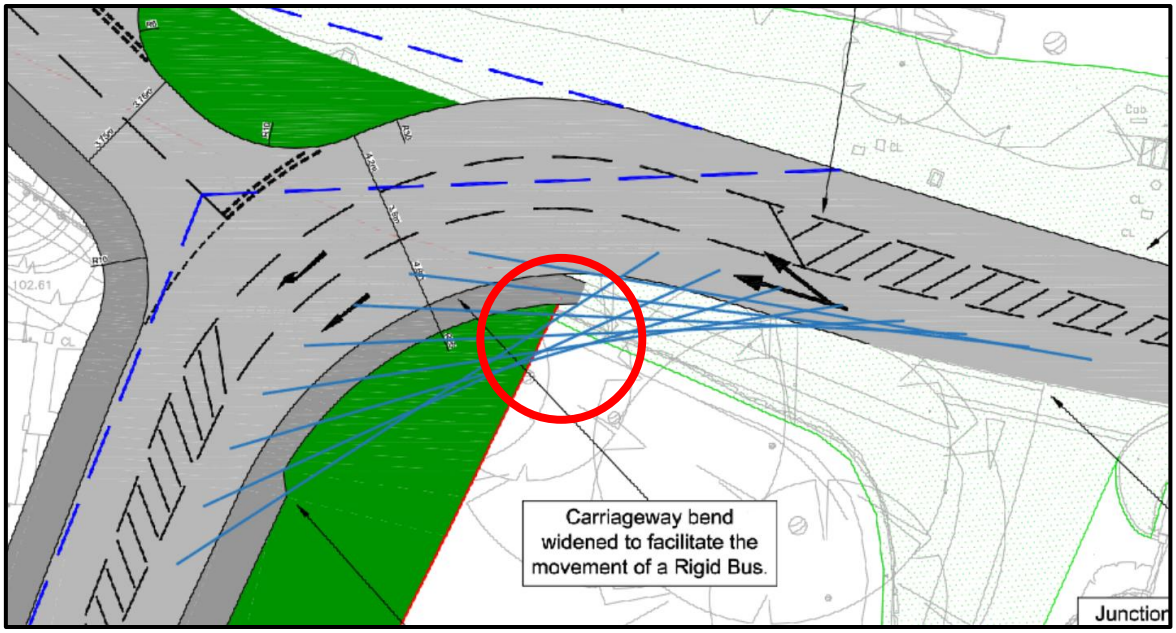

Figure 3.3 Forward Visibility Splay for Vehicles Travelling West on Post Hill

3.56 The 43m (30mph) visibility splay is unachievable without crossing third party land. Figure 3.3 shows these visibility splays extending outside of the adopted highway (light green shaded area, edged green) and that owned / optioned by Westcountry Land (dark green shaded area, edged red), which means that the proposed junction design does not meet either DMRB or MfS standards. I have identified the area in question within the red circle.

3.57 The maximum forward visibility achievable is approximately 34m, which corresponds with a design speed of approximately 25-26mph, in accordance with MfS. This is lower than the required forward visibility for a 30mph design speed (43m) and substantially lower than the required forward visibility for a 40mph design speed (120m).

3.58 The lack of appropriate forward visibility increases the risk of westbound vehicles colliding with other road users, including pedestrians, or objects in the carriageway.

Manley Lane Junction Visibility

3.59 The Westcountry Land drawing does not show junction visibility splays from Manley Lane.

3.60 The 43m (30mph design speed) visibility splay from Manley Lane would cross the right turn lane and would be obscured by vehicles waiting in the right turn lane. This is shown (in orange) in **Figure 3.4**.

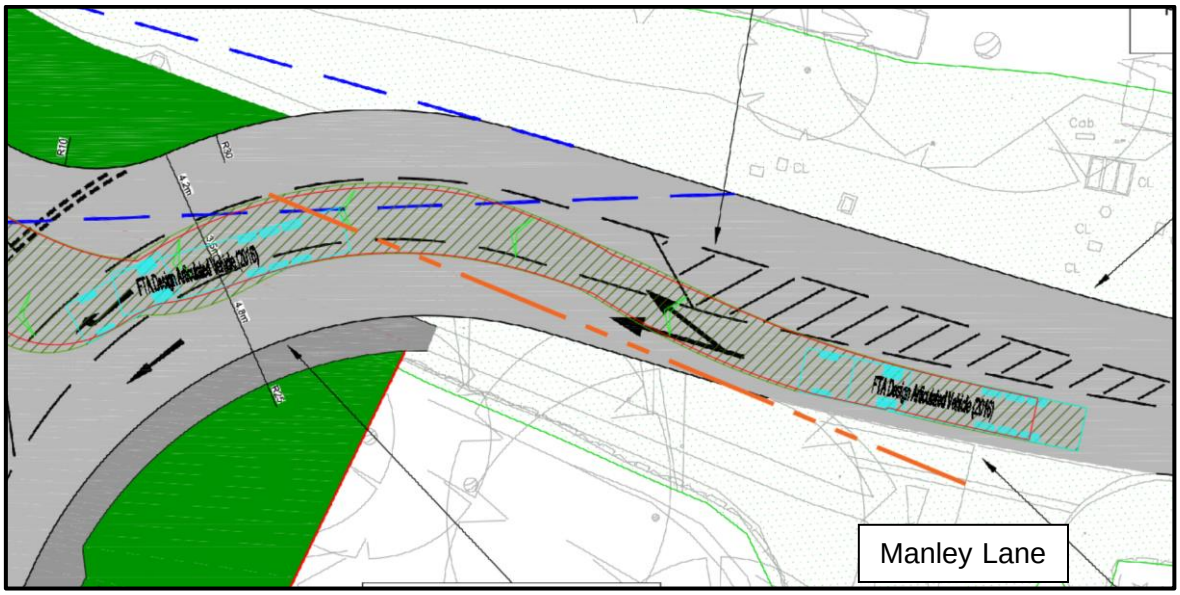

Figure 3.4 Junction Visibility Splay for Vehicles Emerging from Manley Lane

3.61 In DMRB CD123 it states at paragraph 2.4 that:

"New priority junctions shall not be sited where they encroach on the visibility requirements of adjacent priority junctions on major roads with:

1) a speed limit of greater than 40 mph; or,

2) a speed limit of 40 mph or less, where the minor road forms part of a through route.

3.62 The proposed priority junction would encroach on the visibility of Manley Lane which is contrary to DMRB standards. This could increase the chance of collisions for vehicles emerging from Manley Lane.

Vehicle Swept Paths

3.63 On site observations reveal that a significant number of HGVs, buses and LGVs pass along Post Hill. At the location of the proposed junction these east-west movements are currently made simultaneously without conflict.

3.64 If the proposed junction were introduced these movements would not be able to be made simultaneously, with large vehicles being required to give-way to one another on approach to the junction. Both eastbound and westbound HGVs would also encroach on neighbouring lanes. These safety concerns and vehicular conflicts are shown by **Figure 3.5**.

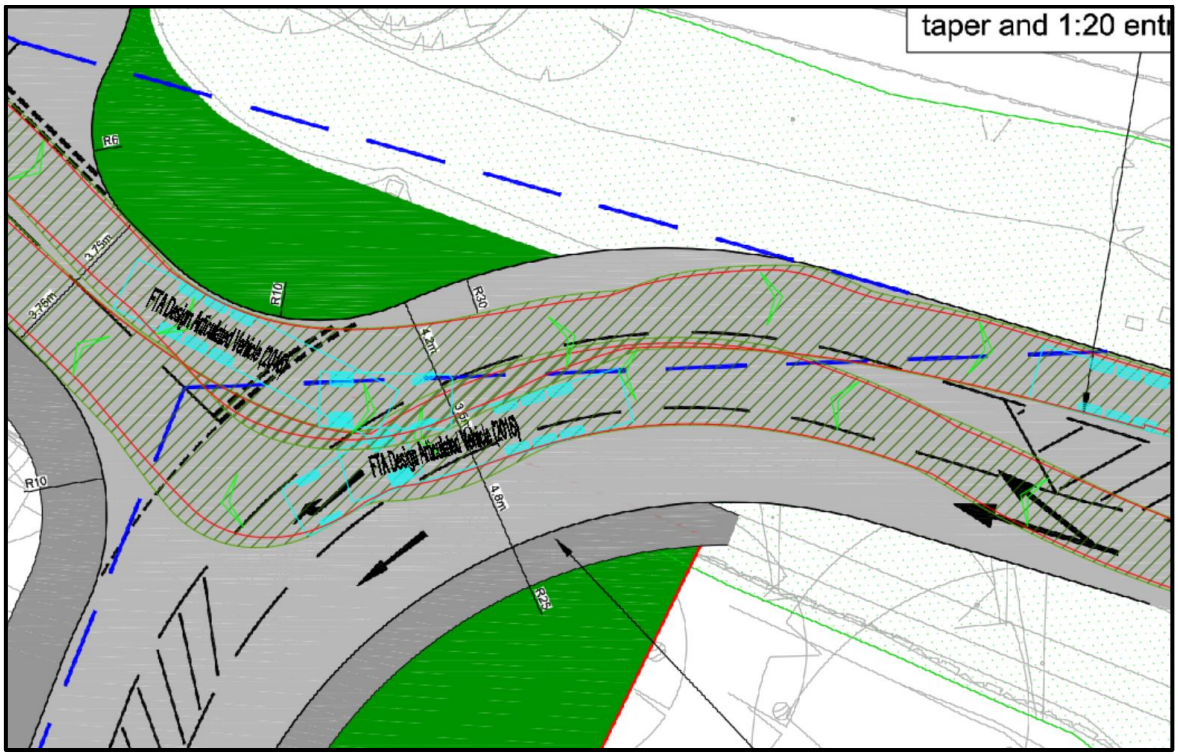

Figure 3.5 FTA Design Articulated Vehicle Swept Paths

3.65 The introduction of conflict where there is currently none creates delay and increases the risk of collisions. If a large vehicle is required to wait on approach to the junction to allow an opposing large vehicle to navigate the junction, this also increases the risk of rear-end shunts.

Pedestrian Crossing Facilities

3.66 There is an existing footway on the south side of Post Hill which provides pedestrian access to the residential properties accessed from Manley Lane. The grass verge on the south side of Post Hill east of this point is also used to provide pedestrian access to Hartnoll Business Centre.

3.67 This established pedestrian route / desire line is not accommodated by the proposed junction arrangement drawing, which does not show any pedestrian crossing facilities.

3.68 It is assumed that pedestrians would be required to cross at the position which I have marked with a red line below in **Figure 3.6**, while the magenta line represents a 1.5m x 43m pedestrian visibility splay from the eastern side of the crossing point.

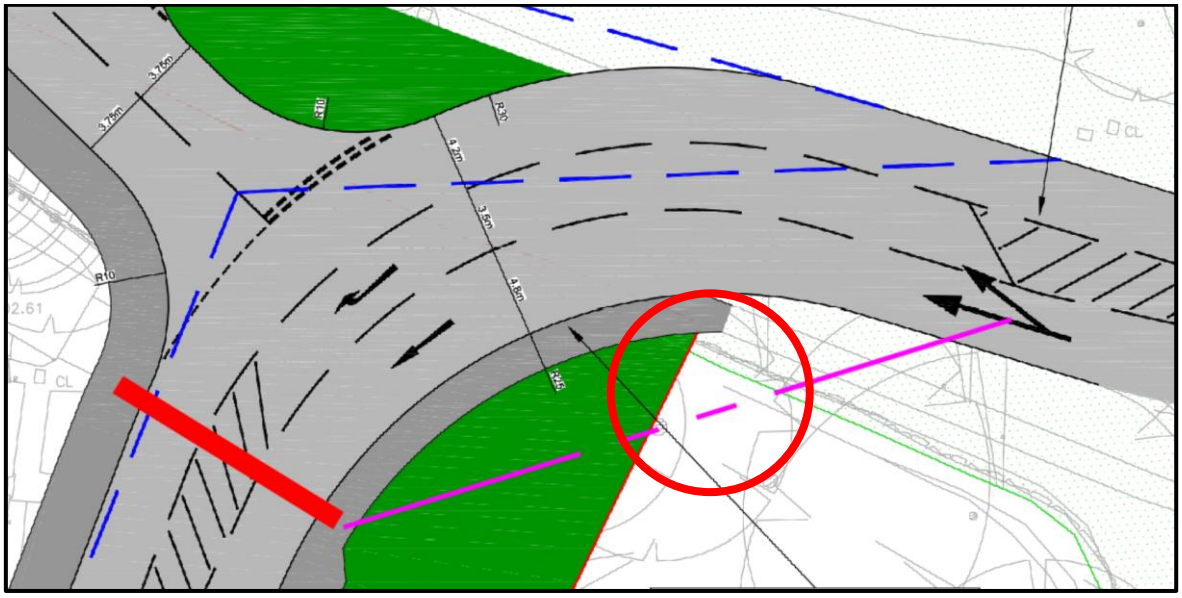

Figure 3.6 Assumed Pedestrian Crossing Point Visibility

3.69 As with the forward visibility explained earlier, pedestrians crossing in this location would not be able to see oncoming vehicles at 43m (30mph design speed) distance, let alone 120m (40mph existing speed). In turn, oncoming vehicles would not be able to see a pedestrian waiting to cross. This means that vehicles travelling west along Post Hill, approaching the crossing point, would not be visible to pedestrians as they begin to cross and vice versa.

3.70 The introduction of this proposed junction arrangement would effectively sever an existing pedestrian route. This arrangement introduces the risk of vehicle to pedestrian collisions and is fundamentally unsafe.

Other Matters Likely to Cause Unacceptable Amenity Impacts

3.71 The above technical review has identified several fundamental issues with the design and safety of the proposed access design and therefore throws into serious doubt the acceptability and deliverability of the junction.

3.72 The Technical Review has been based on the limited information provided by Westcountry Land. Given the limited information available, there are several other design considerations where no evidence of assessment of acceptability or deliverability has been presented. These are set out below.

Existing Topography and Potential Vertical Design Considerations

3.73 The access arrangement has been designed with reference to the land that is said to be to be available to Westcountry Land and under the control of the Highway Authority. It is noted that there are significant level differences between the Post Hill carriageway and the developable land within Area B, with the land falling to the south and southeast away from Post Hill. This can be observed from Post Hill.

3.74 The Westcountry Land drawing does not include any consideration of the vertical design considerations this throws up either at the junction arrangement itself, or the access road to the south.

3.75 Immediately adjacent to the proposed access road are two existing dwellings. These are 'The Gamble' and 'Woodleigh House', as can be seen on the Westcountry Land Statement of Case Appendix JRD2.

3.76 To the west of the proposed road alignment, the existing dwelling 'The Gamble' is sited immediately adjacent to the proposed road. It is assumed that this dwelling will need to be demolished as any vertical design and resulting earthworks / retaining structures will likely impact upon the building itself.

3.77 To the east of the proposed alignment, the existing dwelling 'Woodleigh House' is located at a lower elevation than the dwellings to be demolished to deliver the access road. The construction of the road will therefore likely require significant retaining works and would result in the carriageway being elevated alongside Woodleigh House. This would likely result in amenity and visual impacts, as well as Air Quality and Noise considerations that have not been assessed.

Access Road Gradients

3.78 The resulting gradient of the access road at this stage is not known, given that no vertical designs have been undertaken or made available. It is noted from the TEUE Residential Amenity Assessment (MDDC, July 2016), when considering the option of using Manley Lane as a two-way access to the TEUE, that (Page 12):

"*Gradient on approach to give way from Manley Lane is more significant than would be provided if a new arrangement and inappropriate for volume of traffic that would use the junction*."

3.79 Without a detailed design of the access road, including vertical gradients in line with appropriate design guidance, these concerns must remain relevant. Acceptable gradients to accommodate pedestrians, cyclists and buses may not be achievable, without causing other harm.

3.80 Guidance within the DfT's 'Inclusive Mobility' policy document stipulates recommended maximum gradients of 1 in 20 for pedestrian routes, with particular challenges for wheelchair users where this is not provided. Given the existing gradients and level differences, this may also not be achievable, rendering the access route unsuitable for those with mobility impairments and therefore 'safe and suitable access to the site' may not be achievable 'for all users', contrary to NPPF (December 2023) Para 114b.

Residential Amenity Impacts

3.81 The TEUE Residential Amenity Assessment (MDDC, July 2016) considers the impact of alternative Area B access routes via Mayfair and Manley Lane. One of the considerations for a route via Mayfair, and one of the reasons this access option was excluded from the SPD, was the resulting noise impact of development traffic on the adjacent properties.

3.82 Whilst Mayfair is not being considered by Westcountry Land for access, it can be reasonably assumed that the concerns identified here are equally applicable to the dwellings located adjacent to the proposed access route, namely Woodleigh House and (potentially) The Gamble. In particular, the road would be constructed immediately adjacent to the rear amenity areas, including gardens and outside space. No confirmation has been provided that the resulting noise impacts would be below acceptable thresholds and confirmed as acceptable by MDDC's Environmental Health Officer.

Junction Capacity Assessment

3.83 No information on the vehicular capacity (and associated safety implications) of the junction has been provided by Westcountry Land. To further assess the suitability, or otherwise, of the junction arrangement proposed by Westcountry Land, an indicative capacity assessment has been completed to provide an understanding of the potential operational implications of the new junction on the highway network. This assessment is set out in full at my **Appendix NT3**.

3.84 The list of scenarios tested, with relevant development quantum's is set out below:

- Scenario 1: Reference Case – 2029 Base
- Scenario 2: Test Case – 2029 Base + Area B
- Scenario 3: Test Case – 2029 Base + Area A + Area B

3.85 The results are presented in the **Table 3.2** below.

Movement	AM Peak			PM Peak		
	Queue (PCUs)	Delay (Seconds)	RFC	Queue (PCUs)	Delay (Seconds)	RFC
Scenario 1: Reference Case - 2029 Base						
Minor Arm	1.0	10.25	0.51	0.8	9.18	0.45
Right Turn	1.1	10.71	0.52	1.6	13.64	0.63
Scenario 2: 2029 Base + Area B						
Minor Arm	2.3	19.39	0.70	**7.4**	**56.32**	**0.91**
Right Turn	1.3	13.06	0.57	**1.8**	14.90	0.65
Scenario 3: 2029 Base + Area A + Area B						
Minor Arm	4.2	31.47	0.82	**29.1**	**167.84**	**1.07**
Right Turn	2.4	19.40	0.71	**2.9**	21.06	0.75

Table 3.2: Westcountry Land Access Capacity Assessment Results

3.86 Table 3.2 suggests that the proposed Westcountry Land access junction is forecast to operate at capacity in future, with just Area B occupied. With Area A also occupied, the junction is predicted to operate over capacity, with a maximum RFC[3] of 1.07, and the mean maximum queue length of 29 PCUs[4] on the minor arm (Post Hill West).

3.87 Furthermore, the modelling results tell us that significantly longer queuing is predicted to occur at times during these peak periods. The 95% Queues[5] under Scenario 3 are 70.2 PCU's along Post Hill (west) and 14.9 PCU's along Post Hill (east) during the PM peak.

3.88 The results indicate that the junction arrangement is forecast to operate above capacity in future with the full build out of the TEUE, resulting in significant queueing and delay on the Primary Route of the identified road hierarchy, where there is currently none.

Right Turn Lane Predicted Queuing and Safety Implications

3.89 The capacity assessment demonstrates that, in all scenarios, queuing and delay for westbound right turn movements from Post Hill East, into Post Hill West. With just Area B, the average right-turning queue is between 1 and 2 PCU's, with average delay per vehicle of 13 and 15 seconds, during the AM and PM peaks, respectively. With the addition of Area A, this increases average queuing to between 2 and 3 PCU's, and average delay per vehicle to 19 and 21 seconds.

3.90 Queuing is therefore predicted on the right-turn lane throughout both peak periods and confirms the concerns raised above with regards to visibility splays to and from Manley Lane (see Figure 3.4).

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[3] RFC (Ratio of Flow to Capacity) is a measure that demonstrates the operational performance and capacity at a junction. Generally, results below 0.85 indicate that the junction is operating with space capacity, and limited queues would occur. For results above 0.85, the junction is operating at capacity and queueing would be expected, with increased delays for drivers as the RFC increases.

[4] In order to compare flows consisting of different vehicle types, these are usually expressed in passenger car units (PCUs). Each type of vehicle is equivalent to a number of passenger cars in respect of how much space it requires on the road. E.g. a motorcycle is typically 0.4 PCUs. A bus is 2 PCUs and HGV 2.3 PCUs.

[5] 95th percentile value. i.e. within a given time segment, there is a 95% chance of the queue being equal to or less than this value; and therefore a 5% chance of it being higher.

3.91 With reference to the junction design, the Westcountry Land drawing states that the design includes a 10m turning length and 25m deceleration length in addition to direct and entry/exit tapers.

3.92 DMRB CD123 identifies that:

- "*The turning length shall be a minimum of 10 metres"* (Para 6.4);
- The deceleration length shall be a minimum of 25m for a 60kph design speed (30mph) (Table 5.22);
- However, CD123 also states that "*where capacity calculations indicate that for significant periods of time there can be vehicles queuing to turn right from the major road, the turning length shall be increased to accommodate the forecast maximum queue length.*" (Para 6.5)

3.93 The standard length of a PCU used within junction modelling is 5.75m. A mean maximum queue of 2 PCU's is therefore 11.5m, and a mean maximum queue of 3 PCU's is 17.25m.

3.94 The designers have failed to account for this additional queue length when designing the junction, and is therefore not in accordance with design standards. The right turn facility within the junction should therefore be increased by 17.25m (taken, conservatively, from the forecast mean maximum queue length).

3.95 This would extend the length of the right turn lane back across the Manley Lane junction, meaning vehicles exiting Manley Lane may be blocked by vehicles manoeuvring or queuing within this designated lane, and results in yet a further safety concern. This is demonstrated in **Figure 3.7**.

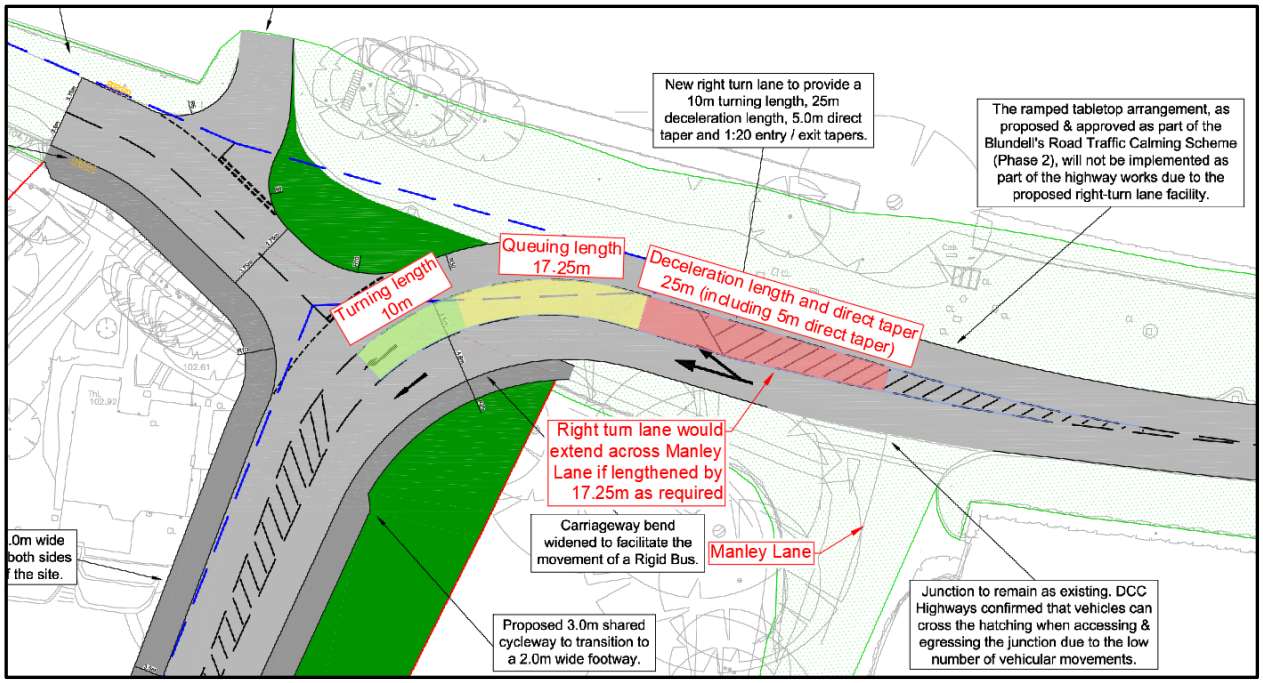

Figure 3.7: Required Increased Length of Right Turn Facility

3.96 Furthermore, any vehicle waiting to turn right into Manley Lane is at risk of rear shunt collision due to the fact that forward visibility of north-east bound vehicles is blocked by this queuing traffic, and they may not see the stationary vehicle in time to brake.

3.97 The above is based on the average maximum queue. However, CD123 states that the turning length shall be increased to accommodate the forecast maximum queue length.

3.98 With regards to the 95% queues identified above, right turn queues do therefore occasionally extend to 85m (14.9 PCUs x 5.75m), well beyond the proposed right turn lane, not only blocking right turn vehicles entering and existing Manley Lane, but also blocking south-west bound 'straight on' traffic.

Summary

3.99 Whilst MDDC recognise the benefits of securing a secondary access to Area B of the TEUE, and it is agreed that the Appeal site's proposed access offers the opportunity to do so, Westcountry Land's proposed junction arrangement, as set out in their Statement of Case, is unsafe and unsuitable and significant concerns remain around its acceptability and deliverability.

3.100 This is because the Westcountry Land proposed arrangement:

1) in changing the priority of Post Hill, is not in accordance with the established road hierarchy, as set out within the Adopted TEUE SPD and Area B Masterplan. Post Hill is the Primary Road and carries 6,000 vehicle movements every weekday;

2) in doing so, unnecessarily increases turning movements, which interrupt the predominant flow and materially increases potential for vehicular conflicts;

3) is not in accordance with either MfS or DMRB (CD123), with the placement of a priority junction on the outside of a sharp curve a critical concern which would lead to misinterpretation over natural priority, failure to give way and lead to collisions;

4) provides little to no deflection for westbound right turn vehicles, which is a significant safety concern for head-on vehicular collisions;

5) is reliant upon a successful TRO to reduce the speed limit on Post Hill from 40mph to 30mph when there are no guarantees that this would be forthcoming, in particular because DfT guidance on setting speed limits suggests this is inappropriate;

6) even with a successful TRO, fails to meet the design requirements for a 30mph road, with insufficient forward visibility for westbound vehicles, and obstructs the visibility for right turn vehicles entering and egressing from Manley Lane creating risk of collisions;

7) provides insufficient space for manoeuvring HGV's, leading to encroachment into adjoining lanes creating risks of vehicle collisions;

8) fails to provide adequate provision for crossing pedestrians, and inadequate visibility to the pedestrian crossing point nearest to the desire line, leading to potential conflicts between westbound vehicles and pedestrians;

9) does not include any consideration of the vertical design considerations, where ground levels are known to drop significantly away from Post Hill. Without this detailed design, concerns are raised regarding the physical and residential amenity impacts (including noise) on The Gamble (if not requiring demolition) and Woodleigh House;

10) may not be able to achieve maximum gradients of 1 in 20, required to provide safe and suitable access to the site for all users, including wheelchair users, without causing other harm;

11) is forecast to operate above capacity in future with the full build out of the TEUE, resulting in significant queueing and delay on the Primary Route of the identified road hierarchy, where there is currently none; and

12) provides insufficient space for the predicted level of queuing right-turn vehicles, contrary to design standards, and in providing this additional queue length, would extend the junction across the Manley Lane junction and result in a significant safety concern.

3.101 In short, there can be no reliance on the acceptability or deliverability of the Westcountry Land access proposals, and therefore their ability to provide a secondary access to Area B of the TEUE.

3.102 In stark contrast, the Appeal site proposed access arrangement:

1) maintains the priority of Post Hill, in accordance with the established road hierarchy, as set out within the Adopted TEUE SPD and Area B Masterplan;

2) in doing so, does not interrupt the predominant flow or materially increase potential for vehicular conflicts;

3) is in accordance with both MfS and DMRB (CD123) and agreed as safe with DCC;

4) has been designed to a 40mph design speed and therefore not reliant upon a successful TRO;

5) provides sufficient space for manoeuvring HGV's;

6) provides pedestrian crossing provision with adequate visibility;

7) is located along a section of Post Hill that is level with the road, and therefore has no material vertical design constraints, does not create any residential amenity impacts and is able to provide safe and suitable access to the site for all users, including wheelchair users; and

8) is forecast to operate within capacity in future with the full build out of the TEUE, without significant queueing and delay on the Primary Route of the identified road hierarchy.

4 Response to Halberton Parish Council Representations

4.1 Halberton Parish Council have submitted comments to the Inquiry. These confirm that the Parish Council object to the proposed development, citing traffic impact, highway safety and sustainable access reasons.

4.2 These matters are dealt with at length within both the original Transport Assessment (which I have confirmed remains robust and valid) and my previous Rebuttal Proof of Evidence.

4.3 As set out within Section 2 of my Evidence, all highways and transportation technical matters, including matters related to traffic impact, highway safety and sustainable access are agreed with DCC and MDDC.

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