



REBUTTAL PROOF OF EVIDENCE
on behalf of Fareham Borough Council
(The Local Planning Authority (LPA))

Land to the east of Downend Road, Fareham, Hampshire

Appellant: Miller Homes
LPA Ref: P/20/0912/OA
PINS Ref: APP/A1720/W/21/3272188
Glanville Ref: 006_8210511_AL_Rebuttal_Proof_of_Evidence
Issue 2: 2 August 2021

Document History

Issue	Date	Description	Prepared By	Checked By
1	20 July 21		A Lewis	-
2	2 Aug 21	Excluding Capacity	A Lewis	-

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1.0 Introduction

1.1 As detailed in my evidence I represent Fareham Borough Council (FBC) on highway and transport related matters at this Inquiry. In my evidence I have suggested there are four parts to the Reason for Refusal. Whilst Mr Wall follows each reason, he addresses the matters in the order they appear in the Reason for Refusal. I believe it is easier to follow these reasons as they affect the assessment of the junction as this enables one to judge the effect of each step on the conclusion. I have suggested there are structured my rebuttal evidence as follows:

- o The development results in a material increase in vehicular and pedestrian movements on Downend Road
- o The proposals do not make acceptable crossing provision on Downend Road for future residents
- o The proposals would result in unacceptable harm to the safety and convenience of users of the highway
- o The works to the bridge would unacceptably affect the operation of the highway because of the queuing and driver delay that would arise

1.2 In Section 7 of my Proof of Evidence (PoE) I critiqued the Appellants Transport Assessment and Statement of Case, highlighting how the assessment artfully but honestly presented data to flatten travel demand in the peak period. As Mr Wall contents at 9.2.2 of his evidence this enables him to demonstrate an assessment scenario which operates with reserve capacity.

1.3 Constructing a difference scenario I present at Table 1.1 below (copied from Table 14 from my PoE) an assessment of the shuttle working traffic lights at Downend Road. As part of this assessment, aligned with the reason for refusal, I consider a scenario in which the junction is modified to include controlled pedestrian crossings, and the equivalent 15-minute period during the AM peak, in 2031 when affected by a cyclists passing through the junction. For comparison purposes I present a short cycle time (of 62 seconds) which results in significant levels of excess queues and delays. Whilst this is a reasonable scenario it is not the worst case so to demonstrate a more realistic scenario, I also present the maximum (120 second) cycle time which still enables me to conclude the residual effects will be severe.

1.4 Through the full deconstruction of both scenarios it would be reasonable to say, *Without Prejudice* both honestly construct forecast scenarios of peak periods. For the reasons I outline in paragraphs 7.18 and 7.19 of my PoE it was my intent to demonstrate a suite of scenarios to assist the Inspector weigh the planning balance of difference scenarios. As I note in 1.1 above, to inform how scenarios should be considered, one must first conclude if a pedestrian crossing is necessary, the effect of cyclists on the highway operation and then the residual effect on traffic.

Table 1.1 From Lewis PoE (Table 1.4) – Linsig Summary for 2031 Downend Road Shuttle-Working Arrangement (with crossings & cycle inter-greens)

Lane-Ref		2031-AM Peak Flows					
		62s Cycle-Time			Optimised for Minimum Junction-Delay		
		Deg-Sat (%)	Av.-Delay (s/pcu)	MMQ (pcu)	Deg-Sat (%)	Av.-Delay (s/pcu)	MMQ (pcu)
1/1	Downend Road (South) Ahead	254.5	1192.2	189.4	101.1	128.8	32.3
2/1	Downend Road (North) Ahead	223.4	1088.7	170.1	98.8	109.0	28.5
Cycle-Time (s)		62			120		
Practical Reserve Capacity (%)		-182.8			-12.3		
Overall Junction Delay (pcu Hr)		352.39			36.75		

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Additional Matters Raised

1.5 At 1.4 of his PoE Mr Wall's alleges that the Council's case raises matters that are outside of the Reason for Refusal, which I have summarised as follows:

- Safety of the site access design
- Site accessibility
- Safety/attractiveness of alternative pedestrian and cycle routes.

1.56 Amongst other things, some of the matters in dispute were that the proposed highway improvements 'comply with design standards'. As I say in evidence [2.10] this is not true, indeed this was established and agreed in Common Ground.

1.67 I go on to point out in evidence that material changes to standards [2.25] have been missed which I will expand on in Section 5 to clarify their effect on highway safety, particularly the approach geometry to the uncontrolled pedestrian crossing and the shuttle-working traffic lights.

1.58 The 2020 application and this Appeal relies on the same Transport Assessment Scoping Note submitted to Hampshire County Council (HCC) for the previous application and appeal, with the traffic generation and forecast design year. And yet, at the previous appeal, the Inspector concluded:

Para 79 Previous Appeal decision:

"I think it reasonable to say that the development would fall short of being particularly accessible by transportation modes other than private motor vehicles."

and

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"In that regard the appellant's estimates for the number of non-private motor vehicle trips may well be quite optimistic"

~~1.69 With changing lifestyles I accept there is not an automatic correlation that a reduction in non-private motor vehicle trips will directly correlate with an increase in private vehicle trips, which is why I considered it was representative to consider observed traffic generation rates from nearby streets, presented in Section 7 of my Evidence.~~

1.710 Given that the Reason for Refusal considers the operation of the highway network, it is entirely within the Reason for Refusal to consider the effects of the development traffic, as the Council considers it, to draw upon the previous Inspector's conclusions. Noting the Inspector's conclusion on costs, I have not re-opened disputes on accessibility which were considered and concluded upon at the previous inquiry. It is, in my opinion, reasonable to reflect upon the Inspector's conclusions as they pertain to the Reason for Refusal given.

1.811 Similarly, the examination of the "...safety and convenience of highway users" will include all highway users. It is common ground that cyclists will cycle within the carriageway thus cyclists or other slow-moving vehicles will be amongst the highway users affected by the proposed highway works on Downend Road. One must conclude that they are highway users and are integral to the Reason for Refusal.

1.912 Indeed, I agree with the previous Inspector who noted "*I also consider that as there is access to the circular countryside public footpath route just beyond the railway bridge that there would be potential for additional recreational walkers, originating from the existing built-up area, to be drawn to Downend Road resulting in some additional crossings of the bridge. That is because the provision of enhanced pedestrian facilities would make it safer to cross the bridge and the bridge's existing condition may well be acting as a detractor for recreational walkers.*"

1.1013 In Section 4 of my proof of evidence I reference the Public Rights of Way Improvement Plan (PROWIP). Consistent with the Inspectors observations I believe it is entirely reasonable to assume that cyclists and possibly even equestrians might consider using Downend Road if the route were safer and will return to this in Section 3 and 4

2.0 Pedestrians

2.1 At the previous appeal, the Inspector notes (at paragraph 24)

"To accommodate additional pedestrian crossings of the railway bridge in Downend Road there is no dispute that alterations would need to be made to this bridge."

2.2 In Section 2.4 Mr Wall explores observed pedestrian and cycle movements in 2016 before going on to demonstrate that the proposals are acceptable for this level of demand.

2.3 Whilst Mr Wall applies TEMPro Growth factors to traffic, in Section 3.6, he has not applied this to pedestrians or other modes.

2.4 As it is accepted that the development will generate pedestrian demand over the bridge and it was common ground that modest demands would occur, even with a poor footway provision, I came to the view that there is some correlation between pedestrian demand and the quality of the infrastructure available. I take this view at 4.6 of my evidence which I am satisfied reflects the opinion of the previous Inspector's reasoning at paragraphs 22 and 23 below:

"22. I consider that qualitatively there would be very little to differentiate route A from B. I also consider there would be potential for commuters walking between the development and the CHes to vary their routes, to avoid monotony, and to use either route A or B. I am therefore not persuaded that route B would automatically be favoured ahead of route A"

"2.3. I therefore consider that there would be potential for more pedestrian use of Downend Road rail bridge than has been allowed for by the appellant. I also consider that as there is access to the circular countryside public footpath route just beyond the railway bridge [see image right] that there would be potential for additional recreational walkers, originating from the existing built-up area, to be drawn to Downend Road resulting in some additional crossings of the bridge. That is because the provision of enhanced pedestrian facilities would make it safer to cross the bridge and the bridge's existing condition may well be acting as a detractor for recreational walkers."



Need for Crossing Assessment

2.5 At 3.6.92 Mr Wall quotes HCC guidance "If there are too few pedestrians for most of the day drivers may tend to ignore the crossing..." but for drivers to ignore a crossing one must assume this statement relates to a stand-alone crossing. One must therefore conclude this policy does not reflect a crossing integrated into a signal-controlled junction as I say is necessary.

2.6 If HCC are correct "There should be at least 50 pedestrians and 1000 vehicles passing through the location every hour." That would correspond with a road with 24,000 Average Annual Daily Traffic (AADT) flows per day and 1200 pedestrians per day, such pedestrian/traffic flow environments tend to support footbridges and subways not at-

grade crossings and ensure there are very few at-grade crossings in the County. When one considers that 'very high' severance levels, highlighted in Table 4 of my evidence, one must conclude this starting point is simply incorrect.

- 2.7 Research by UCL, explores the barrier effect of severance associated with roads and railways [Paper 03, CD 8.23] and then explores behaviour [Paper 07, CD8.27] revealing that crossing demand is significantly lower when traffic flows rise above 10,000 AADT but also that pedestrians become increasingly reliant on crossings (using zebra crossings in the study environments) for traffic flows between 6,000 -15,000 AADT.
- 2.8 As noted in Section 1, I have been careful to avoid straying outside of the Reason for Refusal. At 5.4.2 Mr Wall draws attention to discussions and general concerns over accessibility. As noted in evidence, and with reference to the UCL research above, the A27 traffic flows create 'very high' levels of severance that will affect the willingness to walk to bus services. That is a statement of fact and again only serves to reflect upon the Inspectors findings and thus the appropriate exploration of traffic volumes and their effect on the operation of the highway on Downend Road.
- 2.9 In their policy HCC go on to say that "*if traffic flows are low then pedestrians can comfortably cross in the gaps without needing a crossing*" but traffic flows need to be low enough that pedestrians can cross comfortably.
- 2.10 As I note in Section 5 of my PoE, traffic flows on Downend Road will be high enough to conclude that severance is 'high'. That in itself is not justification for a pedestrian crossing, but it is sufficient to justify an assessment of need. A factor that Mr Wall agrees with, but instead he adopts the superseded PV² relationship.

Changing Demands

- 2.11 Working towards long-term climate change objectives required by the Infrastructure Act 2015, the UK Government asked the Department for Transport (DfT) to develop Local Walking Cycle Infrastructure Investment Plans (LCWIP), producing guidance in 2017. LCWIP forms part of a long-term plan involving the following broad steps to support active travel growth:
- Gather Information.
 - Network Planning for Cycling – audit existing provision and determine improvements required.
 - Network Planning for Walking – audit existing provision and determine improvements required.
 - Prioritise Improvements – develop a phased programme for investment.
 - Integrate Application – into policies, strategies and delivery plans.
- 2.12 HCC have recorded their position relative to LCWIP (Appendix A refers). Since then, various authorities have committed resources to support the auditing or existing infrastructure. In line with the emerging Local Transport Plan all authorities are in the process of auditing existing infrastructure and, in many cases, inviting community groups to assist.

- 2.13 In my opinion the East Hampshire Plan¹ is the most advanced of the Hampshire Councils, setting targets across different geographic areas to support and broadly double levels of active travel. Like other authorities (with the benefit of the (DfT) Propensity to Cycle Tool (PCT)) they have devoted more attention to cycle infrastructure. Havant² Borough and New Forest District Councils have also published plans, to reflect their target cycle network. Thus far FBC have devoted available resources to audit infrastructure in Fareham; where possible extending these audits to exploring areas where air quality or health benefits are likely to achieve the greatest benefits.
- 2.14 If the Government's commitment to climate change is to be achieved, we simply cannot plan for existing levels of demand, based on demand in November 2016. Indeed, to do so, would be in stark contrast with the objective to delivering 'sustainable' development. I therefore conclude that Mr Wall is wrong, but I do accept it is difficult to forecast demand.

Policy

- 2.15 HCC produced a Traffic Management Policy and Guidance in 2014, provided at Appendix B. It notes that "*Facilities to help pedestrians, cyclists and horse rider's cross busy roads can be a vital part of the local highway infrastructure. Difficulty in crossing roads can be a barrier to encouraging more journeys to be taken on foot or by pedal cycle.*" I consider this reflects the same policy context detailed in Policy CS5.
- 2.16 Policy TM7 outlines the Council's position relative to crossing infrastructure. It does not cross reference the PROWIP or LCWIP as these were published later. In this context I have highlighted the previous Inspector's comments and pointed to the potential for increases in active travel in at paragraph 23.
- 2.17 In terms of pedestrian refuge islands, the Traffic Management Policy states "*Pedestrian refuge islands and informal crossing facilities **will not normally be provided in close proximity to an existing signal controlled or zebra crossing***" [My emphasis]. Indeed, it also suggests that "*The impact on cyclists passing the island must also be taken into account*" a matter I highlight in 6.23 - 6.25 of my evidence.
- 2.18 The Traffic Management Policy and Guidance states:
- "The County Council shall consider the provision of crossing facilities based upon the level of demand for **and difficulty in crossing a road at a particular location**, its effect on the safety of all road users, the physical constraints of the location to enable a crossing to operate safely and effectively, and its impact on traffic flow"* [My emphasis]
- 2.19 One might therefore consider that the Reason for Refusal therefore supports the Traffic Management Policy and Guidance in so far as it is necessary to explore crossing difficulty at a particular location and then judge the impact on traffic flow if it were integrated into the adjacent junction.

¹ [PowerPoint Presentation \(easthants.gov.uk\)](http://easthants.gov.uk)

² [2036 Cycle map Document.indd \(havant.gov.uk\)](#)

Forecasting Crossing Need

2.20 At Section 2.4 Mr Wall records a variety of pedestrian surveys and concludes that the "Existing pedestrian use of the bridge is regular but light." For reasons of brevity [4.4 of my evidence] I have not sought to challenge the Appellant's forecasts. In his decision the previous Inspector noted:

Para 13:

"...there is disagreement about the scale of the pedestrian demand and how it would be distributed amongst the three routes."

2.21 At the previous appeal the Appellant spent significant effort at the previous inquiry to defend the site and that it can be made accessible for all modes of transport. As the previous Inspector heard a range of forecasts and concluded (at paragraphs 22 & 23) that pedestrians might switch between the routes. Like him, I am not convinced only 8% of future residents would use Downend Road but accept it would be inappropriate to advance a very different proposition.

2.22 For example the previous Inspector seemed to be satisfied that children would walk to Camms Hill Secondary School and commuters would walk to CHes. ~~If only the school children represent 6% of the future population, that would reflect around 30 pedestrians. As the Appellant has suggested that pedestrian flows on Downend Road could be 18 during the peak hour, and I conclude (at 4.28 of my PoE) that it is right to assess the peak interval it would be reasonable to assume that a pedestrian might cross every 2 minutes during busier periods.~~

~~2.23 Based on the infrastructure proposed, I offered to agree pedestrian/cycle forecasts when working on our Statement of Common Ground, believing this would assist in negotiations on the identification of higher traffic generation forecasts. They did not. I considered it would be unethical to subsequently disagree with these in evidence and therefore framed my opinion in 5.2 of my PoE to demonstrate these are the Appellant's forecast and I considered them as representative.~~

2.24 As the County policy states it "...shall consider the provision of crossing facilities..." I will first examine highway safety to help judge the crossing difficulty a pedestrian might experience.

Personal Injury Accident History

2.25 At 2.5.4 The Appellants review the latest PIA data, recording some of the causation factors noted in the STATS report around the fatal accident. The coroner has opened the inquest and there is a summary of the incident in the public domain. Whether or not alcohol, as reported in the PIA data, was material the inquest does not suggest there are criminal charges pending as such it would be inappropriate at this stage to dismiss the seriousness of the PIA purely on this causation factor.

2.26 From the facts that are in the public domain the only conclusions that can be drawn is that, by calculating where the vehicle came to rest, the driver lost control of the vehicle within the 40mph zone somewhere near of the bridge and, subject to the speed of the vehicle, this may have occurred near the layby.

Recording Safety in Design

- 2.27 I note that the Appellant's Statement of Case reiterates that the proposals 'comply with standards'. When I began to examine the design, I quickly found what I believe to be DfS. To identify DfS/RfS one first needs to establish or interpret the design speed. As the Appellant was initially reluctant to accept that any DfS/RfS had been applied to the design I was obliged to explore these independently.
- 2.28 In Section 3.5 Mr Wall records that he has engaged with HCC. I have done the same. Although I have been less able to gain clarifications as quickly as I would like, I have received the e-mails attached at Appendix E and this has contributed to some delays in the preparation of Evidence.
- 2.29 Having cast confusion over whether or not the highway proposals do/do not include DfS/RfS and suggested that latitude is available in Manual for Streets to support these I initially sought to obtain records/clarifications from HCC attempting to establish on what basis these DfS/RfS were approved in principle.
- 2.30 As part of the 'consenting procedure administered by the highway authority' HCC has a duty under Section 278 (S278(4)) of the Highways Act 1980, which states that "A highway authority shall not enter into an agreement under this section unless they are satisfied that it will be of benefit to the public." It is therefore incumbent upon a highway authority to ensure that the works are 'of benefit to the public'. In considering this duty it is incumbent on the Authority to consider and record decisions. From my exchange with HCC, it seems that some decisions have been taken but, understandably, not all of these have been presented to the planning authority FBC.
- 2.31 To inform the preparation of my evidence I was keen to understand issues relating to the design evolution of the Downend Road proposals, beyond the information available in the public domain. The information I received from Holly Drury, in my opinion, did not seem to appreciate the importance of addressing matters of the latest design standard (for a Public Inquiry) so I attempted to clarify information.
- 2.32 Having encountered similar situations in Hampshire where I have had to complete consultation exercises in support of Traffic Regulation Orders (TRO), most with statutory consultees (Police) and some in public forums to demonstrate that a TRO would be acceptable, I sought to clarify current procedures. I have therefore provided these at Appendix E).
- 2.33 I entirely agree with HCC the accident history requires some redress. Having examined the environment I am satisfied that the Downend Road corridor is broadly consistent with DfT Circular 1/13 (CD 8.10 Refers) with frontage development on one or both sides within the 40 and 30mph limits respectively.
- 2.34 TG21 is consistent with my experience of HCC procedures so I was also keen to obtain the risk assessment (2.2.4 refers) in support of the speed limit extension. As I set out in my e-mail 30mph limits are normally placed within an urban environment with development on **both** sides of the road (DfT Circular 1/13). Having seen the range of speed surveys presented by the Appellant I was unconvinced that Hampshire Constabulary would support the 30mph extension north of the proposed access and sought to obtain evidence they had been consulted. From the e-mail exchange it appears that HCC have clarified that they have

not consulted the police and highway officers have taken the view that the design could be advanced within the TRO.

- 2.35 Having failed to elicit a response in time for evidence I acknowledged my position (at 2.59 of my evidence) and was obliged to apply assumptions based no available information. Critical to my evidence was the need to establish what DfS/RfS have been considered to the current standard, as this will be the basis on which the Inspector determines the appeal. Having clarified that the design was considered in 2017, I am satisfied that the design has not been examined to the latest version of DMRB and prepared draft DfS/RfS at Appendix C of my PoE, eventually receiving an e-mail from Nick Gammer after the exchange date.
- 2.36 In my opinion, it is the topography and level of pedestrian, cycle and equestrian activity that influences drivers' perception of safe speed, often in excess of 40mph north of the proposed access. Relocating the speed limit is not, in my opinion, enough to address speeds which is why I explore in Drawing 8210511/6106 the existing speeds and likely effect, considered in 3.6.25 of Mr Wall's PoE.
- 2.37 In Holly Drury's response it is possible to identify a mix of references to DMRB and MfS, applying latitude to the application of DMRB standards given the local highway environment. There is no mention of ghost-island right-turning lanes in MfS1 and limited mention in section 9.4 of MfS2, primarily associated with pedestrians. If HCC claim that MfS affords latitude to apply DfS/RfS it must follow that the design parameters that are being adopted at least appear in the document to apply latitude to these.
- 2.38 I do accept that MfS does not follow the same approach in DMRB, automatically rounding up design speeds for visibility/geometric purposes. Here it might help to clarify that MfS2 refers to 4-step relaxations (para 8.3.5 refers), but TD9 has been superseded by CD109 replacing the stepped relaxation to 3 steps (Table 3.5) as I note in 2.55 of my evidence.
- 2.39 What was crucial to my evidence, and a response was not received in time, was clarification as to the DfS/RfS that have been considered. In Holly Drury's e-mail she reports the "...right turn lane junction **may** require 3 departures from standard..." As I have established this is incorrect. Based on the speed surveys agreed with the Appellants I have illustrated in Drawing 8210511/6107 appended to this rebuttal, I have considered research by TRL or published in Local Transport Note 1/07 to consider speeds along the length of the highway proposals. Having considered the latitude afforded by MfS the Downend Road proposal **will** require DfS.
- 2.40 Hopefully, it is apparent that my enquiries of HCC adopt an exploratory tone seeking to establish the officer's opinions of what they support and the basis on which they have drawn conclusions. Most of which were seeking to clarify what HCC considered the position was relative to DfS/RfS, as the Appellant initially persisted that the highway improvements fully complied with design standards – a fact we have now established in TSoCG.
- 2.41 As a consultant working for public and private sector clients I have been in a similar position to the Appellant. In the past, having established there were DfS/RfS I have been obliged to record these completing forms and advancing the highway improvement design to the next stage to demonstrate their effect, consistent with Section 3 of TG17.

Indeed, in a case in Lymington (Appendix F refers) the DfS/RfS were used to resist proposals for a junction with very similar safety concerns.

- 2.42 Seeking only to establish the extent that policies had changed. Having taken reasonable endeavours to establish if DfS/RfS exist, I note that neither the Appellant nor HCC has been able to furnish the Inspector with the forms in my e-mail exchanges. I would therefore draw the Inspector's attention to the application red-line which includes the limit of highway works and note paragraph 1.6 of TG17 "*Design Organisations are reminded that it is their duty to ensure that Departure applications are complete, and that responsibility for any errors or omissions remains with them.*"

Consistent Approach

- 2.43 I have noted several DfS/RfS and would specifically highlight Holly Drury's text response in red "*This supports the approach taken in the report of 2017 following MfS standards instead of DMRB. The most recent audit relating to the works at the bridge didn't relate specifically to any departures as **there are none** for the signal elements of the bridge works...*" [My emphasis] This is incorrect.
- 2.44 CD123 paragraph 7.3 states "*An intervisibility zone **shall** be provided that incorporates an area that extends across the full carriageway width of each arm from a distance of 2.5 metres back from each stop line...*" The notes that support the departure from this standard do afford some latitude but as Drawing No. 8210511/6107 shows, as a result of realigning the southbound carriageway, there is insufficient SSD because of the bridge parapet wall, using MfS visibility splays for the existing observed speed.
- 2.45 I understand that HCC officers may be sensitive to the Inspectors conclusions at the previous appeal, but I would expect that to result in greater vigour when examining the resubmission. I also accept, as I have in TSoCG, that the proposed footway on Downend Road bridge will be a significant improvement over existing conditions and this way the fatal accident last year might tilt the highway planning balance.
- 2.46 At the previous appeal the Inspector consider the implications of access to No. 28 and considered that such matters could be resolved through the approval process of the S278 Agreement. Whilst these safety concerns might be addressed to include a secondary signal head for a separate access, the resolution of any DfS/RfS one must first establish if these are departures or relaxations.
- 2.47 What I have not been able to reconcile is that in my experience at Lymington, the presence of flood defence wall, which drivers can see over (see images 2.1 (before) and 2.2 (after)), HCC insisted upon a DfS be recorded in full for an outline application in 2009 (before TG17, Appendix T of Mr Wall's evidence refers). That DfS was enough for HCC to recommend refusal and formed the basis of HCC's defence that were used to refute visibility was available over the flood defence wall, forcing the Inspector to conclude as he did (Appendix F refers). In very similar conditions however HCC seem to be anxious to defend its decision not to record DfS/RfS and seem reluctant to support a thorough interrogation of the proposals by FBC.

Image 2.1 Bridge Road, Lymington 2010



Image 2.2 Bridge Road, Lymington 2018



2.48 Both HCC and Mr Wall dispute the need for changes to the highway improvements which might address matters of safety. Given the obligations under S278(4) my objective has been to establish that due process has been undertaken so that I can (without prejudice) relay to the Inspector that the evolution of the Section 278 design and delivery might be satisfactorily concluded.

Design Standards, Departures and Relaxations

- 2.49 In paragraphs 5.2.59-60 Mr Wall provides an incomplete quote: (CD123, CD 8.311 -para 6.1.1) "...ghost islands, on single carriageways, should be developed to their maximum width using the tapers shown in Table 6.1.1" In the Table the taper lengths for relevant design speeds are: 50kph =1:20; 60=1:20; 70kph=1:20.
- 2.50 At 6.1.2 CD123 explains that "...tapers should be developed..." either 'symmetrically' or 'asymmetrically' depending on the road alignment. I understand Mr Walls interpretation on the construction of the sentences as they appear. Conversely, I would suggest that the flexibility afforded (should) relates to how the taper is developed 'symmetrically' or 'asymmetrically' to achieve the 1:20 taper shown in Table 6.1.1.
- 2.51 Indeed, Mr Wall then reflects upon the formation of the ghost-island taper in Paragraph 5.2.62 of his PoE, indicating the ghost-island is constructed asymmetrically before going on to accept MfS 1 and 2 do not provide guidance on geometric standards for ghost islands.
- 2.52 Finally at 5.2.70 Mr Wall asserts that the horizontal alignment would be 'smooth' and 'natural and the scheme would "...not give rise to any sharp bends..." This is not a view shared by HCC (paragraph 2.52 of my evidence).
- 2.53 At 5.2 Mr Wall explores the examination of highway improvements on Downend Road which I explore in Section 2 of my evidence identifying draft DfS/RfS at Appendix C, explained above.
- 2.54 I believe Mr Wall and I agree (at least in part) "5.2.5 ...the safety and adequacy of the site access does not form part of the Reason for Refusal." And we also agree "5.2.3 ...DMRB provides relevant guidance and is a design consideration, but it is not a standard to be slavishly achieved on the local road network. "As I explain in my PoE the (FBC) Council's Case has been narrowed to focus on the safety and operation of the highway and I have examined proposals to judge safety and how this might affect vulnerable highway users.
- 2.55 At 5.2.22 b Mr Wall records that "The Audit specifically considered the potential for these departures, stating that they raised "no safety issues" " If that was true of the last Audit, at 2.50 of my evidence I highlight this is incorrect, the Auditors raised two problems A2.1 and A2.3 and yet record that previous concerns were addressed (in the latest design) "...through the provision of a topographical survey." As such one cannot be sure that the DfS I suggest applies to the verge has been considered.
- 2.56 5.2.22 c Mr Wall quotes HCC recording that "Departures from Standard could be required to DMRB... however speed check indicate MfS Standard could be applied..."
- 2.57 MfS1 offers very few references to highway geometry almost every reference relates to visibility, vehicle turning movements or swept paths, the focus heavily biased towards design quality best reflects in "4.5.6 Geometric choices and street pattern should be based on a thorough understanding of context."
- 2.58 MfS2 attempts to enhance the Quality Audit Process (4.4) and states at "8.2.4 ... that drivers tend to adopt higher speeds in response to more generous highway geometry and that, in recent years, the proportion of vehicles that exceed the speed limit in free flow

conditions has been dropping." That is true, as traffic density increases speeds drop, but that is not the only reason highway designers have become more skilled at influencing driver's perception of safe speeds.

- 2.59 MfS2 points to Priority and Uncontrolled Junction (9.4), Conventional Roundabouts (9.6), Mini Roundabouts (9.7) Traffic Signals (9.8) in **every** case designers are pointed to DMRB, highlighting specific matters where the design might apply latitude in the design approach to accommodate pedestrians, cyclists or influence speeds or the use of land in urban areas. There are some references to ghost-island right turning lanes in Section 9.4, none reference supporting reasoning to vary taper lengths. Indeed, the taper lengths are the same for speeds up to 40mph as noted above. If Mr Wall is right however that should not be the only reason to 'slavishly' stick to a design or seek to vary it.
- 2.60 Section 8.3 of MfS2 examines Horizontal Alignment and based on TD9 (now replaced by CD109) considers the use of stepped relaxations. It is helpful to explain some of the subtle points of horizontal and vertical alignment:
- Horizontal alignment is made up of a series of straights, bends and transitions these are in-turn supported by subtle variations in vertical alignment to provide a degree of comfort within a vehicle, all relative to the design speed.
 - The design radii are effectively a degree of turn on the steering wheel, held in that position for the duration of the turn.
 - The Transition is the rate that the steering wheel is turned from a straight or bend to another bend.
 - For drainage purposes the road normally has a camber to ensure water flows to gullies/ditches/swales, a camber is the preferred road profile.
 - To ensure vehicle occupants maintain a degree of comfort the road can be super-elevated to soften the sharpness of the bend.
- 2.61 I have tried to illustrate these in Image 2.3 to help explain how subtle changes in the vehicle or road are translated to the other. Whilst I accept these are matters that will be addressed in the detailed design (and the Previous Inspector considered with regard to access to No. 28), there are limits to the extent these can be relaxed or departed from. As I explain in Section 7 of my evidence, these might be inconsequential on a road link but through and approaching a junction and a crossing these become more significant.

Image 2.3 – Illustration of Horizontal & Vertical Alignment

Straight	510m Radii	255m Radii
		
Transition	Camber	Superelevation
		

- 2.62 At the Transport Statement of Common Ground (TSoCG) I have sought to agree speed surveys as an account of existing conditions as a means to judge existing and forecast conditions. As set out in Table 2. 2 of Me Wall's Evidence. I accept that traffic speeds will vary across the day, in some cases influenced by traffic composition and flow volumes, affecting driver's ability to select their speed. The speed data does not suggest that speeds will remain the same, indeed changes to traffic volumes and the Highway environment will have an effect.
- 2.63 Considering the Appellants proposed highway improvements I have sought to employ research to examine traffic speeds as recorded in the TSoCG in Drawing No. 8210511/6106 to demonstrate existing observed speeds (Black) and likely speeds (Blue) based on research by TRL or published in Local Transport Note 1/07. From this I would conclude that vehicle speeds are likely to be similar to existing levels based on existing and planned highway features.
- 2.64 Generally, the tighter the horizontal radii the greater the effect will be on speed. When the design radii are 90m> the effect is limited. At design speeds in excess of 50kph, transitions and superelevation become more important to the design. MfS2 draws attention to the application of design step relaxations including in TD9 and transitions ($L=V^2/R$), all of these might be deliverable with modest levels of super-elevation on a link road.
- 2.65 At Appendix W (Drawing No. ITB12212-GA-076) Mr Wall presents horizontal design radii through the Downend Road highway proposals. On the face of it these would appear to broadly accord with CD109, reproduced in part in Table 2.1 below. He kindly provided this drawing which helped identify that these radii made little or no provision for transitions between the bends.

Table 2.1 Extract from Table 2.10 CD109 for 30-40mph design speeds

Design Speed (kph)	70	60	50
Min R with adverse camber and without transitions	1020	720	520
Minimum R with 2.5% superelevation	720	510	360
Minimum R with 3.5% superelevation	510	360	255
Desirable minimum with 5% superelevation	360	255	180
One Step below desirable minimum with 7% superelevation	255	180	127
Two Step below desirable minimum with 7% superelevation	180	127	90

- 2.66 As well as changing the step relaxations identified in MfS2, CD109 also updates the transition calculation, reproduced below. If Mr Wall and I might agree that the 90m radii (left) needed to enter the bridge from the north is a an acceptable 3-step *relaxation* and the approaching 180m radii (right) is a one-step *relaxation*, the transition between the right/left bends on the approach should include a transition of **256m** based on the length available this will constitute another DfS.

Equation 4.13

$$L = V^3 / 46.7qR$$

- 2.67 DMRB considers relaxations from standard within 1.5 x SSD of a junction as a DfS because these normally subtle changes to horizontal and vertical alignment can divert some of the driver's concentration to steering the vehicle. On the approach to the proposed highway works the driver will pass:
- A 30mph speed-limit gateway
 - A ghost-island right-turning lane junction
 - A pedestrian crossing,
 - A pinch-point for cyclists (at the refuge),
 - A shuttle-working traffic signal-controlled junction
- 2.68 I am reassured that the Road Safety Audit team were made aware of some of the DfS/RfS but, accepting the design stage, there are more and some of these cannot be mitigated satisfactorily.
- 2.69 My fear is that HCC have recorded 'potential' DfS/RfS relating to the highway geometry and state they have considered these. Whilst there is no evidence that the Appellant has presented information for HCC to consider, it is evident that these DfS are not permitted under MfS. On the face of it the Appellant, HCC and the Road Safety Auditors might apply professional judgement to these on a link road. As these DfS appear within junctions they attain an 'in combination' status in road safety terms and at an absolute minimum must be recorded.
- 2.70 In the evidence presented by Mr Wall and the correspondence received from HCC there is nothing that changes my view that modifications to the highway design proposals must be made.
- 2.71 If Mr Wall's references to MfS2 at 2.3.5 is intended to clarify one can apply judgements to Stopping Sight Distance (SSD), I agree and would suggest this is common ground with HCC. But the application to other 'potential' DfS relative to MfS must be clear. As HCC officers seem to confirm there is no record that all DfS have been considered nor documents and thus, in contrast with TG17, one cannot rely on these DfS/RfS which may affect the Inspector's decision at this appeal. Firstly, one must question whether or not the proposals will be safe and secondly consider whether they would compound the difficulty pedestrian might experience crossing Downend Road.

Crossing Assessment

- 2.72 At Image 3.1 Mr Wall adopts an extract from Chapter 6 of the Traffic Signs Manual (Ch6TSM). Under Table 15.1 Ch6TSM states "15.5.2. *Pedestrians should be able to see and be seen by approaching traffic. Different groups have different requirements – for example, wheelchair users and children may be harder for a driver to see as they are lower in the landscape.*"
- 2.73 As Mr Wall highlights in Tables 3.6 and 3.7 of his evidence the authors of Ch6TSM might be forgiven for attempting to simplify guidance so that designers can apply judgement. If we are to follow Table 15.1, we might consider the advice in Ch6TSM:

- Firstly, the recommended visibility distances for pedestrian crossings assumes:
 - At 35mph (15.6m/s) the recommended pedestrian visibility is 51m, requiring a crossing gap of 3.25 seconds.
 - 3.25 seconds at 1.2m/s = 4m
- Secondly, applying the MfS (Manual for Streets) calculation for a driver they will need to see the pedestrian at 54m.

2.74 At 9.4.4 Mr Wall refers to traffic platoons, because the A27 junction is signal controlled. Generally, Urban Traffic Management Control (UTMC) equipment is effective because traffic remains in platoons for around 200m after a traffic signal-controlled junction, therefore UTMC is often applied to a network or corridor to exploit free-flow conditions by linking traffic signals to provide what is more commonly known as a 'green-wave'. Beyond 200m traffic begins to fragment as drivers adjust to their preferred speed or gap. The proposed stop-line is around 340m from the A27 junction (circa 60 PCU).

2.75 At 3.6.52 Mr Wall suggests that traffic waiting at the junctions "...may inhibit visibility..." but that assumes that all pedestrians could see over all vehicles. To illustrate this a Ford Focus is 1.47m high thus most pedestrians would need to be at least 1.6m (5'3") tall to safely cross the road. In fact, for the vast majority of the time a pedestrian will only be able to see 52m (Drawing 8210511/6101A refers, amended to show driver visibility approaching the crossing). At best a pedestrian would be able to observe a 3.3 second gap in a traffic platoon. This affords absolutely no time to apply any judgement to cross.

2.76 As the shuttle-working arrangement would provide relative certainty there would be a vehicle waiting at the stop-line or moving through the junction, for much of the day, pedestrians must wait at least as long as traffic to cross.

2.77 Whilst it is correct that the traffic signals will slow some traffic, the prospect of meeting a wide vehicle on the bridge will not exist with traffic signals. I consider that it is more likely that vehicles advancing on a green light would accelerate out of the urban area towards the 40mph limit (as they do currently), which I have represented in Drawing 8210511/6106 based on balance of evidence I present at [??-2.57](#) of my evidence and those listed by Mr Wall in [??-2.5.5](#) of his.

Crossing Gaps

2.78 As Mr Wall highlights in 3.6.47 drivers will normally maintain a 2 second gap/headway in a traffic platoon so crossing movements will require highway users to see a gap appreciably longer than 2 seconds. As Mr Wall notes a recommended minimum visibility would provide 3.25 second gap to cross a 4m wide road.

2.79 At junctions, drivers accept gaps between 2.7-4.0 seconds, depending on driver age, reactions and vehicle length thus this became a material factor in reducing design standards in the form of visibility splays, as detailed in MfS.

2.80 Similar to 15.5.2 Ch6TSM, MfS applied some judgement to the ability for approaching drivers to stop (to avoid a collision) and for a vehicle to emerge. In striking this balance MfS considered a 1.5 second thinking distance so that an approaching driver might at least slow to avoid a collision, leaving enough time for a vehicle to emerge. At 15.6m/s the

MfS SSD is 54m. This accords with a gap acceptance of 3.5 seconds, accepting that an approaching vehicle could slow to avoid a collision.

- 2.81 At 5.15 and Table 6 of my evidence, I examine pedestrians crossing considering both the time to physically cross the road at the refuge island for the *north* and *south* section of Downend Road. Within this Table I apply pedestrian visibility with a 2 second gap acceptance for pedestrians and conclude that pedestrians would experience difficulty crossing the road in line with the HCC policy and must therefore include a controlled crossing.
- 2.82 Whilst I remain satisfied that a pedestrian requires at least 2 seconds to identify a gap in traffic, and Mr Wall accepts that a typical headway gap is 2 second, applying similar reasoning to MfS this might assist in clarifying the level of difficulty that pedestrians would experience when crossing Downend Road.
- 2.83 Based on Table 6 in my evidence I identified the minimum crossing time at the refuge as 2.9 seconds. If one applies just 1.5 seconds of thinking time, the design must preserve visibility in excess of 4.4 seconds or 67m to preclude the need for a controlled crossing.
- 2.84 In Section 3.6 Mr Wall explores the need for a controlled pedestrian crossing within the highway improvements. Amongst other things I note that the A27/Downend Road junction forms part of the safe route to (Cams Hill) school.
- 2.85 In response to my comments on pedestrian visibility and gap acceptance, Mr Wall considers a more conservative examination of pedestrian visibility at 3.6.65. His account of judging safe crossing gaps drew my attention to the presence of countdown signs at the A27/Downend Road junction which includes countdowns (see image right).
- 2.86 Responding to PIA data and supporting safe routes to school the Council introduced countdown signs to the pedestrian crossings at the A27 junction. Countdown signs formed part of an experimental road scheme trial, initially by Transport for London within installations from 2011-2016, with a rollout to busier outer London authorities from 2015. The purpose of the trial was to judge if the countdown signals reduce dangerous crossing behaviour during 'black-out' times at the end of a crossing phase.
- 2.87 At the end of the experimental period countdown signals became 'type approved' and available for other highway authorities to request exception until they are incorporated into mainstream design standards. At the end of 2019 Ch6TSM (section 11.12 refers) countdown signals were introduced.
- 2.88 In my opinion, the presence of such signs at the A27 highlights the sensitivity to pedestrian safety in the Portchester area and supports my opinion that the proposals must include a controlled crossing. In coming to that view, I consider that the A27 junction demonstrates that a PIA pattern occurred even where there was a *controlled* crossing so the proposition of an uncontrolled crossing where visibility is restricted on the same route to a school does not in my view, prioritise safe pedestrian journeys.



Conclusion

- 2.89 The proposition advanced by Mr Wall does not "*prioritise and encourage safe and reliable journeys by walking, cycling and public transport...*" Indeed, this is the same misunderstanding Mr Wall applies when referencing Satchell Lane decision at 4.5.10 of his evidence.
- 2.90 Policy CS5 is clear it seeks to "*prioritise and encourage safe and reliable journeys by walking, cycling and public transport...*" Having established the previous Inspector was unconvinced that the development would be accessible by the modes other than the private car, it is entirely within the policy and the Reason for Refusal to insist that the infrastructure made necessary by the development encourages 'safe' and 'reliable' journeys.

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3.0 Cyclists

3.1 In Section 2.4 Mr Wall explores observed pedestrian and cycle movements in 2016 before going on to demonstrate that the proposals are acceptable for this level of demand. Unlike pedestrians, the previous appeal did not examine the effect of cyclists, other than to incorporate these into the PCU forecast.

3.2 Whilst Mr Wall appeared to question if cyclists were highway users and then seemed to dispute their presence on the highway would affect the operation of the proposed traffic signal control junction it seems we are broadly agreed that cyclists will affect the junction and traffic signal control equipment will adapt the timings of the junction. This section therefore focuses primarily on forecast demand.

Forecast Cycle Demand

3.3 Based on the infrastructure proposed, I offered to agree pedestrian/cycle forecasts when working on our Statement of Common Ground, believing this would assist in negotiations on the identification of higher traffic generation forecasts. They did not. I considered it would be unethical to subsequently disagree with these in evidence and therefore framed my opinion in 5.2 of my evidence to demonstrate these are the Appellant's forecast and I considered them as representative,

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3.4 In Section 5.2 of his evidence Mr Wall refers to the TRICS database to substantiate that the development traffic forecasts are robust. For reasons outlined in Section 7 of my evidence I disagree.



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3.5 In fact, I believe this reliance enables me to justifiably return to TRICS to present cycle generation rates provided at Appendix C and summarised in Table 4.1 below.

Table 4.1 - TRICS Cycle Trip Rates – AM Peak hour trip rates

Site	Arr	Dept
Private Housing	0.006	0.017
Development	2	6

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3.6 Accepting that Access C is a footpath, cyclists can only use Access A & B. Accepting the previous Inspector opinion in paragraph 23 this will mean that the development would generate around 4 cycle trips during the peak hour, based on current levels of demand.

3.7 In Section 3.6 Mr Wall explores forecast growth in travel demand but having set such low demand, applies no growth. At 3.6.28 Mr Wall relies on existing data to suggest that cyclists will be irregular. As I have indicated in Section 2 above that is incorrect, one must plan for growth in travel demand.

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3.8 The Government's Cycling and Walking Investment Strategy (2019)³ states: "

"The Government's commitment to increasing levels of walking and cycling is welcome but its current targets are not ambitious enough, particularly for walking. Despite being the most accessible and widely undertaken form of active travel—and being part of almost every journey—walking is rarely given proper attention by policymakers and planners."

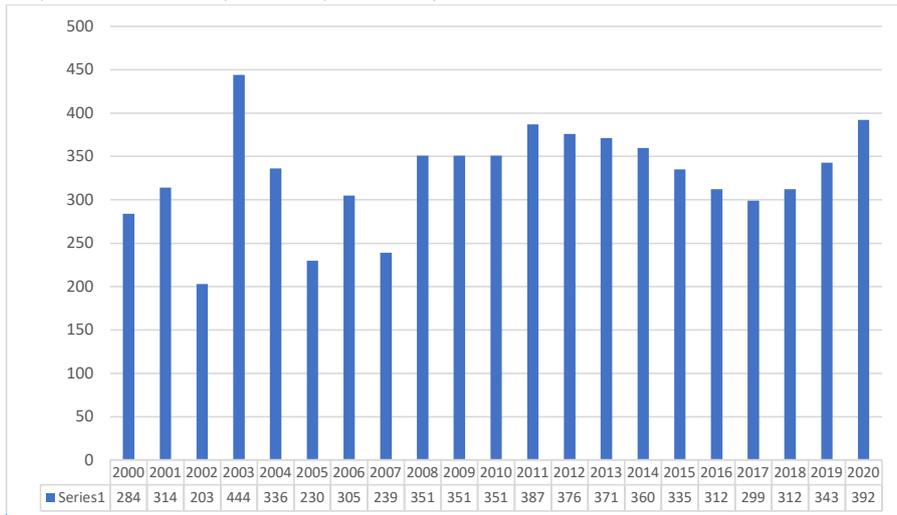
3.9 Supporting this aspiration is the Department for Transport (DfT) produced a Cycling and Walking Investment Strategy⁴. In this the DfT states: "Our objective is that by 2020, we will increase cycling activity..." [1.14] and "Further to this, we have set the following aims... target... to 2025: We aim to **double** cycling..." [1.15]. This would be within the design year forecast.

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3.10 Reflecting efforts to support education (cycle training) and Travel Plans it is useful to see the trend in cycle trips on the A27, depicted in Graph 3.1, Indeed the westbound flows highlight just a 25% increase since 2016, compared with a 42% increase in the eastbound direction. Even still the A27 data shows that cyclists represent just 3.6% of the traffic flow.

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Graph 3.1 - A27 AADT Cycle Flows (Westbound)



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3.11 My observation of local area and raised some questions which I explored with Sustrans. Although I was unable to elicit contact earlier enough to include this in evidence, I have sought to clarify the status of The Thicket and Downend Road detailed in Appendix D. Based on conversations with Sustrans I also identified a number of cycle groups and established that the Portsdown Hill is a popular leisure circuit. As part of the planning application the development is supported by a Travel Plan intended to encourage future residents to, amongst other things, cycle to school and local employment areas. Similar incentives are afforded to local employees through Travel Plans, similar to those proposed at the Appeal site.

³ [Active travel: increasing levels of walking and cycling in England - Transport Committee - House of Commons \(parliament.uk\)](#)

⁴ [Cycling and Walking Investment Strategy \(publishing.service.gov.uk\)](#)

3.12 Defence Science and Technology Laboratory (Dstl) is located on Portsdown Hill (PO17 6AD), roughly 2km northeast from the Downend Road Bridge. Dstl operate a Travel Plan, within which the following incentives are made available to staff:

- season ticket loans,
- cycle-to-work scheme - to save on the cost of a new bicycle or cycling equipment,
- discounted rates for civil service societies and healthcare,
- access to discounts available to Ministry of Defence employees; and
- dedicated car-sharing spaces and a comprehensive car-sharing scheme

3.13 At one of their main sites Dstl also provides a shuttle-bus service, which connects the site with Fareham railway station. Indeed, of the buses on Downend Road I noted that most were displayed signs indicating the nature of services as being associated with home-to-school services or Dstl.

3.14 Before I attempt to draw any conclusions on cycle demand to inform the assessment of future conditions, I would first note that the Transport Assessment records that most of the transport surveys were undertaken in November or December. I might therefore highlight that these are not neutral months but, taking account of the significance of school traffic on Downend Road, do accept they are representative of network traffic flows. I would not however consider data in early winter as representative of cycle trips. Having examined comprehensive datasets in Oxfordshire I can conclude that cycle demands are significantly higher between May and October.

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3.15 If the Travel Plan is only part of a series of measures to meet Government targets, one should expect the development to generate at least 8 cycle trips during the peak hour over Downend Road bridge by 2026. If network cycle demand does not exceed 4% of the traffic flow, then cyclists would cross Downend Road bridge every 1½ - 2 minutes, reflecting the assumptions I applied in Table 14 of my evidence.

3.16 Within the Government targets is an aspiration to 'Go-Dutch' by 2031, lifting cycle mode shares from 2-4% typically toward 12-16%. There is no certainty that this can be achieved but it is clear from the A27 data that cycle trips have increased and will continue to do so. Working towards a sustainable transport network, with investment being accelerated in line with LCWIP, it would be reasonable to expect cycle trips over Downend Road bridge to reach one every 2 minutes.

4.0 Assessment of Highway Operations

Emerging Local Plan

- 4.1 In paragraphs 3.4.2-3.4.4 Mr Wall refers to Mayer Brown, their role in the previous appeal and their response to the emerging Local Plan, relative to the Land East of Downend Road (site HA4, the appeal site).
- 4.2 He quotes the assessment presented "...by i-Transport using industry standard software *LinSig*." There is no suggestion that Mayer Brown has interrogated the development and forecasts traffic to the level of detail I have, so it is understandable that it offers a caveated response to the potential "...allocation of HA4 should not result in any unacceptable highway safety impacts or severe residual cumulative traffic impacts...".
- 4.3 I agree with Mayer Brown, it 'should' be possible to develop site HA4 to provide safe highway improvements and it may be possible to deliver these in the form of shuttle-working traffic signals. When considered as part of a series of Local Plan allocations it 'should' be possible for HA4 to be delivered early in the emerging local plan period, anticipating that development west of Downend Road (HA56) will be delivered along with a highway link to Junction 11, M27 sometime before 2037.
- 4.4 As part of the Local Plan process, it 'should' be entirely reasonable for FBC to forecast housing land supply, against its infrastructure delivery plan and the emerging Community Infrastructure Levy, testing assumptions through Examination in Public. Following this approach FBC would be able to consider the balance of harm and if necessary, review the viability of developments on Downend Road and any effect from other development allocations that might contribute towards necessary mitigation.
- 4.5 As part of the Local Plan evidence FBC 'should', appropriate to the stage in planning, be able to consider levels of harm from the delivery of housing sites east and west of Downend Road. In preparing their Local Plan FBC might contemplate development and infrastructure scenarios and relative to a series of forecast design year horizons contemplate levels of harm to strike a planning balance. Of course, such a plan may require FBC (and others such as HCC) to develop contingency options such as securing of infrastructure funding to accelerate the delivery of the highway link to Junction 11 if this might not be viable for site HA56 to fully fund this and other necessary mitigation measures.
- 4.6 Considering the information available for the Local Plan forecast year (2037) and presented by i-Transport, I believe it is entirely reasonable for Mayer Brown to have considered the junction assessment presented to them, for a forecast year of 2026, and take this at face value. They might have justifiably applied some judgement as to the delivery of the new link road to J11 M27 by the end of the Local Plan period and considered that some of the housing (included at HA56) could be delivered without adversely affecting the Downend Road bridge.
- 4.7 As the application and appeal advances under DSP40, housing land supply, FBC is obliged to consider the site on its merits of the proposals *without* the confidence that a highway link to Junction 11 is deliverable or viable. When FBC considered the application, Members were not convinced by the information presented in the application and determined the application accordingly.

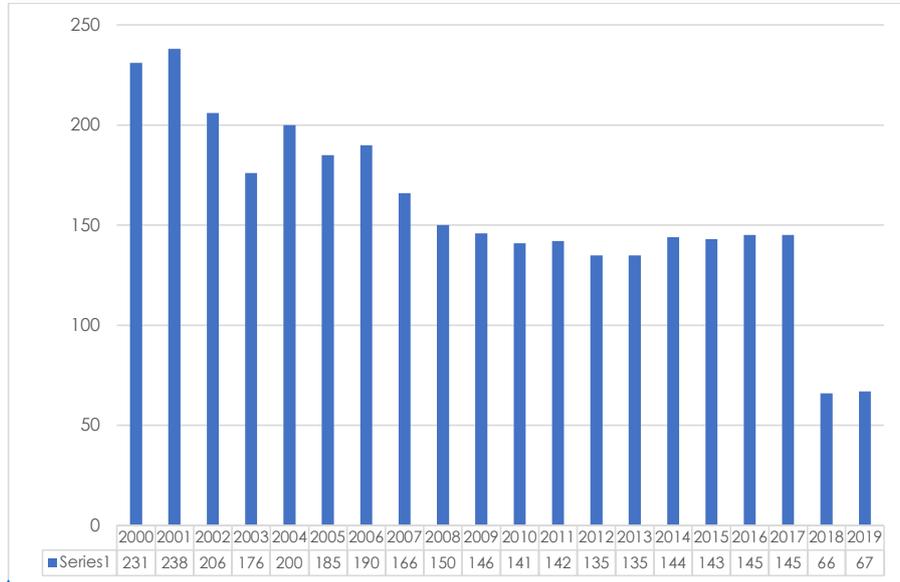
- 4.8 I am satisfied Mayer Brown offered a considered response, appropriate to the stage in planning, but on closer inspection I have established:
- [In my proof of evidence 2.34-2.42] there are inconsistencies in the Appellants development and traffic forecasts used to assess the Downend Road proposals;
 - I have clarified that the highway proposals do not comply with the current standards (agreed in the Transport Statement of Common Ground (TSoCG)); and
 - I have established that HCC considered the highway improvements on Downend Road based on standards and guidance [Appendix E refers] that have been superseded.
- 4.9 It is right that I, on behalf of FBC, examine all relevant material considerations and present these findings to the Inspector so a decision can be made on the planning balance. Whilst the response by Mayor Brown might be considered to support the Appellants argument, I believe it has been taken out of context.

Traffic Flows

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- 4.10 ~~In the Statement of Case the Appellant stresses that the observed traffic flows have been converted in Passenger-Car Units (PCU) adopting industry standards.~~
- 4.11 ~~In Section 2.3 Mr Wall devotes more effort to illustrate the vehicle classification on Downend Road to demonstrate that the conversion of the traffic data to PCU uses robust factors.~~
- 4.12 ~~I agree these are robust but as he notes in 2.3.5 very few of the vehicles on Downend Road are commercial vehicles. There are very few commercial vehicles on Downend Road because the section between A27 and the railway bridge is subject to a 7.5 Tonne Weight limit. These commercial vehicles on Downend Road include a small proportion of vehicles within that weight limit and a few HGV with access right exceptions, otherwise the bulk of traffic includes a mix of private cars and light goods vehicles.~~
- 4.13 As noted in Section 4 there are seasonal variations for some modes, but I accept that the surveys were representative of conditions. When we look at traffic flows in the surrounding area, we can see from Graphs 4.1 to 4.3 that Average Annual Daily Total (AADT) traffic flow composition has changed in recent years accepting also that some of the dramatic changes in demand reflect estimates (based on previous periods) when the counter was not operational for the year.

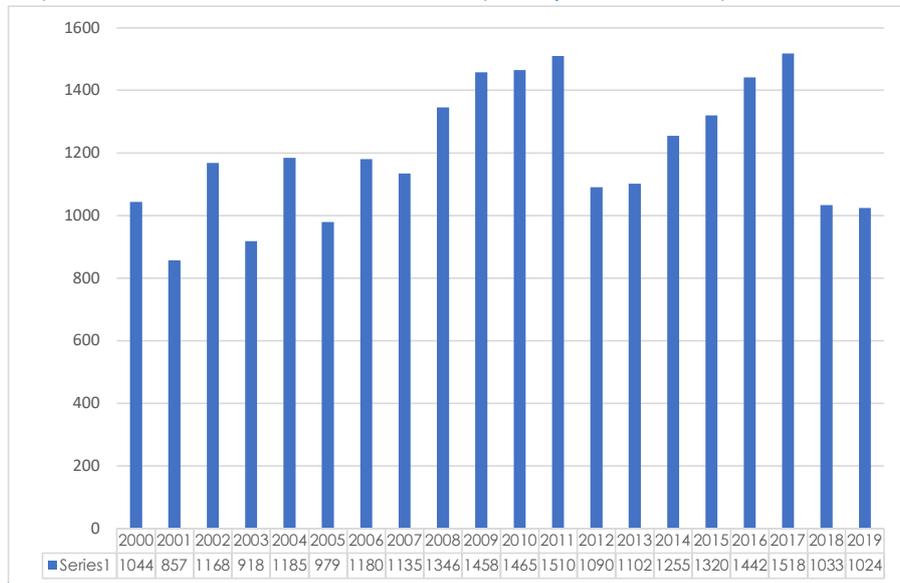
Graph 4.1 – A27 HGV AADT Westbound Traffic Flows (ATC adjacent The Thicket)



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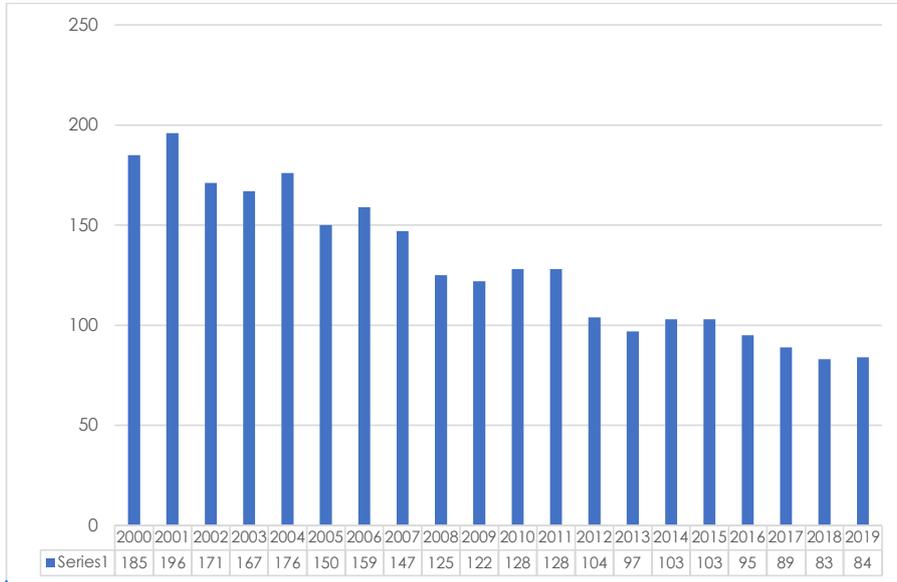
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Graph 4.2 – A27 LGV AADT Westbound Traffic Flows (ATC adjacent The Thicket)



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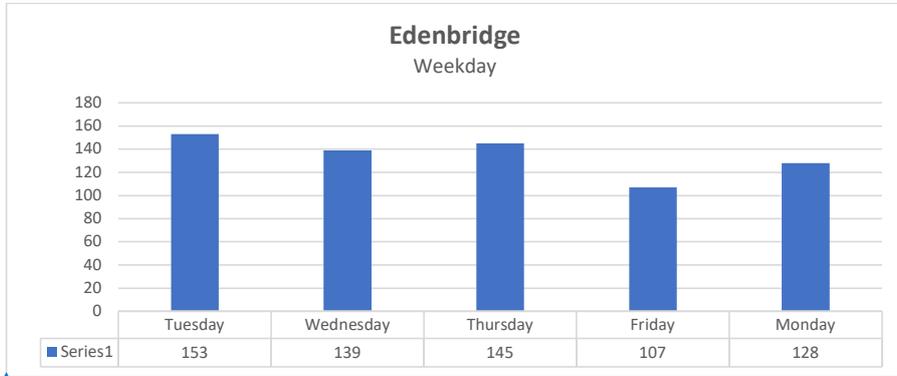
Graph 4.3 – A27 Bus AADT Traffic Flows (ATC adjacent The Thicket)



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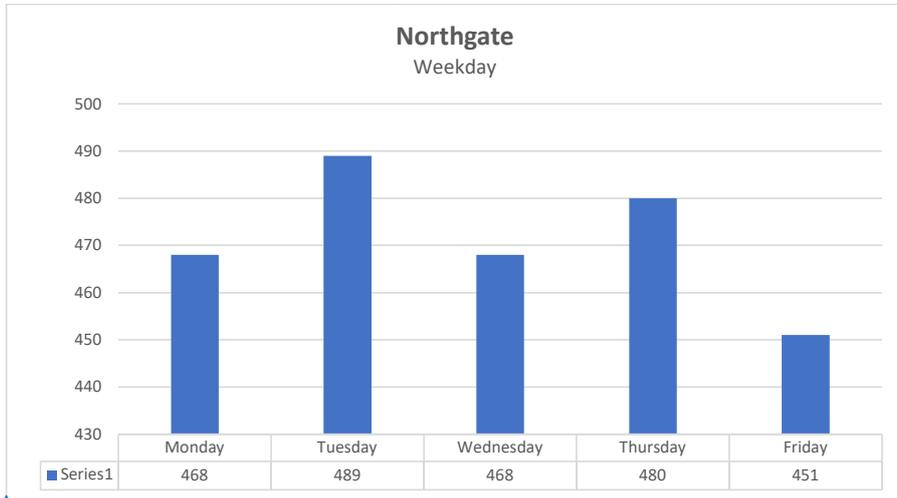
- 4.14 — Whilst Graphs 4.1-4.3 depict declines in commercial traffic nearby, including buses, they show that there has been a corresponding leap in other traffic, even with significant marked increases in cycle traffic, depicted in Graph 3.1, and reductions in bus traffic.
- 4.15 — In terms of presenting robust traffic forecasts it would be more relevant to examine the peak periods in closer detail, picking up on the observed flow patterns illustrated in Graph 2.1 and Table 2.1. These record flows for the 'five-day weekday average' suggesting on some days the peaks were sometimes lower, but crucially higher on other days.
- 4.16 — To help illustrate this I have randomly selected two ATC's to illustrate the variation in traffic flows across a 5-day week. Graph 4.4 shows the Eastbound traffic flow during the 8-9am time period for a (school-day) week at the end of April, where the 5-day average flow was 134 vehicles, but the data range has a daily variation of +14.2% or -20.1%.
- 4.17 — Graph 4.4 shows the Eastbound traffic flow during the 8-9am time period for a (school-day) during the same week in April, where the 5-day average flow was 471 vehicles, but the data range has a daily variation of +3.8% or -4.3%.
- 4.18 — Whilst Graphs 4.4 and 4.5 show significant and subtle variations in traffic flows, from experience it is normal for weekday traffic flows to vary +/- 7% across the week, indeed it is frequently the case that Mondays and Fridays are lower than Tuesday to Thursdays. When one considers the Appellant relies on the use of average weekday traffic, one must accept that subtle variations in flow could and indeed will be more significant at the proposed bridge junction.

Graph 4.4: Weekday Flow Variation, Edenbridge, Kent



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Graph 4.5: Weekday Flow Variation, Northgate, West Sussex



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Forecast Design Year

- 4.19 In paragraphs 3.6.7 and Appendix G Mr Wall refers to an appeal case where the Inspector in considered the use of forecast years 2026 and 2031 for development in Didcot and concluded that 2031 was for information. Mr Wall does not set the context of that decision and that is not entirely clear from the Inspectors report.
- 4.20 Like Fareham, at the time of the decision, the South Oxfordshire Local Plan was emerging Local Plan, which as the Appeal Transport Assessment scoping note suggests will be the default forecast design year.
- 4.21 At the Didcot Appeal, the Inspector was obliged to consider the addition of 350 dwellings within a target provision of 15,000 in Didcot Garden Town, but it was primarily the impact on landscape and the AONB that led to the dismissal of the Appeal. Whilst the Inspector concluded a forecast year of 2031 was information this opinion will have been considered as follows:

- Firstly, the local strategic traffic model considers development and infrastructure in forecast design years of 5-year intervals, including 2026 and 2031
- when considering the need for infrastructure one, as I say at paragraph 4.2 of my evidence, consider forecast (un)certainty
- then, contemplate the likely delivery timescales of either development or infrastructure to inform the scale of harm that might arise from allowing/refusing development with/without that infrastructure,
- In weighing the planning balance, one needs to consider the Infrastructure Delivery Plan, forming part of the Local Plan evidence base, and the development to judge the harm

4.22 In the Didcot case the Inspector was asked to consider a windfall development of 350 homes within a scale of 15,000 at Didcot (2.3%) the key difference being that in addition to Growth Funding, Oxfordshire County Council were awarded Housing Infrastructure Funding (HIF) to deliver a significant road scheme in Didcot (£234M)⁵, together this funding will enable the delivery of strategic transport improvements in Didcot by 2024, amongst other things including a bridge over the railway (in Didcot) and a next River Thames crossing (at Clifden Hampden providing an alternative to the shuttle-working bridge, identified in Appendix C of my evidence).

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4.23 Understanding that context, and not being provided with justification for why it is important to consider a future year, the Inspector considered that a forecast year of 2031 would be for information only. That is not the case with Downend Road, Fareham, which I expand below/above relative to the Mayer Brown response to the emerging Local Plan allocation.

Development Traffic

4.24 In Section 5.2 Mr Wall explores the use of TRICS data and presents various forecast scenarios to reflect development traffic. At Appendix C I have added research I conducted of all medium/large housing development sites available on the TRICS database, recording how traffic generation rates vary.

4.25 What this table reveals is that some TRICS sites may have lower traffic generation in one time period (7-8am; 8-9am) but across the peak period these are fairly consistent. I note Mr Wall's assertion at 5.3.19 relating to Condor Avenue but having derived traffic generation rates from the immediate local area, during the same peak hour, I must conclude this is the most representative of the development site. Indeed I have taken care to contemplate housing mix and not that many of the homes in 'The Thicket' Cordon are bungalow and more likely to be occupied by more mature (potentially retired) persons rather than families.

Traffic Forecasts

4.26 In evidence I acknowledge that I struggled to follow the Appellants development and network traffic forecasts, presented in the Transport Assessment. Having established that the development traffic was applied (as I explain in Paragraphs 7.17-7.21 of my PoE) I took

⁵ [Didcot Garden Town Housing Infrastructure Fund | Oxfordshire County Council](#)

the appellants forecast traffic for 2026 and applied growth to 2031 using TEMPro, replacing the development traffic as detailed in Section 7 of my evidence.

- 4.27 — At Table 3.3 the Appellant presents a comparison of TEMPro forecasts depicted the growth rates in the Transport Assessment and the latest version 7.2 and describe a methodology to deduct proposed development (at Downend Road and Cranleigh Road) from other planned growth.
- 4.28 — Appendix H reports to details of the forecast traffic in the morning and evening peak periods for Geographic Area Fareham 010. Under the section noted as 'Assumptions', a table depicts base household (HH) of 3551 and under 'Current Assumptions' 4009 or the Appellant's 'Adjusted Assumptions' 3551, reflecting no development growth within the geographic study area.
- 4.29 — Seeking to verify the Appellant's methodology I tried to recreate these using TEMPro, considering both the Geographic area (as suggested) and comparing this with Fareham and Portsmouth. As I began to interrogate the differences I noted *"Italicised results indicate there is a lower level of confidence in the data presented at the zonal level than when aggregated to higher geographical levels."* Shown in image 4.1 below.

Image 4.1: TEMPro Screenshot

Planning Data		< 16	16 to 74	75+	Total	HHs	Jobs	Workers
Authority	Fareham	20730.0	83498.0	18703.0	122931.0	54939.0	63195.0	56553.0
E02004736	Fareham 010 (E02004736)	<i>1233.0</i>	<i>6097.0</i>	<i>1438.0</i>	<i>8768.0</i>	<i>4009.0</i>	<i>1427.0</i>	<i>4021.0</i>
Authority	Portsmouth	41322.0	166992.0	18787.0	227101.0	100716.0	135590.0	108022.0

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- 4.30 — Such an approach would assume there is no housing growth expected in the geographic area. With no change to jobs the proposition advanced by the Appellant is there is no other development in the immediate area before 2031. If site HA56 were to take 7 years to build out before the end of the Local Plan period, at least 160 dwellings would be complete by 2031.
- 4.31 — Trying to explore why it might not be possible to apply TEMPro to arrive at a statistical confidence I examined the housing and jobs in Fareham and Portsmouth generally and found the growth rates were similar to the localised geographic area. Given the scale of housing contemplated in Portsmouth city (>10,000, with strategic sites nearby) I considered it might be reasonable to apply the same adjustment methodology to the Borough or City growth rates. Advancing this approach, I concluded that the traffic flow forecasts were similar to those I presented in evidence.

Signal Operation

- 4.32 In the Statement of Case the Appellants repeat (6 times) that the application uses LinSig software to assess the proposed shuttle-working traffic lights at the Downend Road bridge. At 3.5.2 the Appellants reiterate references to the presentation of LinSig modelling. Indeed, the Appellants have submitted several letters to PINS recording FBC delays in the provision of information, including updated modelling.

- 4.33 At 3.2.5 the Appellants now suggest that the proposed shuttle-working traffic signal control would include MOVA control, going on to suggest at 3.3.7 *"It is not possible to fully reflect MOVA operation in LinSig"* I agree.
- 4.34 The Appellants were anxious to establish in the TSoCG that LinSig is the most appropriate software for modelling the operation of the signal-controlled shuttle-working bridge, Again, I accept this, but I also believe, and it seems the Appellants and HCC now agree, a modern signal controller will operate on variable demand. With MOVA control the controller will vary the available cycle time (up to a maximum of 120 seconds) and spread the green-time to minimise queues or delays.
- 4.35 At 3.6.3 The Appellants note that the signals *"...would include the necessary and appropriate detection technology to address the presence of slow-moving vehicles..."* This is consistent with paragraphs 6.10- 6.16 of my evidence and my observations of comparable equipment at other shuttle-working traffic lights presented in Appendix C of my evidence. Whilst Mr Wall continues to make various assertions on the forecast scenarios it is the sensitivity of these variations in demand that FBC have sought to protect.
- 4.36 The Appellants are willing to accept that an extra effective green (EEG) or red extension would be implemented by MOVA but contrary to the agreed (TSoCG) acknowledges that LinSig would not be able to replicate the operation of a MOVA controlled junction.
- 4.37 Mr Wall, HCC and I are largely agreed on some matters although we seem to approach these from different perspectives.
- 4.38 I believe we are agreed:
- The Downend Road shuttle-working traffic lights would be a small and simple junction
 - There is a small uphill gradient (south to north at the junction, although the approaches north and south are steeper).
 - "There are no site-specific requirements that would lead to the need to include a cycle phase..." [Mr Wall's Evidence 3.6.20]
 - "The proper approach is to ensure the delivery of suitable detection equipment at the junction... which will call an extension to the intergreen period..." [Mr Wall's Evidence 3.6.24]
 - Signal timings will need to be validated on site
 - Timings on site must ensure there is sufficient time for cyclists to clear
- 4.39 Unfortunately, these points of agreement however do not support his assertion that these are no "...specific allowance for cycling clearance." There is no single mention in CH6TSM of shuttle-working traffic lights. They do not appear in DMRB or MfS. As Mr. Wall claims at 5.6.65 there are times when a designer must apply 'judgement'. 'Is it safe to allow a cyclist to continue head-on along a 3m wide carriageway towards on-coming traffic?' If the answer is 'no', and I think Mr Walls reference at 3.6.19 (repeated below) suggests he agrees, the design and model forecasts must consider these arrangements.

"12.2.1.... At all junctions where cyclists are present, timings should be **validated on site to ensure the available clearance time for cyclists is correct.**" [my emphasis]

- 4.40 Furthermore I believe we are agreed it is impractical to wait to see if the junction would operate satisfactorily in the forecast year given that the delivery of the highway improvements is predicated on the appeal being allowed which is why I have worked hard to satisfy a range of scenarios that will ensure the highway proposals can be modified to be safe and operate satisfactorily.
- 4.41 In Appendix C of my evidence I have pointed to some shuttle-working arrangements where very few cyclists are present because an alternative route is available, identified on local maps and/or signed on approaches.
- 4.42 ~~Having sought to agree (in the TSoCG) I have avoided straying outside the agreed modelling methodology and presented in Table 4.1 a validated approach to LinSig Assessment provided in Appendix D of my PoE, I have manually recreated the results to present how variations in signal timings and flows might affect the junction in a single cycle.~~

Table 4.1 – Validated Assessment of a single cycle

Stage	Cycle Time =120 Seconds	Saturation Flow (PCU/hr)	Capacity (for cycle)	
			PCU/hr	PCU in cycle
Stage 1 South	36	1705	554.1	18.5
Inter-green	14			
Stage 2 North	34	1915	558.5	18.6
Inter-green	16			
Pedestrians	6			
Inter-green	8			

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4.4143 Based on the demand flow reported in Table 4.1 the cycle capacity is:

- 140 PCU (in 15 minutes) is equivalent to 560 PCU/hr (south)
 - 560 ÷ 554.1 = 101.1% of capacity
- 138 PCU (in 15 minutes) is equivalent to 552 PCU/hr (north)
 - 552 ÷ 558.5 = 98.8% of capacity

4.4244 As the result show the southern approach would be over capacity so successive cycles with a cyclists passing through the junction with a pedestrian crossing demand in each cycle would result in the junction unable to clear traffic flows in one 120 second cycle, with the result that residual queues waiting to cross the bridge in the next cycle – effectively a vehicle arriving at the end of the green signal for a previous period being delayed for over 2 minutes to clear in the next cycle.

4.4345 I agree with Mr Wall that cyclists will not appear in every cycle (9.3.2), for the reasons outlined in Section 2. I might concede that Mr Wall (3.6.84) pedestrians will not require a crossing in every cycle but for reasons outlined it is reasonable to assume that pedestrian would be more reliant on a controlled crossing because of restricted visibility.

4.4446 As Mr Wall and I seem to agree the MOVA controller will not need to provide EEG for cyclists in every cycle. Without cyclists requiring EEG, the inter-greens could drop to 10 seconds, providing enough green-time in the cycle to clear the residual queue in the next cycle.

4.4547 Having established that the traffic forecasting was unreliable and daily and seasonal flow variation were a factor in the available evidence, as is the effects of peak spreading (see also Appendix C of this rebuttal). I did not see that continuing to dispute pedestrian/cycle movements would assist the inquiry. Taking account of the agreed TSoCG and use of LinSig I opted to consider a simplified approach to traffic signal cycles.

4.4648 To reflect Mr Walls position I have contemplated in Table 4.2 the effective of a successive cycle where MOVA removes the need for EEG for cyclists, thereby enabling the junction to clear and thus quickly reduce the queues (depicted in Drawing No. 8210511/6105) so that MOVA can then reduce the cycle time and minimise delay.

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Table 4.2 – Successive Signal Cycle after a cyclists has passed through the junction

Stage	Cycle Time =108 Seconds	Saturation Flow (PCU/hr)	Capacity (for cycle)	
			PCU/hr	PCU in cycle
Stage 1 South	36	1705	612.5	17.5
Inter-green	10			
Stage 2 North	34	1915	589.2	17.0
Inter-green	10			
Pedestrians	8			
Inter-green	8			

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4.4749 Based on the demand flow reported in Table 4.2 the cycle capacity is:

- 140 PCU (in 15 minutes) is equivalent to 560 PCU/hr (south)
 - 560 ÷ 615.7 = 91.0% of capacity
- 138 PCU (in 15 minutes) is equivalent to 552 PCU/hr (north)
 - 552 ÷ 620.6 = 88.9% of capacity

4.4850 In paragraph 3.6.48 Mr Wall accepts that traffic would not be able to pass a cyclist within the junction and contemplates (based on his LinSig scenario) that a cyclists might be followed by 7-8 vehicles. If the signal controller provides an EEG for cyclists there will still be a further 7-8 vehicles behind the cyclists so this will effectively lose green-time for the opposing traffic flow. To reflect this, Table 5.4 considers the 16 second inter-green for cyclists along with a further 14 seconds (at the end of Stage 1) to allow traffic to clear.

Table 4.3 – Signal Cycle with a cyclist delaying traffic through the junction

Stage	Cycle Time =108 Seconds	Saturation Flow (PCU/hr)	Capacity (for cycle)	
			PCU/hr	PCU in cycle
Stage 1 South	34	1705	497.3	16.6
Intergreen	30			
Stage 2 North	340	1915	494.7	16.5
Intergreen	10			
Pedestrians	8			
Intergreen	8			

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4.4951 Based on the demand flow reported in Table 4.3 the cycle capacity is:

- 140 PCU (in 15 minutes) is equivalent to 560 PCU/hr (south)
 - 560 ÷ 497.3 = 112.6% of capacity
- 138 PCU (in 15 minutes) is equivalent to 552 PCU/hr (north)
 - 552 ÷ 494.7 = 111.6% of capacity

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4.5052 Critically such an event will result in residual queues of 2+ vehicles on each approach. Whilst Policy CS5 and Ch6TSM would suggest it is right to prioritise cyclists, Table 5.4 Highlights why, at 3.6.38, Mr Wall might be reluctant to agree that an Advanced Stop-Line be included in the junction design.

4.6053 In Evidence I have highlighted that peak spreading occurs in the surrounding area and I have demonstrated how the Appellant has presented the development traffic forecasts. In Graphs 4.4-4.5 of this rebuttal, I have highlighted how daily flow variation will be a further factor such that one can easily imagine how subtle changes in demand could be significant to the operation of the highway.

4.61 ~~54~~ During my site visit I observed several traffic platoons for short but sustained periods of at 10 vehicles per minute (2021, without development). To reflect how subtle increases in traffic demand over a short period could significantly alter conditions I have shown the effect of 11 vehicles per minute (equivalent to 656/hr), assuming that a cyclist does not hold up the platoon of traffic passing through the junction at the end of the traffic queue.

4.62 ~~55~~ Consistent with Table 4.2, the effect of two cyclists passing through the junction during this period would be enough to tip the junction over capacity but with excess queues of just 3-4 vehicles in that cycle. In such a scenario with no cyclists through the junction MOVA would take 3 cycles (5 ½ minutes) to recover to operate within capacity before it would be able to restore the junction to operational capacity.

4.63 ~~56~~ Taking account of the range of scenarios considered I remain satisfied that the highway operations on Downend Road will be adversely affected and conditions will, at times, be severe.

5.0 Conclusions

Pedestrian Crossing

- 5.1 I have reviewed the points made by Mr Wall and the case he advances for an uncontrolled crossing, along with the opinions expressed by HCC. I accept that pedestrian demand is low currently but to advance sustainable development one must provide infrastructure to support sustainable/active travel which is a view the previous Inspector supported.
- 5.2 In referencing the Satchell Lane case I believe Mr Wall demonstrates his misunderstanding of planning policy which is why he comes to the view that an uncontrolled crossing is adequate. The FBC policies are constructed to ensure that proposals deliver safe and reliable journey's for pedestrians and I have shown the proposals are not safe. I do however accept that it would be reasonable to amend the highway improvements to reflect HCC policy to integrate these into an adjacent junction and I have considered this again in my rebuttal.
- 5.3 I have seen nothing in the information or evidence provided that dissuades my opinion that a controlled crossing is necessary. If the appeal were allowed, I remain firmly of the view that a crossing must be provided, and it can be integrated into the traffic signal-controlled junction.

Cyclists

- 5.4 I have reviewed the points made by Mr Wall and the case he advances for discounting the needs of cyclists within the proposed highway improvements. I accept that cycle demand is low currently but to advance sustainable development one must provide infrastructure to support sustainable/active travel which is a view the previous Inspector supported.
- 5.5 In considering the balance of safety and to comply with policy CS5 and DSP40 I agree the Downend Road proposals can be modified to preserve some cycle amenity. I believe Mr Wall, HCC and JCT accept that equipment can and should be integrated into the junction to protect cyclists and that this equipment can provide extra effective green-time for cyclists, when needed, but these will have traffic implications

Highway Operations

- 5.86 In the Appellants Statement of Case the Appellants reiterate that LinSig is an appropriate assessment tool to assess the proposals at Downend Road. In evidence Mr Wall considers the effect on traffic before he has considered the implications of pedestrian crossing and cycle demand before going to dispute their effect.
- 5.97 I suggest this is incorrect. To reflect the policy tests, one should prioritise the safety of pedestrian, cyclists and public transport users first to support sustainable development.
- ~~5.108 Having established that the junction is likely to be constructed with MOVA control the Appellants assert that it is not possible to model the effect and operation of the highway network.~~

~~5.119~~ ~~Constructed correctly the assessment scenario with forecast increases in demand for all highway users will result in traffic implications that represent appreciable delays at some times and severe conditions at others.~~

Overall Conclusion

~~5.1810~~ The development results in a material increase in pedestrian and vehicular movements on Downend Road.

~~5.1911~~ The Downend Road proposals are unsafe contrary to Policy CS5 of the adopted Fareham Borough Local Plan Part 1 which is only permissive of development which "*does not adversely affect the safety and operation of the strategic and local road network, public transport operations or pedestrian and cycle routes*". For the same reasons the appeal proposal conflicts with paragraph 110(c) of the NPPF.

~~5.2012~~ Based on an assessment of forecast conditions I have concluded that the shuttle-working bridge will operate above capacity; creating conditions that will be 'severe' contrary to paragraph 109 of the NPPF and adversely affecting the operation of the road network and cycle routes contrary to local plan Policy CS5 as set out above.

~~5.2113~~ My evidence shows that it is clearly the case that the appeal proposal has unacceptable traffic implications and therefore fails to comply with the relevant test in Policy DSP40 (v) of the adopted Fareham Borough Local Plan Part 2.

~~5.2214~~ For the reasons I set out above, I respectfully suggest that the sound transport planning judgement must be to dismiss the appeal.

Appendices

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