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Supplemental Rebuttal Evidence of Mr T Wall

Project No: ITB12212
Project Title: Land East of Downend Road, Portchester
Title: Supplemental RPoE
Ref: ITB12212-067b
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SECTION 1 Context

1.1 Whilst there are elements of genuine Rebuttal presented, much of the Council's Rebuttal Proof of Evidence (RPoE) presents new material to support arguments made in earlier evidence or to respond to issues raised in the Appellant's SoC, rather than responding to points raised in my PoE. In particular:

- **Highway Design** – many pages are devoted to re-stating the Council's position on design elements, and the relationship between MfS and DMRB. A raft of HCC Policy and Guidance documents are presented, as well as further assessments on horizontal alignment, on junction intervisibility and introducing new concerns on accessing 28 Downend Road;
- **Vehicle Speeds** – the Council supplements its PoE with additional information and assessment on the change in vehicle speeds on Downend Road;
- **Traffic Flow Profiles** – new traffic data is presented to support the Council's earlier case for an alternative assessment, now seeking to raise uncertainty as to the use of the baseline data;
- **Mayer Brown Review** - the Council now seeks to diminish its own report of the site prepared by Mayer Brown (included in the SoC);
- **Pedestrian and Cycle Demand** – the Council fundamentally changes its position on pedestrian and cycle forecasting despite these being agreed in the TSoCG; and
- **Traffic Assessments** – the Council uses the RPoE to present a suite of new traffic assessments of the Downend Road Bridge, which now consider the impact of a singular '*worst case*' cycle of the junction, which should have been provided as part of the traffic modelling work in its amended Statement of Case and in its Evidence.

1.2 I do not intend to provide a written point-by-point Rebuttal of Mr Lewis' RPoE with the main principles of the Council's case already addressed in my Evidence. However, in view of the new matters raised or arguments further developed, I set out my position on the key elements of the RPoE to aid the Inquiry.

SECTION 2 Highway Design Considerations

2.1 Under Section 2 (2.27-2.71), where Mr Lewis considers Pedestrians, he presents a significant body of evidence relating to highway design elements. In practice this has little to do with pedestrians and really seeks to restate and enhance the Council's position on highway design elements, particularly:

- The recording of design decisions / Departure from Standards
- The design speed of Downend Road
- The horizontal alignment of the Downend Road South approach

2.2 In terms of the recording of design decisions / Departures from Standard (DfS), much of this has already been laid out in evidence. The difference between Mr Lewis and I (and HCC) is primarily what design standard to apply to the scheme. Mr Lewis starts with DMRB (the standard for Trunk Roads) and advocates that anything other than DMRB standard design needs to be recorded either as a Departure or a Relaxation from Standards. My evidence sets out that DMRB is not the appropriate starting point or design standard to apply to a scheme affecting the local road network, and instead MfS / MfS 2 is the appropriate guidance, a position HCC clearly agree with (TW RPoE APP GG). Against MfS, there are unlikely to be considered to be any Departures from Standard to be recorded.

2.3 Mr Lewis has included correspondence from HCC (AL RPoE App E) which confirms to the Council that:

- HCC has considered the scheme against relevant design guidance and standards;
- the scheme is unlikely to include Departures from Standard; and
- If there are any Departures required, they expect these to be agreed.

2.4 Mr Lewis seems intent to ensure that all / any potential Departures from DMRB are formalised at the concept design stage (i.e. Planning), in many cases appearing to be more concerned about the process than the impacts of his alleged Departures on the safety of the scheme. I would note:

a Whether there are DfS in the scheme depends on the design guidance applied; and

b Mr Lewis' suggested approach (i.e. that all DfS are processed at the Feasibility Design Stage) does not follow the normal chronology of the Section 278 process in Hampshire. DfS, when these exist, are ordinarily progressed at either the Preliminary Design or the Detailed Design Stage. Nothing in HCC's TG17 requires DfS to be determined at the Feasibility design stage.

2.5 The scheme has been subject to detailed scrutiny at all stages, having been considered in detail by HCC's Development Planning Officers, Engineering Consultancy, ITS Section, Traffic Management Teams and Safety Officers. As has been explained to Mr Lewis, this includes HCC's Chief Engineer.

2.6 In terms of matters of detail raised by Mr Lewis, I would note:

- **Intervisibility / Forward Visibility** - Mr Lewis presents new Drawing 8210511/6107 to raise his concerns about the intervisibility of the junction (para 2.44). I have already addressed Intervisibility in my RPoE (para 7.2.30) explaining that the scheme is not a conventional traffic signal junction where a DMRB compliant intervisibility envelope is needed, clearly exemplified by the limited intervisibility achieved by most of the examples of similar arrangements that Mr Lewis presents in Appendix C of his PoE. In practice:
    - Mr Lewis' drawing demonstrates that the scheme has good forward visibility through the junction, showing a forward visibility splay of 51m commensurate with a 34mph design speed. Any vehicles on the bridge will be visible to approaching drivers;
    - There is good intervisibility between northbound and southbound traffic streams with clear sight across the bridge to the opposing traffic stream, the bridge, and of the footway. At **Appendix A** I present a further drawing (ITB12212-GA-080) which demonstrates the intervisibility achieved between opposing vehicle streams; and
    - The scheme is no different to the 2019 Appeal Option 3 scheme where intervisibility to and through the junction was more important, with traffic controlled by priority working and not traffic control. FBC raised no such concerns, nor did the Inspector.
- Access to **Number 28 Downend Road** - Mr Lewis raises new concerns about access to number 28 (para 2.46). This is clearly a matter for the Detailed Design Stage, but it is not unusual to have private accesses entering into signal junctions, and this is simply addressed by including detection equipment at the driveway capable of calling an all red stage if that is required.
- **Junction Tapers** - In relation to the tapers at the junction (AL RPoE 2.49-2.50) Mr Lewis appears to understand that where DMRB uses the verb '*Should*' this is not a requirement or standard, but advice, even if DMRB were to apply. However, in relation to Taper gradients, Mr Lewis then suggests that DMRB does not offer advice but a standard in relation to taper gradients, referring to the taper gradients at Table 6.1.1. This is just a mis-reading of DMRB CD123. In the paragraph preceding Table 6.1.1 DMRB CD123 (CD8.11) states (my emphasis):

  "6.1.1 Central treatments for SLD and ghost islands, on single carriageways, should be developed to their maximum width using the tapers shown in Table 6.1.1."

  I don't believe that there is any other way to read this paragraph other than my interpretation, which is that the gradient of the taper (i.e. 1:20) 'should' be achieved (not 'must'), it is not a standard. Mr Lewis appears to be reading Paragraph 6.1.2 which discusses how a central treatment is formed at a junction rather than paragraph 6.1.1.

- **Horizontal Alignment** - Mr Lewis also raises new concerns relating to the transitions of the horizontal alignment (AL RPoE 2.66-2.67). Other than noting that this is wholly a matter for detailed design, Mr Lewis' calculations of transitions is not correct. He concludes that a 256m transition is required. DMRB CD123 para 4.15.1 identifies that where the basic transition calculation (used by Mr Lewis at Equation 4.13) is greater than √(24R) then √(24R) is to be used, meaning a transition of 65m, if DMRB transitions are to be used, not 256m.

  HCC has clearly advised the Council that they consider the alignment to be acceptable (TW RPoE Appendix GG).

- **Design Speeds** - In relation to design speed, Mr Lewis repeats his concerns about the prospect of the 30mph speed limit relocation being achieved, addressed in my RPoE (paras 7.24-7.2.13).

  Mr Lewis now presents new Drawing 8210511/6106 which is intended to demonstrate the speed change he considers the scheme will achieve. I believe this both misrepresents the scheme and underestimates likely speed reductions. I would comment that:

  - Mr Lewis omits Speed Survey C (TSoCG Figure S1) and does not properly reflect the observed speeds for Surveys B and E. The majority of the existing speed results do not match the surveyed speeds, meaning the intermediary estimates are also incorrect.
  - For southbound speeds, Mr Lewis demonstrates that the existing speeds are reducing by ~0.5mph every 25m through the scheme. However, for proposed southbound speeds, these are presented as increasing speeds.
  - No effect is projected from the approach to the traffic signals, the introduction of the Appeal Site access junction or the change in character which will arise from the development of the Appeal Site.
  - As explained in my RPoE, the widening of Downend Road to form the central turning area will not provide additional road space for through traffic and will not therefore result in an increase in traffic speeds, as Mr Lewis suggests (+6mph).
  - Whilst Mr Lewis applies a 2mph reduction of speed for the impact of traffic islands (LTN 1/07 considers change of between 1-5mph) on the northbound direction, the same impact is not translated to southbound traffic. There can be no reason that this should be applied to one direction and not both.

2.7 Whilst the Council's RPoE introduces new evidence and analysis, it does not demonstrate that the scheme is unsafe, unacceptable, or even undesirable.

SECTION 3 Forecasts of Pedestrians and Cyclists

3.1 At paragraphs 1.8-1.13, the Council fundamentally changes his evidence in relation to pedestrian and cycle demands which were agreed as part of the TSoCG (Table 4 of AL PoE and TSoCG Table B).

3.2 These arguments artificially inflate the pedestrian and cycle demands at the bridge (each to one movement every 2 minutes), to justify more regular instances of cyclists passing through the bridge (so impacting on its operation), and to inflate the pedestrian crossing demand of Downend Road (again to affect operation of the bridge). In both cases, these is no evidence to support the claims.

3.3 Mr Lewis seeks to justify his reassessment of demands by my use of the TRICS database (TW PoE Section 5.3). My evidence related to traffic forecasts relating to a Matter of Disagreement (TSoCG 2(c)) and did not in any way present information on pedestrian and cycle forecasts.

3.4 The Council' RPoE now seeks to alter its evidence on these matters to conclude that:

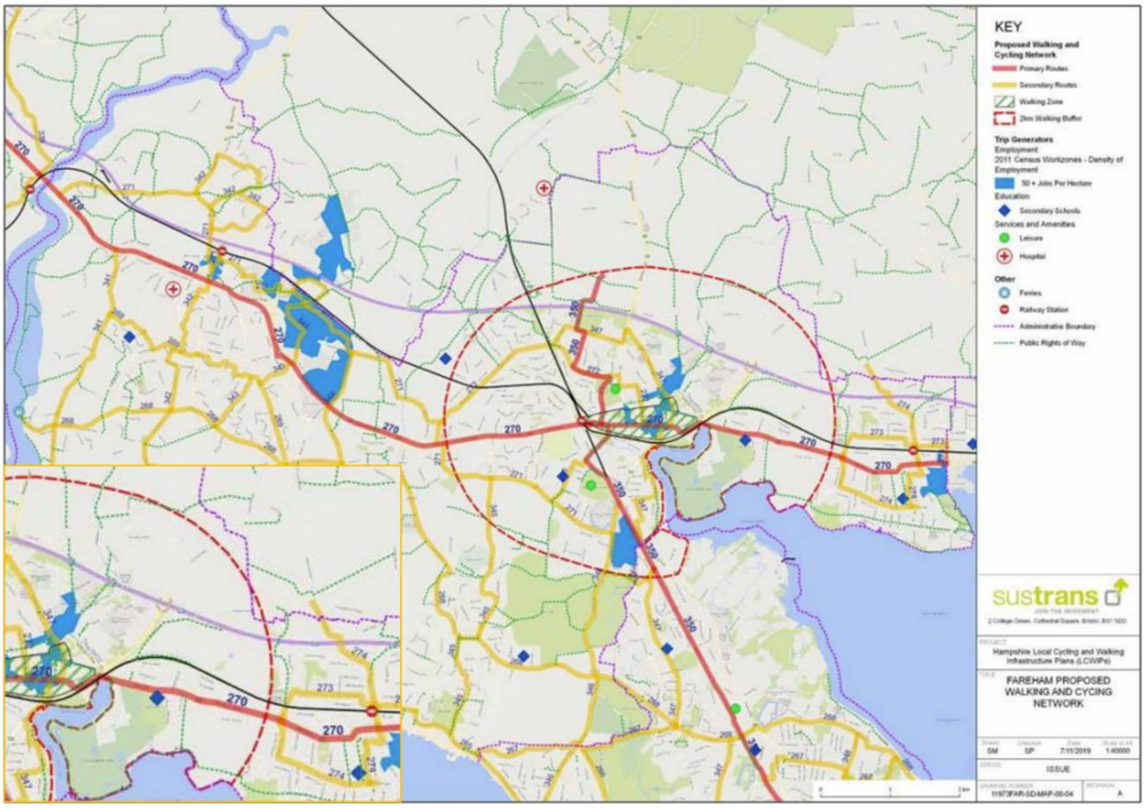
- Estimates of pedestrian movements (and other modes) have not been subject to growth factors in the same way that traffic has been (para 2.3 / 3.7);
- More walking trips will be attracted across the bridge to Paradise Lane, in line with the 2019 Appeal Inspector's considerations (Para 1.12);
- Travel demands are changing, and we should plan for increased pedestrian and cycle demands. Whilst accepting this is difficult to forecast (paras 2.11-2.14), Mr Lewis refers to various guidance and strategy documents to identify that an aspiration to <u>double</u> active travel; and
- At Table 4.1 Mr Lewis now presents an alternative forecast of cycle demand, estimating that the Appeal Site may generate 8 cycle trips in the peak hour. He assumes half would use Downend Road (half Cams Bridge), but doubles this to account for strategy aims, back to 8.

3.5 Having considered Mr Lewis RPoE, I comment that:

- If Mr Lewis did not agree with the forecasts of pedestrian and cycle demands, these matters should have been raised in evidence. Instead, he agreed these forecasts in the TSoCG.
- Whilst cycle demand is based on a 2016 survey, pedestrian surveys relate to four individual surveys between 2018-2019 (CD1.10 Table 4.9). This does not demonstrate any growth.
- Additional pedestrian usage of Downend Road across the bridge to access Paradise Lane, if it were to occur in line with the 2019 Inspector's considerations, would benefit from the scheme proposals which deliver a footway where no footway currently exists. Mr Lewis accepts that this footway provides a <u>significant benefit</u> to safety and attractiveness (TSoCG 1(p)).

- FBC is preparing a Local Walking and Cycling Infrastructure Plan (LWCIP). In its Local Plan Strategic Transport Assessment (2020) it presents draft improvement measures, but no measures are proposed for Downend Road. In the absence of improvements to the cycling infrastructure on Downend Road, estimates of a doubling existing cycling use are unlikely;

Image 3.1 – Extract of Image 5.3 of FBC Strategic Transport Assessment



- Mr Lewis refers to the DSTL Travel Plan (para 3.12), to suggest there is greater potential for cycle travel to Portsdown Hill using Downend Road. No DSTL Travel Plan is presented, but the listed measures mirror those on the general Government website. As an established site, I assume these measures have been in operation for some time, and whilst continued promotion of these measures is to be encouraged, it is not likely to substantially alter cycling use of Downend Road, particularly where no improvements are proposed in the LCWIP. Where it may have an effect is in encouraging new staff from the Appeal Site to cycle to DSTL. This may occur but will have no effect on the usage of the bridge by cyclists, with any cycling trips occurring north of the Appeal Site access. The Appeal Site also offers opportunities for cycling trips from wider Portchester to route through the Site, using Cams Bridge, to bypass the bridge.
- Mr Lewis points to trends in cycle use on the A27 (AL RPoE Graph 3.1) as evidence that cycling levels can increase. He identifies a 25% increase in westbound flows. All this does is return cycling to 2011 levels. There is no evidence of a material change in cycling behaviour.

- Mr Lewis' criticisms of the 2016 cycle surveys are unfounded. At AL PoE 3.14 Mr Lewis states that cycle demands are significantly higher between May and October, than those recorded in my November survey. However, a further classified count at the junction was carried out in September 2019 (**Appendix B**) as part of the 2019, which recorded cycle movements. This identifies that in the morning peak hour (07:30-08:30), cycle levels in September 2019 were consistent with the November 2016 survey, with 3 southbound cyclists and 6 northbound (9 cyclists total). There is no weight to Mr Lewis' argument that the surveys are affected by seasonal factors or that there has been any growth in cycling levels since the 2016 surveys.
- Mr Lewis' alternative forecasts of cycle demand taken from TRICS (AL PoE Appendix C) applies very different characteristics of sites to the Appeal Site (using sites in Ireland, Greater London, in town centres, sites of 10 dwellings etc). At CD1.10 Appendix O, I present forecasts of cycle demand using two methodologies, including TRICS (using the correct characteristics of the site) and the National Travel Survey. This estimates daily cycling demand from the Appeal Site will be some 40-65 cyclists. Of these some ~10% would occur in peak hours meaning around 5-6 cycle trips would be generated by the site in the morning peak hour.
- In relation to the assignment of cycling trips, Mr Lewis makes a crude assumption that half will use Downend Road and half Cams Bridge. This misunderstands the proposed improvement to Upper Cornaway Lane, which for the initial section between the Appeal Site and Lancaster Close will provide for cycle use and further does not consider the weight of attractions to the east of the Appeal Site. In the TA (CD1.10) at Appendix O, I present a detailed assessment of the expected assignment of cycle trips which demonstrates that 14.5% would use Downend Road and the remainder a combination of Cams Bridge and Upper Cornaway Lane. Using Mr Lewis estimates of peak hour cycle use for the site (Table 4.1) this would mean that 1 of the 8 cycle trips would be expected to use Downend Road, consistent with the TSoCG.

3.6 Whilst the application strongly and actively promotes walking and cycling, and other sustainable travel options, and indeed presents a comprehensive package of measures to promote active travel, there is nothing to suggest that the observed usage of walking and cycling on Downend Road has or will materially change in the future, and the estimates on which my assessment is based remain sound.

SECTION 4 Assessment of Highway Operation

4.1.1 At Section 4 Mr Lewis presents various criticisms of my assessment and introduces new evidence related to traffic flows, development demand and traffic growth, culminating in a revised set of assessments which consider the operation of the bridge during a single 'worst case' cycle.

4.2 Traffic Flows

4.2.1 Mr Lewis makes various comments on the classification of vehicles on Downend Road. At 4.12 he confirms the observed traffic has been accounted for in the modelling (robustly), and that there are very few commercial vehicles using Downend Road. Graphs 4.1-4.3 are then presented in an effort to show that the traffic composition on the local network has changed. At para 4.14 Mr Lewis claims that the data shows a decline in commercial traffic, but a 'leap' in other traffic. No such information is presented. In any event, traffic patterns and composition on the A27, and interurban principal road, is irrelevant to conditions on Downend Road, which he correctly notes is subject to a weight restriction.

4.2.2 In reality, this point goes nowhere, with Mr Lewis than claiming in that the 'average' weekday conditions need to be considered in more detail to account for possible daily variations. To support his point, Mr Lewis presents two random examples of traffic surveys from Kent and West Sussex which show a range of different traffic profiles across the five weekdays that make up the weekday average, one with limited daily variation (~4%) and one with larger variation (15-20%). Mr Lewis contends that variations at the Downend Road bridge will be more significant (para 4.18).

4.2.3 I would note that:

- Traffic conditions recorded in Kent and West Sussex are irrelevant to the Appeal Site. Both are a single direction counts and the site which demonstrates the largest % change exhibits very low baseline traffic flows (~135 vehicles), where small changes in traffic demand (~20-30 vehicles) exaggerate the real terms variation in traffic pattern;
- There are of course fluctuations in daily traffic levels - that is why the average weekday conditions are used for assessment purposes, to remove the effect of daily traffic flow fluctuations on forecasting; and
- TW RPoE has presented an analysis of the traffic profile on Downend Road (TW RPoE Graph 3.1 / Appendix EE). This demonstrates that there were not large fluctuations in the daily traffic demand either across the peak hour, or indeed across the individual days that comprise the weekday average (**Table 4.1**). Across the peak hour on Downend Road, the largest daily increase above the average was 6%, equivalent to 43 vehicles.

Table 4.1 – Traffic Flow Variation at Downend Road – Morning Peak Hour (07:30-08:30)

Time Period	M	Tu	W	Th	F	Weekday Average
Peak Hour Traffic Flow	718	787	759	769	687	744
% Peak Hour	97%	106%	102%	103%	92%	100%

4.3 Development Traffic

4.3.1 At Paragraphs 4.24-4.25 Mr Lewis presents new traffic data in an attempt to support his main Evidence. He states that this presents research of all medium / large housing sites on TRICS to show the variance on trip rates. This evidence certainly does not provide all TRICS sites in those categories and appears to have been prepared in Mr Lewis former employment at WSP – it is not recent analysis.

4.3.2 What the data does demonstrate is that the conclusions in TW RPoE Table 3.1 are entirely correct and reflective of the wider picture on development traffic demand, i.e. peak travel demand for development sites is focussed in 0800-0900, and that the vehicular trip rates applied in the assessment of the Appeal Scheme are robust. **Table 4.2** extends my earlier table to include Mr Lewis new analysis.

Table 4.2 – Trip Rate Proportion across Morning Peak Period (incl. AL Sites (AL RPoE App C)

Hour Starting	Trip Rate Comparison						Proportion of Travel Demand						
	TA	Oysell Gdns	Cond. Ave	AL Private	AL Mixed	AL Afford.	TA	Oysell Gdns	Cond. Ave	AL Private	AL Mixed	AL Afford.	Avg.
0700	0.346	0.389	0.410	0.344	0.335	0.367	28%	31%	34%	31%	30%	27%	30%
0800	0.531	0.542	0.533	0.475	0.479	0.476	43%	43%	44%	43%	43%	36%	42%
0900	0.367	0.333	0.265	0.291	0.288	0.491	30%	26%	22%	26%	26%	37%	28%
0700-1000	1.244	1.264	1.208	1.110	1.101	1.333	100%	100%	100%	100%	100%	100%	100%

4.3.3 At paragraph 4.25 Mr Lewis dismisses my use of Condor Avenue trip rates on the basis that he had found alternative sites, At TW RPoE (Section 2.5) I have explained why the Council's analysis of local trip rates is fatally flawed and why Condor Avenue provides a more representative comparator site. Mr Lewis offers no reasoning why Condor Avenue should not be used instead.

4.3.4 For reasons presented in my Evidence (TW PoE Section 5.3), the trip rates used to project vehicular demand for the Appeal Site remain appropriate, validated by local data, and supported by HCC.

4.4 Traffic Forecasts

4.4.1 In Paragraphs 4.26-4.31 Mr Lewis presents criticism of my approach to forecasting TEMPro growth rates. Mr Lewis identifies that my approach demonstrates no growth from housing in the period to occur in the Mid Layer Super Output Area (Fareham 010) used by TEMPro.

4.4.2 Whilst it is correct that housing growth in TEMPro is removed though my assessment, this does not mean the assessment assumes no development will happen in this area. Mr Lewis fails to provide the proper context to how growth is estimated (I present at CD1.10 Appendix H). The TA directly inputs growth from committed development and the Appeal site. Total development assumed to occur in the area (MSOA Fareham 010) totals 470 dwellings, higher than the housing growth TEMPro assumes (450 dwellings). It is correct to remove the housing growth in TEMPro to avoid double counting of traffic.

4.5 Council's Assessment of a Single Junction Cycle

4.5.1 Mr Lewis now accepts that a cycle intergreen (i.e. 16 seconds) is not required in junction cycles where no cyclists will be present (AL RPoE 4.44), contrasting with his PoE which applies a 16 second intergreen to all phases of the junction (AL PoE Table 14).

4.5.2 Therefore, the Council's concerns about the operation of the junction now appear to narrow to individual junction cycles within the morning peak hour only, i.e. when 2 cyclists (one northbound and one southbound) and a pedestrian all arrive at the junction during the same single cycle period.

4.5.3 It is a very unusual approach to consider junction operation during only a single junction cycle.

4.5.4 The assessment of the scheme should correctly be based on average conditions that will persist in peak periods. Across the peak hour, applying a cycle intergreen for phases where a cyclist is expected, results in an average intergreen of 10-11 seconds. I have demonstrated (TW PoE Table 3.1 / Table 3.5) that the junction works well within capacity applying these assumptions.

4.5.5 Table 4.1 of Mr Lewis' RPoE presents his assessment scenario of a 'worst case' single junction cycle, where a pedestrian arrives at the junction calling the crossing, and also where cycle demands occur on both the northbound and southbound approaches to the junction within a single cycle, also assuming that both cyclists are positioned at the stop lines of the junction (if a cyclists crossed the stop line at the end of the green phase, the All Red intergreen extension would not be required (TW PoE 3.6.33)).

4.5.6 In practice, the combination of demands Mr Lewis assesses is likely to occur very irregularly and represents an unusual cycle of the junction. The TSoCG Table B agreed cycle demands in peak hours shows 8 cyclists (one every 7 minutes) and 9-22 pedestrians (one every 3-6 minutes), assuming each arrives individually, which practically will not be the case.

4.5.7 Mr Lewis' single cycle assessment is also based on the following incorrect assumptions:

- Inclusion of a designated pedestrian phase, which is neither proposed nor necessary.
- Applying incorrect local trip rates (TW RPoE 2.5), significantly overestimating traffic demand
- Use of his peak 15 Minute traffic flows, not average conditions
- Considering conditions in 2031, applying incorrect traffic growth rates and inflating traffic flows

4.5.8 I explained in Evidence (TW PoE para 3.2.5) that I apply a very conservative estimate for the northbound Saturation Flow (1,705 PCU/hr). Using measured gradients, a Saturation Flow of 1,810 PCU/hr is correct.

4.5.9 Mr Wilkinson's Rebuttal PoE also identified that Mr Lewis had incorrectly applied an 8 second green time for the pedestrian phase, when a 6 second crossing time would be more than sufficient.

4.5.10 Applying these corrected parameters alone, Mr Lewis' 'worst case' junction cycle would in any event operate within capacity (<100% DoS) (**Table 4.3)**.

Table 4.3 – Corrected Assessment of AL Worst Case Cycle (adapted from AL RPoE Table 4.1)

Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
South (NB)	38	1810	588.3	19.6	560	19	95.2%
IG	16						
North (SB)	36	1915	590.5	19.7	552	18	93.5%
IG	16						
Ped Phase	6						
Ped IG	8						
Total	120		1,179	39	1112	37	

4.5.11 Vehicular demand within the cycle phases is 18 (SB) and 19 (NB) (total 37 vehicles), each falling within the capacity of the cycle (19 in each direction – 39 total). Therefore, all vehicles would pass the stop line during the green phases of the cycle, and the residual traffic queues left over to a subsequent junction cycles that Mr Lewis anticipates at AL RPoE 4.42 should not occur.

4.5.12 This is particularly the case with the use of variable cycle times at the junction which would simply apply a short (i.e. 2-3 second) extension of the cycle time for this highly irregular cycle <u>if it was required</u>.

4.5.13 At paragraph 4.42 Mr Lewis misrepresents the delay that any vehicle which was not able to pass the stop line in a green phase would incur, suggesting it will be delayed for over 2 minutes. This is incorrect.

4.5.14 If any vehicle does not pass the stop line at the end of the green phase, it would be waiting at the stop line for the subsequent northbound or southbound phase in the next cycle. It is not 2 minutes between the end of one northbound phase and the start of the next northbound phase.

4.5.15 **Table 4.4** (which uses Mr Lewis' exaggerated cycle times and includes a pedestrian phase not proposed as part of the Appeal scheme) demonstrates that any vehicle that did not get through the stop line in a single junction cycle would experience delay of about 80-85 seconds.

Table 4.4 – Delay to vehicles not able to pass stop line in junction cycle

	NB	IG	SB	IG	Ped	P-IG	NB	IG	SB	IG	Ped	Ped IG
Phase Time	38	16	34	16	8	8	38	10	34	10	8	8
Cumulative Period	38	54	88	104	112	120	158	168	202	212	220	228
Northbound Delay		16	50	66	74	82						
Southbound Delay				16	24	32	70	80				

Alternative Single Cycle Assessments

4.5.16 It is very unlikely that a cyclist will be present in both northbound and southbound phases of the same junction cycle, with cyclist demand being very low (TSoCG Table B – 8 hourly cyclists). Pedestrian demands are similarly low and the pedestrian phase would not be called each cycle, even if provided.

4.5.17 I therefore present various scenarios to test the sensitivity of Mr Lewis' single cycle assessment:

- ST 1 – Assuming One cyclist and a pedestrian demand
- ST2 – Assuming Two cyclists and no pedestrian demand

Table 4.5 – Single Cycle Operation – Sensitivity Tests

Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
ST1 - 1 Cyclist + Peds							
South (NB)	42	1810	648.6	21.6	560	19	86.3%
IG	9						
North (SB)	39	1915	638.3	21.3	552	18	86.5%
IG	16						
Ped Phase	6						
Ped IG	8						
Total	120		1287	43	1112	37	
ST2 - 2 Cyclist / No ped							
South (NB)	30	1810	623.4	15.6	560	14	89.8%
IG	16						
North (SB)	28	1915	617.1	15.4	552	14	89.5%
IG	16						
Total	90		1241	31	1112	28	

4.5.18 In both cases, the junction would operate within capacity, with all demand able to pass through the junction. In ST 1 total vehicular demand in the cycle is 37PCUs against a capacity of 43PCUs. In ST2, the cycle would operate comfortably in capacity allowing a much shorter cycle time of 90 seconds.

Subsequent Junction Cycle

4.5.19 At Table 4.2 Mr Lewis presents an assessment of a subsequent single cycle of the junction where no cyclists are present (but he retains the pedestrian phase). He concludes that in this case the junction will operate in capacity and all vehicles will pass through the junction (AL RPoE 4.46).

4.5.20 Mr Lewis' Table 4.2 contains errors in the calculation of capacity, with these having not been adjusted to reflect the lower (108 second) cycle time, albeit paragraph 4.47 is correct.

4.5.21 Correcting Mr Lewis assessment for the Saturation Flow and pedestrian crossing times, and applying the TSM based intergreen of 9 seconds, this demonstrates that the junction would work within capacity, presented in **Table 4.6**, using a 90 second cycle time.

Table 4.6 – No Cyclists (Pedestrian Demand Retained)

Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
South (NB)	30	1810	623.4	15.6	560	14	89.8%
IG	9						
North (SB)	28	1915	617.1	15.4	552	14	89.5%
IG	9						
Ped Phase	6						
Ped IG	8						
Total	90		1241	31	1112	28	

4.5.22 A more realistic subsequent cycle test would include no pedestrians or cyclists (based on the TSoCG demand). This demonstrates that using a much shorter 60 second cycle time, the junction would operate well within capacity. A cycle time of around 50 seconds would be achievable.

Table 4.7 – No Cyclist and No Pedestrian

Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
South (NB)	22	1810	693.8	11.6	560	9	80.7%
IG	9						
North (SB)	20	1915	670.3	11.2	552	9	82.4%
IG	9						
Ped Phase	-						
Ped IG	-						
Total	60		1,364	23	1112	18	

4.5.23 At Paragraph 4.48 and Table 4.3 Mr Lewis presents a further scenario in which he purports to show the effect of a cyclist at the stop line, with the impact being that a further 14 seconds intergreen (30 seconds total) would be required to clear the queue of traffic.

4.5.24 Firstly, this is not an appropriate assessment, being predicated on a worst case appraisal of traffic demands and considering a junction that includes a pedestrian phase where none exists. Secondly, Mr Lewis' assessment is incorrect.

4.5.25 If a cyclist is positioned at the stop line the cyclist will pass through the stop line during the green phase. There is simply no rationale to apply a 16 second cycle intergreen which is irrelevant. The Intergreen will be based on the time needed for traffic clearance.

4.5.26 Once the cyclist begins to travel through the bridge, vehicles will follow and cross the stop line during the green phase, controlled to cycle speeds (20kph / 5.55m/s). At the end of the assumed 34 second green phase, the cyclist would be 160m past the stop line. Assuming 19 PCUs behind a cyclist (using Mr Lewis' incorrect assumptions), this would represent a platoon of traffic some 209m in length (19PCUs x 11m @ 2 seconds headway). This would place the last vehicle in the queue some 45m in advance of the stop line (160m - 209m = -45m) at the end of the green phase (34 seconds). For the last vehicle to clear the junction collision area (54m beyond the stop line), assuming a cycle speed only, would take a total of 19 seconds of intergreen (54m + 49m / 5.55m/s), not 30 seconds.

4.5.27 Correcting the assessment for 19 seconds intergreen demonstrates that this cycle works in capacity (even retaining the pedestrian phase call).

Table 4.8 – Vehicle Clearance behind a Cyclist

Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
South (NB)	40	1810	618.4	20.6	560	19	90.6%
IG	19						
North (SB)	38	1915	622.4	20.7	552	18	88.7%
IG	9						
Ped Phase	6						
Ped IG	8						
Total	120		1241	41	1112	37	

Summary on Mr Lewis' Single Cycle Assessments

4.5.28 Correcting the saturation flow and pedestrian crossing time means that under all of Mr Lewis' scenarios, the junction would operate within capacity assuming a 'worst case' assessment of a single junction cycle where a) a cyclist is present in both directions and an intergreen extension is called for both northbound and southbound phases, b) a pedestrian phase is provided and c) the pedestrian stage is called.

4.5.29 This is despite retaining the inflated traffic demands that incorrectly underpin all of Mr Lewis' assessments and including a pedestrian phase which is not proposed. All vehicular demand would pass through the junction in the signal phases / cycle.

4.5.30 Mr Lewis' projections of delay that may arise for a vehicle not able to pass the stop line are incorrect Whilst a proper assessment shows all vehicles will pass the stop line, in the event that 1-2 vehicles did not, delay would be likely to be around 80-85 seconds, far below the 120 second threshold of a 'severe' impact that Mr Lewis introduces in his PoE at paragraph 3.13 and FBC uses to assess its Local Plan.

4.5.31 Mr Lewis' assumptions on the impact of following traffic are also flawed and not supported by reasonable assessment.

4.5.32 There is simply no severe impact arising from the scheme, even using Mr Lewis' unusual approach.

4.6 Appellant Single Cycle Assessment

4.6.1 Whilst my evidence has consistently demonstrated, including through various sensitivity tests, that the junction will operate effective and within capacity, I have for completeness replicated Mr Lewis' single cycle assessment to demonstrate how the proposals will in practice operate.

4.6.2 This assumes the Appeal Scheme as proposed and so does not include a pedestrian stage to the junction and uses the junction demand set out in my PoE. This assesses 2026 conditions, but as presented in TW PoE Table 3.3, this presents a more robust assessment than using 2031 flows.

Single Cycle with No cyclist

4.6.3 Based on the low cycle demand at the junction (TSoCG), the 'normal' junction cycle will include only vehicular demand. In this case, in line with the TSM (CD8.16) a 9 second intergreen would be applied.

Table 4.9 – Single Cycle Assessment – Normal Cycle

	Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
Optimised Cycle (+ Sat Flows - IG)	South (NB)	24	1810	754.2	12.6	498	8	66.0%
	IG	9						
	North (SB)	18	1915	606.4	10.1	410	7	67.6%
	IG	9						
	Total	60		1,361	23	908	15	

4.6.4 In the absence of any cyclists, the junction will operate well within capacity. A shorter cycle time of ~45-50 seconds would likely be used to limit delay to vehicles passing through the junction.

Single Cycle with 1 cyclist

4.6.5 There will be junction cycles where a cyclist is present. I have demonstrated that if a cyclist passes at the stop line at the end of the green phase, no 'all red' extension would be needed (TW PoE 3.6.32).

4.6.6 However, if a cyclist is positioned at / near the stop line at the start of the green phase, an 'All Red' extension would be needed to clear the traffic demand queued behind a cyclist (**Table 4.10**), with total intergreen required being 16 seconds (TW PoE 3.6.48).

Table 4.10 – Single Cycle Assessment – Cycle with cyclist demand at Stop Line

	Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
Optimised Cycle + 1 Cycle (+ Sat Flows - IG)	South (NB)	19	1810	603.3	10.1	498	8	82.5%
	IG	16						
	North (SB)	16	1915	542.6	9.0	410	7	75.6%
	IG	9						
	Total	60		1146	19	908	15	

4.6.7 Allowing for the 'All Red' extension, the junction operates comfortably within capacity in this cycle, with vehicle demands (7/8 vehicles) passing through the junction in the cycle comfortably (capacity for 10/9 vehicles). I present a 60 second cycle, but a cycle time of 55 seconds would be sufficient.

Single Cycle with 2 cyclists

4.6.8 On irregular occasions, two cyclists may appear at the junction in opposing directions in the same signal cycle. Whilst unlikely, if each as positioned at the stop line of opposing phases, this would necessitate 'All Red' extensions to the northbound and southbound green phases to clear traffic positioned behind the cyclists. **Table 4.11** presents this scenario.

Table 4.11 – Single Cycle Assessment – 2 cyclists at each stop line

Optimised Cycle + 2 Cycle (+ Sat Flows - IG)	Phase	Time	Sat Flow	Capacity (PCU/HR)	Capacity (PCU/Cycle)	Demand (PCU/HR)	Demand (PCU/Cycle)	DOS
	South (NB)	20	1810	567.3	10.6	498	9	87.8%
	IG	16						
	North (SB)	15	1915	457.3	8.5	410	8	89.7%
	IG	16						
	Total	67		1025	19	908	17	

4.6.9 Under this irregular event, the junction would still operate in capacity. The cycle time of that individual cycle would simply be extended by around 7 seconds to enable all demands at the junction to pass, resulting in a total cycle time of around 67 seconds, which remains a short cycle time in practice.

4.6.10 In subsequent phases where cyclists are not present, the junction would operate under shorter (45-50 second – **Table 4.9**) cycle times, meaning in practice across the hour, this will have no effect.

Assessment of Highway Operation Summary

4.6.11 It is very unusual to consider the operation of a single junction cycle. The assessment of the scheme should correctly be based on average conditions that will persist in peak periods.

4.6.12 Nevertheless, I demonstrate that during a single cycle where cycle demand occurs in each direction, the junction will operate in capacity (**Tables 4.9-4.11**).

4.6.13 When conditions are properly assessed across the peak hour, (TW PoE Table 3.1-3.2), there is simply no material impact of the delivery of the junction during any time period of the day.

4.6.14 Mr Lewis' assessments compounds numerous incorrect and highly conservative assumptions and assume a pedestrian phase which is not proposed. Even then, I have demonstrated that the 'worst case' cycle would still operate in capacity, that queues of traffic would be able to pass through the junction in a single cycle and the impacts to highway users will be limited.

4.7 Mayer Brown Review

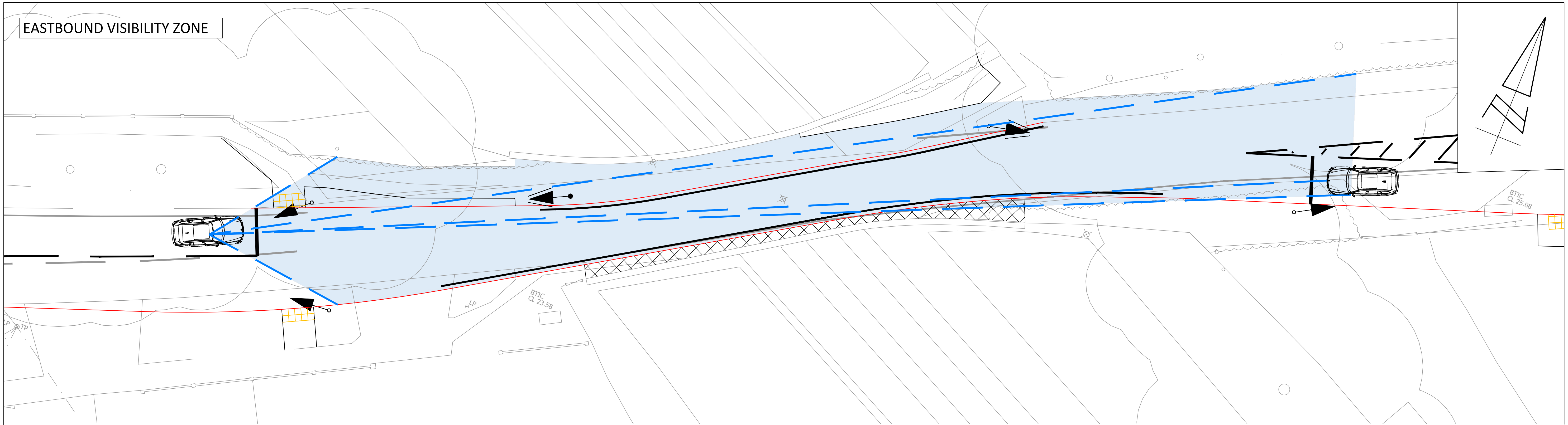
4.7.1 At paragraphs 4.1-4.9 of the RPoE Mr Lewis seeks to dismiss the conclusion of the Mayer Brown review of the site, which concluded that the scheme would address the earlier reasons for dismissal.

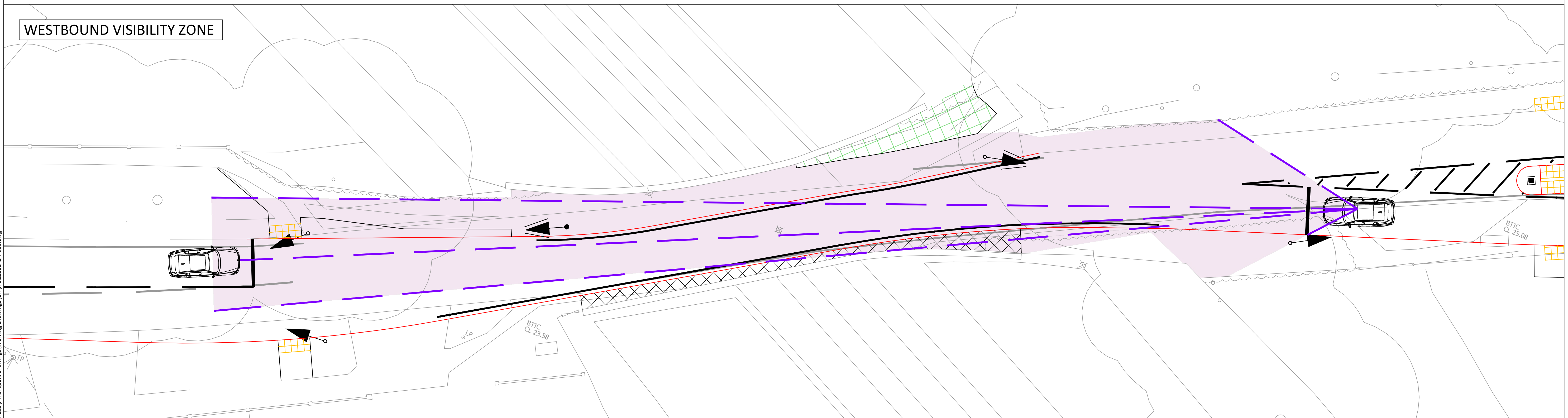
4.7.2 Mr Lewis now contends that Mayer Brown did not thoroughly review the proposals and conflates this with a wider Mayer Brown assessment (not in evidence) which considered the potential for wider development at Downend Road comprising Land West of Downend Road (i.e., HA56 not the Appeal Site HA4) as well as the Appeal Site. Mr Lewis' statements about what Mayer Brown may or may not have considered and the level of detail they assessed the scheme are pure conjecture.

4.7.3 In the Appellant's SoC the Mayer Brown report is provided (CD8.2). This considers only the potential allocation of the Appeal Site (HA4). The wider proposals, which are not subject to a planning application, are irrelevant to the consideration of the Appeal.

4.7.4 I find it hard to reconcile Mr Lewis' criticisms of Mayer Brown. Mayer Brown were the Council's transport consultancy for the 2019 Appeal. In that regard, they know the Appeal Site very well, understand the assessments and have a direct interest in ensuring the scheme is properly and soundly considered. It is clear from their assessment that they had considered the application, the HCC response and considered the reasons for the dismissal of the 2019 Appeal carefully. They have independently assessed the scheme and conclude it is acceptable. Members were advised by FBC Planning Officers at the Committee Meeting that Mayer Brown had carried out an independent review and were satisfied.

APPENDIX A. DRAWING ITB12212-GA-080 - INTERVISIBILITY





DRAWING ISSUED FOR FEASIBILITY CONSIDERATION AND PLANNING PURPOSES ONLY. DRAWING NOT TO BE USED FOR CONSTRUCTION. I-TRANSPORT LLP ACCEPT NO RESPONSIBILITY FOR ERRORS MADE BY OTHERS IN SCALING FROM THIS DRAWING. MEASUREMENTS SHOULD BE TAKEN FROM FIGURED DIMENSIONS ONLY. CDM REQUIREMENTS CONSIDERED AT FEASIBILITY STAGE ONLY. FURTHER CONSIDERATION REQUIRED BY DETAILED DESIGN TEAM.

SCALE BAR @ 1:250
0 1 2 5 10 25

i-Transport
Grove House, Lutyens Close, Chineham
Basingstoke, Hampshire, RG24 8AG
Tel: 01256 338640
www.i-transport.co.uk

REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: FOR INFORMATION

TITLE: DOWNEND ROAD BRIDGE - PROPOSED SIGNAL ARRANGEMENT WITH FOOTWAY INTERVISIBILITY ZONE

PROJECT: DOWNEND ROAD, PORTCHESTER

CLIENT: MILLER HOMES

DRAWN:	CHECKED:	APPROVED:
MC	TW	TW
PROJECT No: ITB12212	SCALE @ A3: 1:250	DATE: 27.07.21
DRAWING No: ITB12212-GA-080		REV: -

T:\Projects\12000 Series Project Numbers\12212ITB Downend Road, Portchester\Tech\Acad\i-Transport Drawings\Working Drawings\GA\ITB12212-GA-080.dwg

APPENDIX B. SEPTEMBER 2019 MCC COUNT AT DOWNEND ROAD

Portchester, Fareham
Classified Junction Count

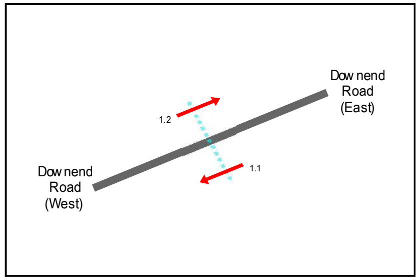
Site Plan

	Movement Number
	Number of Vehicles
	PCU Value

Network Peak Hour

18:00 - 19:00

1.2	7077	6915



1.1	5297	5196

Peak Hour

18:00 - 19:00

Network Peak Hour Generator
click on yellow cell to change Peak Hour parameters

Session:	Weekday 12H Session
Vehicle Class:	ALL
Start Time:	07:00
End Time:	07:00

Note: The site diagram is for reference purposes only and is not an exact representation of the site surveyed

Portchester, Fareham
Classified Junction Count

Site 1 of 1
Downend Road (East)
Downend Road (West)

Lat/Long
lat 50.853676° lon -1.154175°

Date
Thursday 05 September 2019

Weather
Cloudy
Temp: 13°C

0700 - 1900 (Weekday 12H Session)

	Movement 1.1: Westbound from Downend Road (East) to Downend Road (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	1	0	33	0	4	1	0	0	39	38.70
0715 - 0730	1	3	51	0	9	0	0	1	65	63.40
0730 - 0745	2	1	72	0	8	1	0	0	84	82.30
0745 - 0800	0	1	65	0	11	2	0	0	79	79.40
Hourly Total	**4**	**5**	**221**	**0**	**32**	**4**	**0**	**1**	**267**	**263.80**
Hourly Average	**1.00**	**1.25**	**55.25**	**0.00**	**8.00**	**1.00**	**0.00**	**0.25**	**66.75**	**65.95**
0800 - 0815	1	1	90	0	8	1	0	0	101	100.10
0815 - 0830	0	1	62	1	4	1	2	0	71	73.50
0830 - 0845	1	2	59	0	9	1	0	1	73	72.50
0845 - 0900	1	0	44	0	8	0	0	0	53	52.20
Hourly Total	**3**	**4**	**255**	**1**	**29**	**3**	**2**	**1**	**298**	**298.30**
Hourly Average	**0.75**	**1.00**	**63.75**	**0.25**	**7.25**	**0.75**	**0.50**	**0.25**	**74.50**	**74.58**
0900 - 0915	0	0	57	0	6	0	0	0	63	63.00
0915 - 0930	1	1	40	0	7	0	0	1	50	49.60
0930 - 0945	1	2	40	0	4	0	0	0	47	45.00
0945 - 1000	0	4	46	0	6	0	0	0	56	53.60
Hourly Total	**2**	**7**	**183**	**0**	**23**	**0**	**0**	**1**	**216**	**211.20**
Hourly Average	**0.50**	**1.75**	**45.75**	**0.00**	**5.75**	**0.00**	**0.00**	**0.25**	**54.00**	**52.80**
1000 - 1015	1	0	24	0	2	0	0	0	27	26.20
1015 - 1030	1	0	48	0	3	0	0	1	53	53.20
1030 - 1045	0	0	56	0	3	0	0	0	59	59.00
1045 - 1100	1	0	46	0	2	0	0	0	49	48.20
Hourly Total	**3**	**0**	**174**	**0**	**10**	**0**	**0**	**1**	**188**	**186.60**
Hourly Average	**0.75**	**0.00**	**43.50**	**0.00**	**2.50**	**0.00**	**0.00**	**0.25**	**47.00**	**46.65**
1100 - 1115	0	0	33	0	6	0	0	0	39	39.00
1115 - 1130	1	2	36	0	5	0	0	0	44	42.00
1130 - 1145	1	0	41	0	12	2	0	0	56	56.20
1145 - 1200	0	1	52	1	5	1	0	0	60	59.90
Hourly Total	**2**	**3**	**162**	**1**	**28**	**3**	**0**	**0**	**199**	**197.10**
Hourly Average	**0.50**	**0.75**	**40.50**	**0.25**	**7.00**	**0.75**	**0.00**	**0.00**	**49.75**	**49.28**
1200 - 1215	1	1	49	2	4	0	0	0	57	55.60
1215 - 1230	1	1	43	0	6	0	0	0	51	49.60
1230 - 1245	1	1	54	0	3	0	0	0	59	57.60
1245 - 1300	0	3	62	1	9	0	0	0	75	73.20
Hourly Total	**3**	**6**	**208**	**3**	**22**	**0**	**0**	**0**	**242**	**236.00**
Hourly Average	**0.75**	**1.50**	**52.00**	**0.75**	**5.50**	**0.00**	**0.00**	**0.00**	**60.50**	**59.00**
1300 - 1315	1	2	50	0	7	2	0	0	62	61.00
1315 - 1330	1	1	55	0	4	0	0	0	61	59.60
1330 - 1345	0	1	52	0	3	0	0	0	56	55.40
1345 - 1400	0	1	48	1	6	0	0	0	56	55.40
Hourly Total	**2**	**5**	**205**	**1**	**20**	**2**	**0**	**0**	**235**	**231.40**
Hourly Average	**0.50**	**1.25**	**51.25**	**0.25**	**5.00**	**0.50**	**0.00**	**0.00**	**58.75**	**57.85**
1400 - 1415	1	0	37	0	4	0	0	0	42	41.20
1415 - 1430	0	0	44	1	7	2	0	0	54	55.00
1430 - 1445	1	1	58	0	7	1	0	0	68	67.10
1445 - 1500	1	0	43	0	5	0	0	0	49	48.20
Hourly Total	**3**	**1**	**182**	**1**	**23**	**3**	**0**	**0**	**213**	**211.50**
Hourly Average	**0.75**	**0.25**	**45.50**	**0.25**	**5.75**	**0.75**	**0.00**	**0.00**	**53.25**	**52.88**
1500 - 1515	1	3	70	0	3	0	0	0	77	74.40
1515 - 1530	1	0	49	0	3	0	0	1	54	54.20
1530 - 1545	4	0	55	1	5	0	1	0	66	64.10
1545 - 1600	1	1	66	1	7	0	0	0	76	74.60
Hourly Total	**7**	**4**	**240**	**2**	**18**	**0**	**1**	**1**	**273**	**267.30**
Hourly Average	**1.75**	**1.00**	**60.00**	**0.50**	**4.50**	**0.00**	**0.25**	**0.25**	**68.25**	**66.83**
1600 - 1615	1	1	93	0	6	0	0	1	102	101.60
1615 - 1630	3	2	82	0	13	0	0	0	100	96.40
1630 - 1645	2	1	80	0	7	1	0	1	92	91.30
1645 - 1700	3	2	78	0	8	0	0	0	91	87.40
Hourly Total	**9**	**6**	**333**	**0**	**34**	**1**	**0**	**2**	**385**	**376.70**
Hourly Average	**2.25**	**1.50**	**83.25**	**0.00**	**8.50**	**0.25**	**0.00**	**0.50**	**96.25**	**94.18**
1700 - 1715	2	3	70	0	5	1	0	1	82	80.10
1715 - 1730	3	7	62	0	5	0	0	0	77	70.40
1730 - 1745	1	2	77	0	4	1	0	0	85	83.50
1745 - 1800	1	1	54	0	4	0	0	0	60	58.60
Hourly Total	**7**	**13**	**263**	**0**	**18**	**2**	**0**	**1**	**304**	**292.60**
Hourly Average	**1.75**	**3.25**	**65.75**	**0.00**	**4.50**	**0.50**	**0.00**	**0.25**	**76.00**	**73.15**
1800 - 1815	0	8	58	0	5	0	0	1	72	68.20
1815 - 1830	0	2	67	0	3	0	0	0	72	70.80
1830 - 1845	2	2	43	0	5	0	0	0	52	49.20
1845 - 1900	0	4	37	0	3	0	0	0	44	41.60
Hourly Total	**2**	**16**	**205**	**0**	**16**	**0**	**0**	**1**	**240**	**229.80**
Hourly Average	**0.50**	**4.00**	**51.25**	**0.00**	**4.00**	**0.00**	**0.00**	**0.25**	**60.00**	**57.45**

Session Total	**47**	**70**	**2631**	**9**	**273**	**18**	**3**	**9**	**3060**	**3002.30**
Session Average	**0.98**	**1.46**	**54.81**	**0.19**	**5.69**	**0.38**	**0.06**	**0.19**	**63.75**	**62.55**

Portchester, Fareham
Classified Junction Count

Site 1 of 1
Downend Road (East)
Downend Road (West)

Lat/Long
lat 50.853676° lon -1.154175°

Date
Thursday 05 September 2019

Weather
Cloudy
Temp: 13°C

0700 - 1900 (Weekday 12H Session)

	Movement 1.2: Eastbound from Downend Road (West) to Downend Road (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	3	70	0	7	0	0	0	80	78.20
0715 - 0730	1	6	81	0	2	0	0	1	91	87.60
0730 - 0745	3	2	104	0	9	1	0	0	119	115.90
0745 - 0800	1	3	95	0	6	1	0	0	106	103.90
Hourly Total	**5**	**14**	**350**	**0**	**24**	**2**	**0**	**1**	**396**	**385.60**
Hourly Average	**1.25**	**3.50**	**87.50**	**0.00**	**6.00**	**0.50**	**0.00**	**0.25**	**99.00**	**96.40**
0800 - 0815	1	0	89	0	9	0	0	0	99	98.20
0815 - 0830	1	2	92	0	7	0	0	1	103	102.00
0830 - 0845	2	0	77	0	7	0	0	0	86	84.40
0845 - 0900	1	0	70	1	2	0	0	1	75	75.20
Hourly Total	**5**	**2**	**328**	**1**	**25**	**0**	**0**	**2**	**363**	**359.80**
Hourly Average	**1.25**	**0.50**	**82.00**	**0.25**	**6.25**	**0.00**	**0.00**	**0.50**	**90.75**	**89.95**
0900 - 0915	0	1	79	0	3	0	0	0	83	82.40
0915 - 0930	0	0	58	0	6	0	0	0	64	64.00
0930 - 0945	0	0	33	0	1	1	0	0	35	35.50
0945 - 1000	3	0	36	0	3	0	0	1	43	41.60
Hourly Total	**3**	**1**	**206**	**0**	**13**	**1**	**0**	**1**	**225**	**223.50**
Hourly Average	**0.75**	**0.25**	**51.50**	**0.00**	**3.25**	**0.25**	**0.00**	**0.25**	**56.25**	**55.88**
1000 - 1015	2	1	40	1	4	0	0	0	48	45.80
1015 - 1030	0	1	41	0	1	0	0	0	43	42.40
1030 - 1045	0	0	41	0	2	0	0	1	44	45.00
1045 - 1100	1	0	41	0	4	0	0	0	46	45.20
Hourly Total	**3**	**2**	**163**	**1**	**11**	**0**	**0**	**1**	**181**	**178.40**
Hourly Average	**0.75**	**0.50**	**40.75**	**0.25**	**2.75**	**0.00**	**0.00**	**0.25**	**45.25**	**44.60**
1100 - 1115	0	1	34	1	3	0	0	0	39	38.40
1115 - 1130	0	1	29	0	4	0	1	0	35	35.70
1130 - 1145	1	0	33	1	5	1	0	0	41	40.70
1145 - 1200	0	1	30	2	4	0	0	0	37	36.40
Hourly Total	**1**	**3**	**126**	**4**	**16**	**1**	**1**	**0**	**152**	**151.20**
Hourly Average	**0.25**	**0.75**	**31.50**	**1.00**	**4.00**	**0.25**	**0.25**	**0.00**	**38.00**	**37.80**
1200 - 1215	0	1	26	0	4	0	0	0	31	30.40
1215 - 1230	1	2	38	1	0	0	0	0	42	40.00
1230 - 1245	3	1	32	0	7	0	0	0	43	40.00
1245 - 1300	3	0	39	0	3	1	0	0	46	44.10
Hourly Total	**7**	**4**	**135**	**1**	**14**	**1**	**0**	**0**	**162**	**154.50**
Hourly Average	**1.75**	**1.00**	**33.75**	**0.25**	**3.50**	**0.25**	**0.00**	**0.00**	**40.50**	**38.63**
1300 - 1315	0	0	32	0	3	0	0	0	35	35.00
1315 - 1330	0	0	39	0	8	0	0	0	47	47.00
1330 - 1345	2	3	48	1	4	0	0	0	58	54.60
1345 - 1400	0	0	41	0	2	1	0	0	44	44.50
Hourly Total	**2**	**3**	**160**	**1**	**17**	**1**	**0**	**0**	**184**	**181.10**
Hourly Average	**0.50**	**0.75**	**40.00**	**0.25**	**4.25**	**0.25**	**0.00**	**0.00**	**46.00**	**45.28**
1400 - 1415	0	2	43	0	3	0	0	0	48	46.80
1415 - 1430	1	3	39	0	3	0	0	0	46	43.40
1430 - 1445	0	1	38	0	6	0	0	0	45	44.40
1445 - 1500	1	0	35	0	3	0	0	0	39	38.20
Hourly Total	**2**	**6**	**155**	**0**	**15**	**0**	**0**	**0**	**178**	**172.80**
Hourly Average	**0.50**	**1.50**	**38.75**	**0.00**	**3.75**	**0.00**	**0.00**	**0.00**	**44.50**	**43.20**
1500 - 1515	0	3	39	1	3	0	0	0	46	44.20
1515 - 1530	3	1	35	0	4	1	0	1	45	43.50
1530 - 1545	0	1	41	2	3	0	0	0	47	46.40
1545 - 1600	0	0	40	1	7	0	0	1	49	50.00
Hourly Total	**3**	**5**	**155**	**4**	**17**	**1**	**0**	**2**	**187**	**184.10**
Hourly Average	**0.75**	**1.25**	**38.75**	**1.00**	**4.25**	**0.25**	**0.00**	**0.50**	**46.75**	**46.03**
1600 - 1615	1	1	36	1	5	0	0	0	44	42.60
1615 - 1630	0	3	39	2	7	0	0	0	51	49.20
1630 - 1645	1	3	44	0	3	0	0	1	52	50.40
1645 - 1700	0	4	50	0	1	0	0	1	56	54.60
Hourly Total	**2**	**11**	**169**	**3**	**16**	**0**	**0**	**2**	**203**	**196.80**
Hourly Average	**0.50**	**2.75**	**42.25**	**0.75**	**4.00**	**0.00**	**0.00**	**0.50**	**50.75**	**49.20**
1700 - 1715	1	0	57	0	3	0	0	0	61	60.20
1715 - 1730	3	2	62	0	3	1	0	0	71	67.90
1730 - 1745	1	3	40	2	2	1	0	1	50	48.90
1745 - 1800	4	0	47	1	4	0	0	1	57	54.80
Hourly Total	**9**	**5**	**206**	**3**	**12**	**2**	**0**	**2**	**239**	**231.80**
Hourly Average	**2.25**	**1.25**	**51.50**	**0.75**	**3.00**	**0.50**	**0.00**	**0.50**	**59.75**	**57.95**
1800 - 1815	0	1	45	0	1	0	0	0	47	46.40
1815 - 1830	3	2	32	0	3	0	0	0	40	36.40
1830 - 1845	1	3	33	0	1	0	0	0	38	35.40
1845 - 1900	2	2	27	0	0	0	0	0	31	28.20
Hourly Total	**6**	**8**	**137**	**0**	**5**	**0**	**0**	**0**	**156**	**146.40**
Hourly Average	**1.50**	**2.00**	**34.25**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	**39.00**	**36.60**

Session Total	**48**	**64**	**2290**	**18**	**185**	**9**	**1**	**11**	**2626**	**2566.00**
Session Average	**1.00**	**1.33**	**47.71**	**0.38**	**3.85**	**0.19**	**0.02**	**0.23**	**54.71**	**53.46**