

REBUTTAL EVIDENCE

Taylor Wimpey and Homes England

Pickering's Farm Planning Appeal

August 2022

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Transport and Mobility Rebuttal of Mr N. Stevens & Dr D. Price Evidence

Volume 1

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1 Mr N. Stevens' Evidence

- 1.1 The proof of evidence submitted by Neil Stevens (NS) on behalf of Lancashire County Council (LCC) as Highway Authority contains evidence that has not previously been provided to the Appellant team. This rebuttal addresses that evidence to the extent that it can do so within the time available to prepare this rebuttal.
- 1.2 LCC has effectively undertaken its own Traffic Impact Assessment (TIA) for the Applications and presented it as part of the submitted proof of evidence.
- 1.3 The new LCC evidence includes:
- i) An assessment and forecast of peak hour background traffic demand (traffic that LCC judges will in the future access the road network come what may and it considers to have a higher priority call on road network convenience than any development related traffic)
 - ii) An assessment and forecast for development traffic demand in the future, that must be considered as absolute (not affected by conditions) and additional to the forecast background traffic demand
 - iii) Stand alone junction modelling (where the interaction with the rest of the road network, including with adjacent junctions is not allowed for)
 - iv) A misunderstanding regarding what the Vision & Validate approach to transport planning is
 - v) A misunderstanding regarding the public transport proposals
 - vi) Comments about the layout of the Bee Lane/Leyland Road junction, and the Bee Lane bridge

Traffic Impact Assessment

- 1.4 LCC has adopted a classic, historical Predict & Provide approach to traffic impact assessment. The basis of the assessment is a development traffic forecast, and I explain here why that is unrepresentative and unreasonable. It adopts a method of analysis to forecast a future for road network performance that is not what happens in practice, or will happen in the future.
- 1.5 These are the foundations for its judgements. It uses both of these elements to produce mathematical results which are compared against a mathematical trigger for development pass or fail. This concept of such a pass or fail test is not present in modern planning policy.
- 1.6 LCC has, in effect, constructed a theoretical edifice founded on erroneous or unreasonable assumptions, and then shot it down, concluding that because it has been shot down that the development must fail.

Background Traffic Flows

- 1.7 LCC has made an estimate for normal current day background traffic flows¹, where normal means without the effects of Covid, cost of living crisis, the Ukraine war or any other local, national or global effects. The premise is that normal current day traffic flows will return some day to the situation experienced prior to Covid and the Ukraine war.
- 1.8 I have explained in my main evidence the trends and fast changing approach to transport even pre Covid, and the step changes that have occurred since. I have also explained why it is not either planning policy or in the best interests of the aims sought by planning policy to perpetuate that historic situation.
- 1.9 Designing for more of the same, may result in more of the same, and that will inherently assume a failure of policy in matters such as climate. For those reasons, I say that it is inappropriate to design to accommodate a future forecast for traffic movement that simply emulates the way life used to be.
- 1.10 In my main evidence I explain why it is reasonable to expect traffic flows to be a function of many influences, including the convenience of the road network and the conditions on that road network.
- 1.11 My evidence sets out that many interventions and changes have occurred between a pre Covid world and the date of the traffic surveys used in our assessment (April 2021). These include:
- i) The implementation of the Penwortham Bypass (December 2019)
 - ii) The implementation of the CBLR between Carwood Road and The Cawsey (August 2020)
 - iii) The Covid pandemic
 - iv) The well documented acceleration in changes in attitudes as a result of Covid
 - v) The means for many people to work more flexibly in time and in locations other than their company office
 - vi) A stronger emphasis on acting to minimise climatic effects
- 1.12 The forecast that LCC has produced assumes that current day traffic is pre Covid traffic (2018) with an adjustment for effects of the Penwortham Bypass and the CBLR, which were both implemented post the dates of the latest pre-Covid surveys. In neither case has NS explained or provided evidence for the quantum of adjustment. There have been no allowances for the current and expected changes in attitudes to working practices, the general intergenerational trends in transport, or other factors.

¹ NS Appendix 16

- 1.13 In all respects this is a crude approach. This matters because the work has been used for an absolute test of development pass or fail.
- 1.14 At their Appendix 16, LCC makes a judgement about the effect of the Penwortham Bypass. The stated effect is related to the two peak commuter hours, and is shown in **Figure MAREbuttal 1-1**. I note that the effect is only related to one junction. There is a net increase in traffic of 1,942 and 2,092 movements in an hour. There is no corresponding redistribution (i.e. no redistribution of traffic) elsewhere on the network.

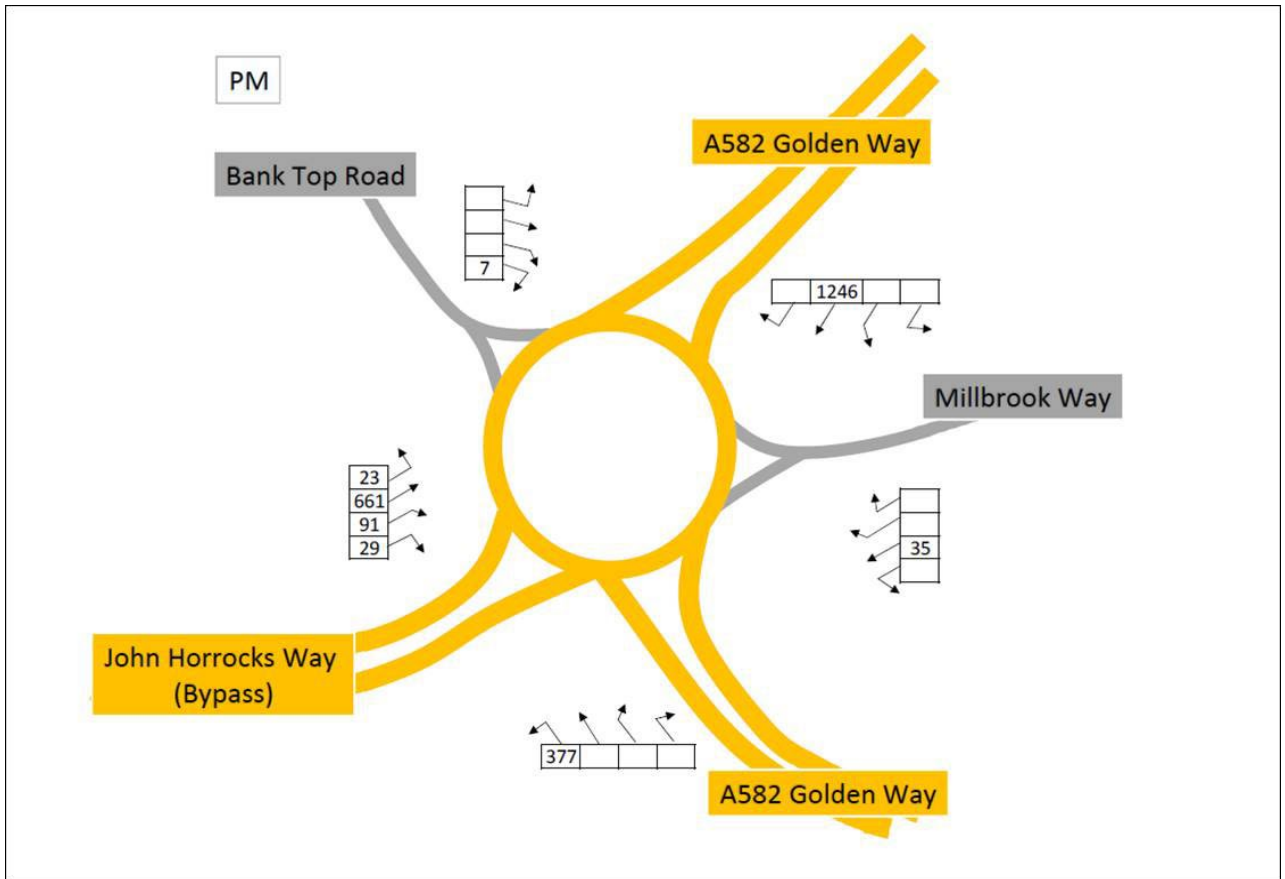
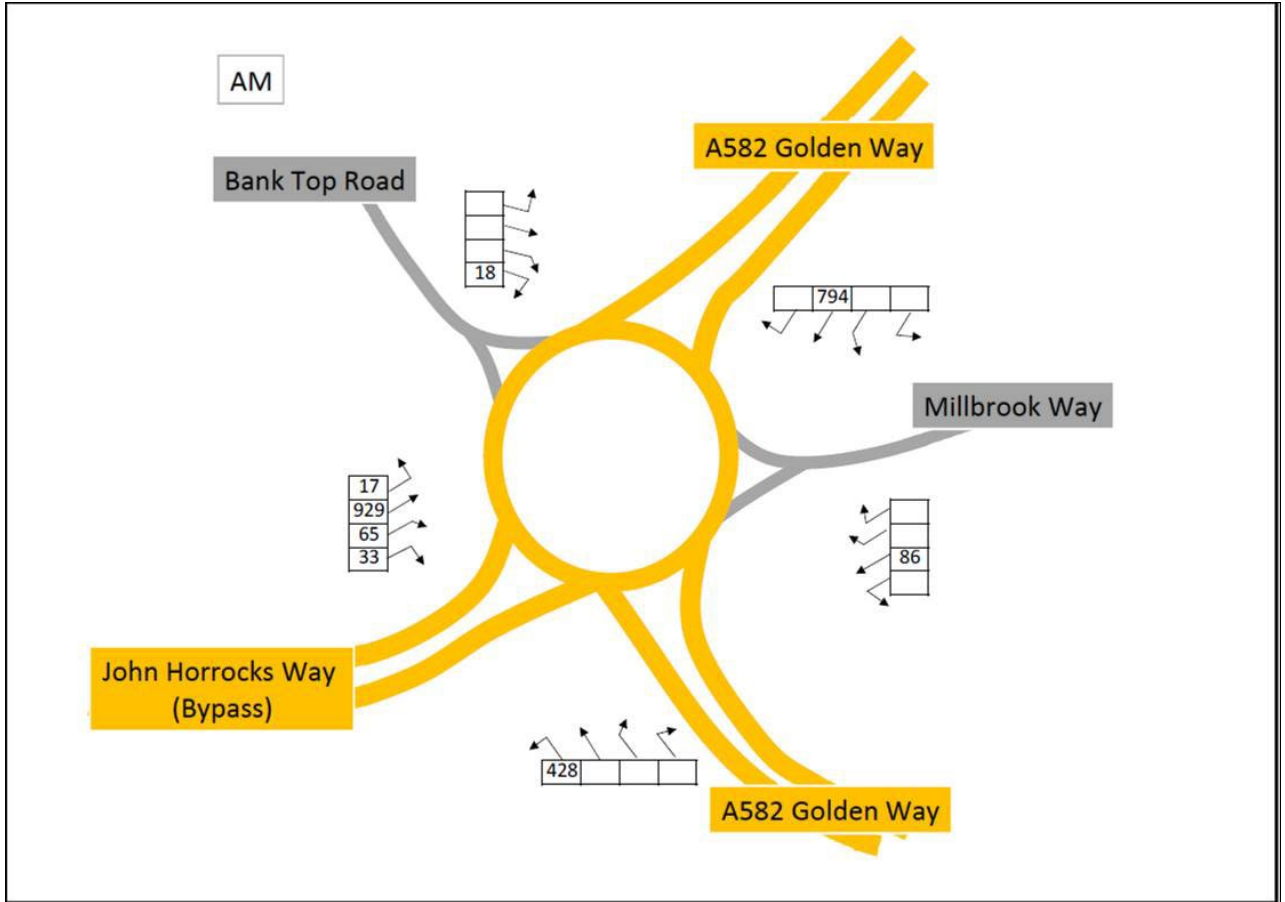


Figure MARebuttal 1-1: LCC Penwortham Bypass Redistribution

1.15 Also at their Appendix 16, LCC makes a judgement about the effect of the CBLR between Carwood Road and The Cawsey. The stated effect is related to the two peak commuter hours, and is shown in **Figure MARebuttal 1-2**. There is no evidence for the quantum of adjustment.

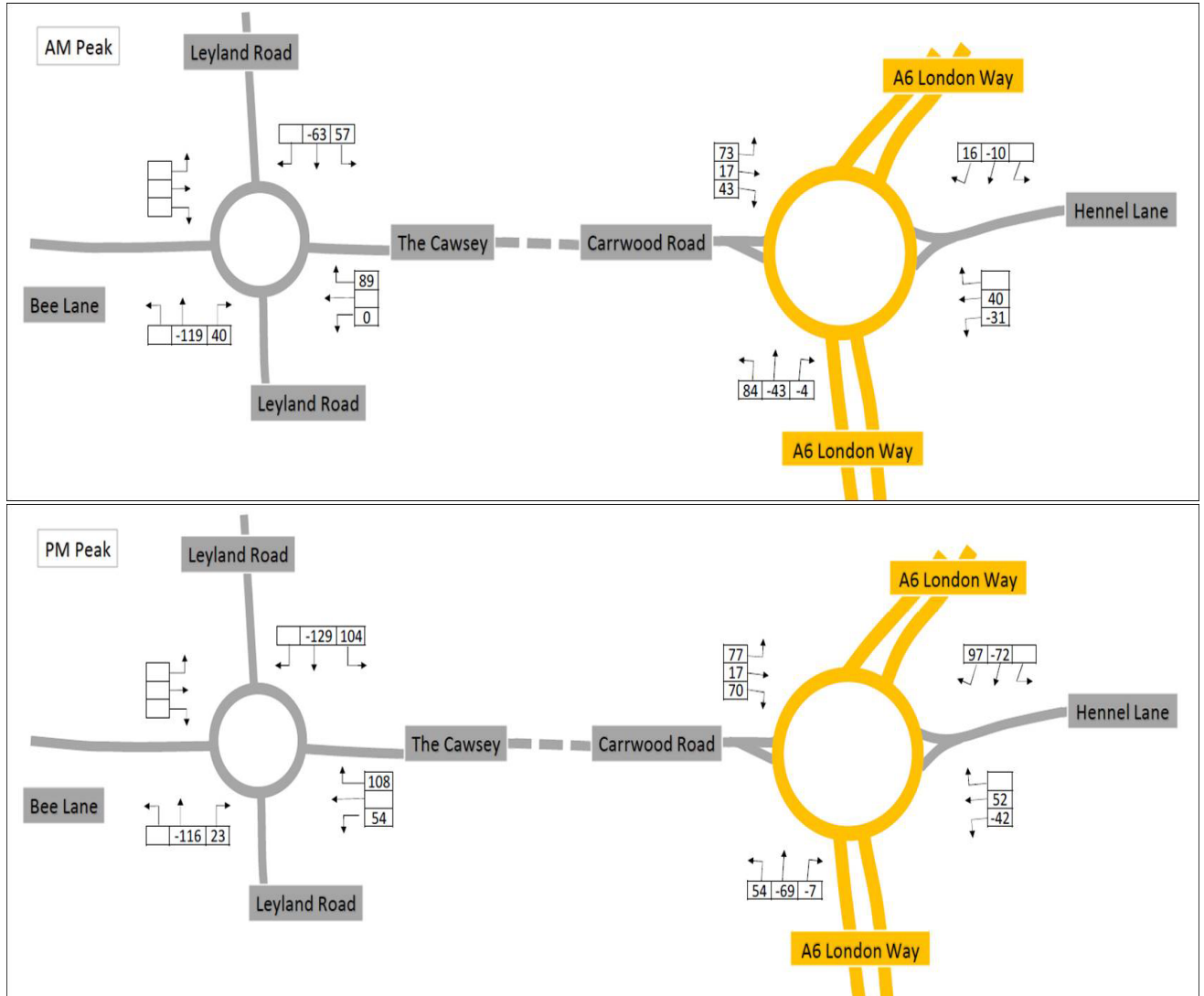


Figure MARebuttal 1-2: LCC Completed CBLR Redistribution

- 1.16 LCC’s forecast of background traffic does not give weight to any of the other effects I have identified. It is absolute. It does not give weight to prevailing or changing conditions.
- 1.17 The flow measurements that we have used have the benefit of taking into direct account the two infrastructure projects, the Penwortham Bypass and the completed CBLR between Carwood Road and The Cawsey.
- 1.18 Having made the judgements that it has, the LCC forecast remains fixed. The premise is that the road network must be able to allow this traffic, at the busiest times, to pass through it conveniently as a basic priority, and that any changes in society or community that may also generate an unfettered demand for movement by car may only do so as long as that basic priority is satisfied.

- 1.19 This is demonstrated by the comments by NS in a number of locations (e.g. paragraphs 5.1.68 and 5.1.76) where the implication is that a negative PRC, an RFC above 85% and DoS above 90% are ‘unacceptable’. It is a mathematical hard stop on the development, which if it were applied as policy across the UK, would prevent growth and promote substantial road building.
- 1.20 This is not a sensible interpretation of the phrase severe adverse impact in the context of the NPPF. I have explained in my main evidence that background traffic, or any traffic, fluctuates with circumstances, and there is no reason to suppose that someone using the road network yesterday has a greater right to the use of that road network than someone using it tomorrow.
- 1.21 A comparison of NS’s judgement about background traffic with mine, and also with LCC’s judgement in its A582 dualling application is in **Table MAREbuttal 1-1** and **Table MAREbuttal 1-2**.

Table MAREbuttal 1-1: Background Traffic Link Flows - AM Peak Hour

Link ID	Road	Direction	LCC Modelled Flow	Vectos Modelled Flow	A582 Dualling Application Flows
1	A582 Farrington Road	2-Way	2376	2001	2933
2	A582 Golden Way	2-Way	2054	1609	2156
3*	John Horrocks Way	2-Way	2380	1659	n/a
4	A582 Golden Way	2-Way	4070	2708	2905
5	B5254 Leyland Road	2-Way	1680	1474	1314
6	B5254 Leyland Road	2-Way	1751	1695	1314
7	B5254 Watkin Lane	2-Way	1421	1317	764
8	A6 Lostock Lane	2-Way	2195	2053	n/a
9	A582 Penwortham Way	2-Way	2046	1588	2137
10	A582 Penwortham Way	2-Way	2125	1597	2137
11	A582 Penwortham Way	2-Way	2270	1995	2374
12	A582 Flensburg Way	2-Way	1901	1833	2581
13	A582 Farrington Road	2-Way	2428	2012	2933
14	A582 Lostock Lane	2-Way	4226	3505	4436
15	A6 London Way	2-Way	3040	2178	3727
16	M65	2-Way	4598	3135	n/a

Table MARebuttal 1-2: Background Traffic Link Flows - PM Peak Hour

Link ID	Road	Direction	LCC Modelled Flow	Vectos Modelled Flow	A582 Dualling Application Flows
1	A582 Farrington Road	2-Way	2401	2211	3040
2	A582 Golden Way	2-Way	2149	1827	2227
3*	John Horrocks Way	2-Way	2469	1606	n/a
4	A582 Golden Way	2-Way	4249	2952	3367
5	B5254 Leyland Road	2-Way	1566	1324	1456
6	B5254 Leyland Road	2-Way	1597	1608	1456
7	B5254 Watkin Lane	2-Way	1573	1021	552
8	A6 Lostock Lane	2-Way	2413	1861	n/a
9	A582 Penwortham Way	2-Way	1910	1855	2163
10	A582 Penwortham Way	2-Way	2255	1818	2163
11	A582 Penwortham Way	2-Way	2490	2141	2598
12	A582 Flensburg Way	2-Way	2170	2023	2601
13	A582 Farrington Road	2-Way	2649	2211	3040
14	A582 Lostock Lane	2-Way	4387	3357	4466
15	A6 London Way	2-Way	3323	2656	4166
16	M65	2-Way	4201	3137	n/a

1.22 This highlights the magnitude of differences, the relevance of which I come onto later.

Development Traffic Forecasts

1.23 From paragraph 5.1.27, NS explains the basis of his forecast ‘development peak hour flows’. NS explains that these are flows agreed with Croft. Croft is a transport planning company involved with a previous planning application for the site.

1.24 On further investigation, these development traffic flow rates were rates that LCC specified that Croft should use, having rejected Croft’s proposed trip rates.

1.25 The basis for these rates is a single survey undertaken in June 2013 for a 182 home cul-de-sac in Preston. The cul-de-sac is shown in **Figure MARebuttal 1-3**. The survey data is only for car movements.

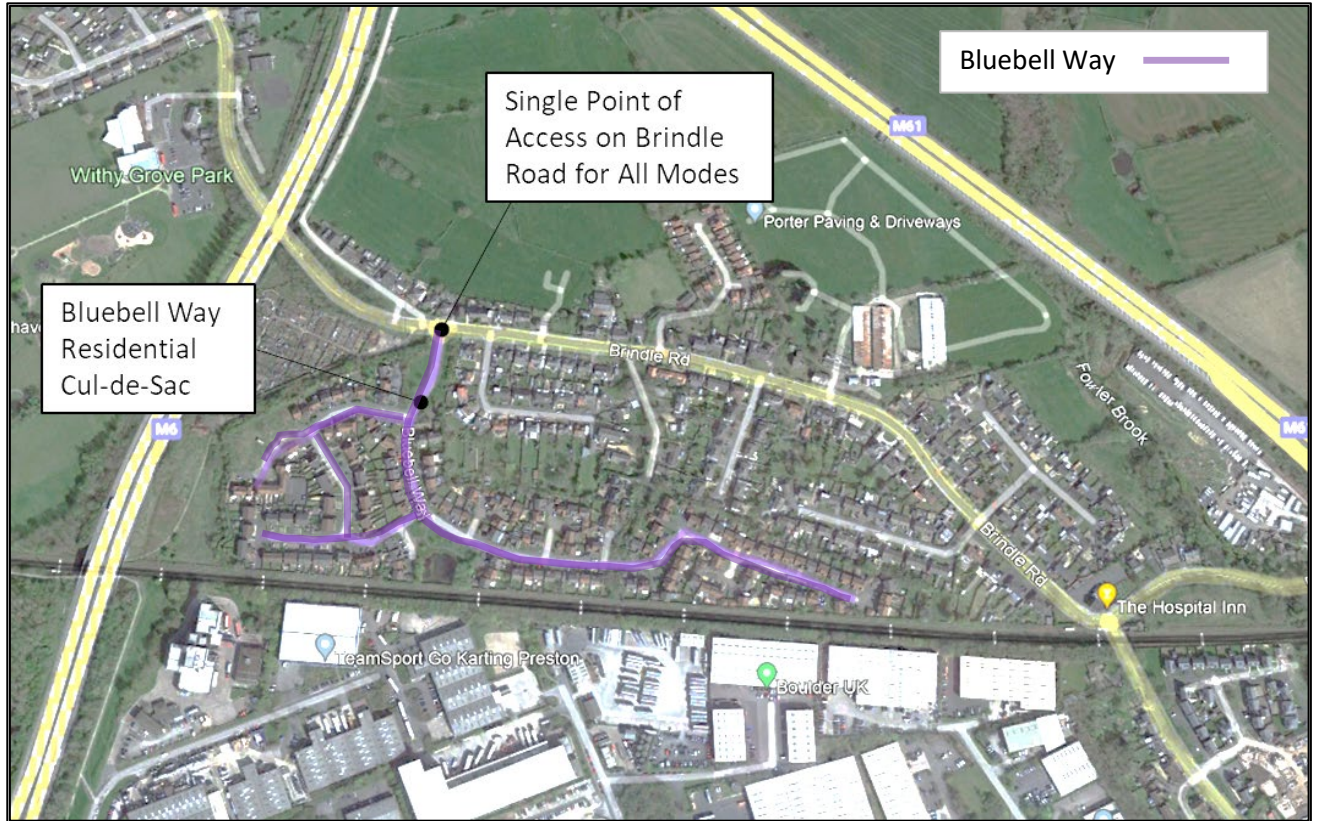


Figure MARebuttal 1-3: Bluebell Way Residential Area

- 1.26 This residential cul-de-sac is over 0.5km long, and has one access for all modes (whether walk, cycle or car). There are no buses routes in the cul-de-sac. There are no schools, shops, mobility hubs or other amenities. There are no dedicated bike routes. Online shopping wasn't big in 2013, and there were no micro-consolidation centres. Working from home was not as prevalent in 2013, and there were no 'Third Places' (places from which to work within the local community). Nine years ago, the modern trends in respect of transport were not as advanced.
- 1.27 This cul-de-sac is about 17% the size of the development. When one takes into account the local community of which the development forms part of, it is a far lower percentage than that.
- 1.28 Therefore, the LCC approach is to take data from a relatively small and old residential only environment and factor it up proportionally to the size of the urban extension.
- 1.29 A reason for developing an urban extension, with all of its design features, facilities, connections, size and other facets is to best provide sustainable growth. None of that is apparent in the 182 home cul-de-sac.
- 1.30 The practice of assuming that this much larger development, which must be thought of as sustainable because of its status in the Local Plan, will simply function as did a small residential cul-de-sac in 2013, misses the point of sustainable development and design. Furthermore, any tolerances in the surveys will be compounded by the large factors applied.

- 1.31 For instance, NS reports on two more surveys that he has undertaken in March and June of this year (Table 4, p38), which at 75 and 143 homes in cul-de-sacs are again not representative of a 1,100 home comprehensive mixed-use allocated scheme.
- 1.32 He has measured one site twice. This is a 75 home cul-de-sac. The variance between the two surveys is 28% for traffic departures in the PM peak hour. It highlights the danger in taking one survey, factoring it and making major decisions on that basis.
- 1.33 In my evidence I explain how I have used the industry standard database TRICS to generate an indication of people movements, and industry standard data to estimate journey purpose and mode.
- 1.34 Having derived a forecast for development traffic, NS has loaded this onto the road network in accord with a distribution that he has made a judgement about. NS has distributed this on the basis that all of the traffic is travelling to or from work. On that basis, NS has made a manual judgement about the routes that this traffic will take. There is no evidence that NS has taken traffic conditions into account.
- 1.35 This compounds the crude nature of the forecasts. I explain in my evidence that in the morning peak about 23% of movement (which equates to about 31% of traffic) is related to travel to and from work. The rest is education and leisure.
- 1.36 The average distance travelled for education and leisure is less than that travelled for work, with much of education and leisure remaining local. I note that based on the National Travel Survey, 71% of journeys nationally are contained within 8km.
- 1.37 The consequence of assuming that every car trip is travelling to and from work is more traffic onto the wider network, including in this case the motorway, than is likely to be the unfettered demand (where unfettered means the demand before external effects, including congestion, are taken into account).
- 1.38 In comparison, both the model that we have used, the microsimulation model, and the model that LCC has used for its A582 Dualling application, the Saturn model, distributes development traffic on the basis of an algorithm. The algorithm for the microsimulation model takes into account the following:
- i) The origin of the trip
 - ii) The destination (a function of the purpose of the journey – i.e. not all work related)
 - iii) The distance by route option
 - iv) The time taken to travel the distance by the time of day the assessment is being run by route option
 - v) The nature of the route (are there frequent interruptions, buses, pedestrian crossings, what are the junctions like etc)
- 1.39 This would be less important if the subsequent assessments were tools from which to make judgements cognisant of the limitation of the input assumptions and modelling techniques. However, this, and the assumptions about background traffic, are then considered absolute by NS, and the suitability of development is determined by the detail of these numbers.

- 1.40 Some time ago, it used to be common practice to overestimate car trips on the network for the purpose of traffic assessment, to build in some headroom to local road capacity or road building on a 'just in case' basis.
- 1.41 That was when local traffic convenience in peak hours was the highest priority form of movement and accessibility. It is no longer the highest priority, and is now a low priority in comparison to local accessibility by active travel and connectivity by shared travel. Perpetuating the historic 'worst case' approach to traffic capacity, as this would do, is now the antithesis of the aims of policy and guidance. This is set out in my main evidence.
- 1.42 In recent days, National Highways (NH) has written to SRBC confirming that it does not object to the planning applications. I explain this later. Within that letter is its estimate of development trips by car in the peak hours. It's estimate for car trips is different to that of NS, and similar to ours.
- 1.43 We note that our development car trip forecast only relates to car trips external to the site and does not include car trips internal to the site.
- 1.44 In a traditionally designed low density development, such as the NS example, internalisation of activity is spread over a wider area. If we were assuming a mode split for local traffic in that circumstance, we might assume that it is similar to a mode split for movement further afield. If one were to apply that mode split assumption to our internal trips, one would get a figure for car borne internal trips. For the purpose of the comparison that we make below (i.e. car borne trips) we apply this assumption.
- 1.45 However, we expect much better than this for internal trips, and we would expect the design and facilities to result in substantially lower internal car borne trips.
- 1.46 Nevertheless, a comparison of development trip demand estimates between ours, NH's and NS' is in **Table MAREbuttal 1-3**. **Figure MAREbuttal 1-4** presents my assessment of development traffic across the day.

Table MAREbuttal 1-3: Development Vehicular Trip Total Comparisons

	LCC Development Trips			National Highways Development Trips			Vectos TA Development Trips (External Only)			Vectos Total Development Trips (Internal and External)		
	Arr.	Dep.	T	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
AM	160	472	632	165	374	539	107	392	499	129	468	596
PM	377	260	637	352	165	517	292	126	418	425	185	610

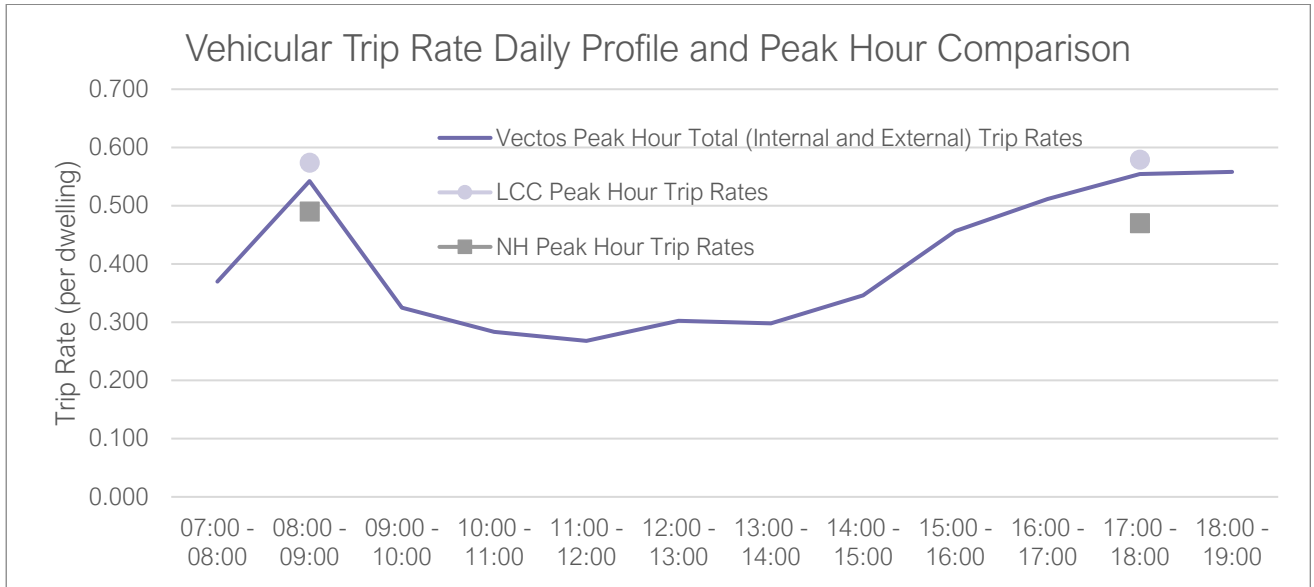


Figure MAREbuttal 1-4: Development Daily Vehicular Trip Rate Comparison

1.47 When assigned to the network, the differences in development flows on select links are presented in **Table MAREbuttal 4** and **Table MAREbuttal 5**, noting that the differences are due to a combination of factors including higher LCC trip rates, alternative LCC distribution, LCC all-or-nothing assignment. **Figure MAREbuttal 1-5** presents the link flow locations on the network.



Figure MAREbuttal 1-5: Link Flow Analysis Locations

Table MAREbuttal 1-4: Morning Peak Development Traffic Flows by Link

Link ID	Road	Direction	LCC Development Flow	Vectos Development Flow	Difference
1	A582 Farrington Road	2-Way	196	133	63
2	A582 Golden Way	2-Way	254	166	88
3	John Horrocks Way	2-Way	2	44	-42
4	A582 Golden Way	2-Way	241	91	150
5	B5254 Leyland Road	2-Way	8	1	7
6	B5254 Leyland Road	2-Way	9	6	3
7	B5254 Watkin Lane	2-Way	5	35	-30
8	A6 Lostock Lane	2-Way	16	11	5
9	A582 Penwortham Way	2-Way	273	249	24
10	A582 Penwortham Way	2-Way	335	236	99
11	A582 Penwortham Way	2-Way	295	145	150
12	A582 Flensburg Way	2-Way	229	131	98
13	A582 Farrington Road	2-Way	196	134	62
14	A582 Lostock Lane	2-Way	185	130	55
15	A6 London Way	2-Way	79	42	37
16	M65	2-Way	90	35	55

Table MAREbuttal 1-5: Evening Peak Development Traffic Flows by Link

Link ID	Road	Direction	LCC Development Flow	Vectos Development Flow	Difference
1	A582 Farrington Road	2-Way	198	103	95
2	A582 Golden Way	2-Way	256	175	81
3	John Horrocks Way	2-Way	2	18	-16
4	A582 Golden Way	2-Way	243	151	92
5	B5254 Leyland Road	2-Way	8	8	0
6	B5254 Leyland Road	2-Way	9	70	-61
7	B5254 Watkin Lane	2-Way	5	14	-9
8	A6 Lostock Lane	2-Way	16	12	4
9	A582 Penwortham Way	2-Way	217	244	-27
10	A582 Penwortham Way	2-Way	338	143	195
11	A582 Penwortham Way	2-Way	297	123	174
12	A582 Flensburg Way	2-Way	231	105	126
13	A582 Farrington Road	2-Way	198	105	93
14	A582 Lostock Lane	2-Way	186	100	86
15	A6 London Way	2-Way	80	49	31
16	M65	2-Way	91	45	46

1.48 The majority of differences in two-way link flows are low at around an extra vehicle per minute. The largest differences are in the PM at around 3 extra vehicles per minute.

Other Traffic

1.49 NS has also made judgements about the traffic effect of ‘committed development’ and other traffic that might appear.

1.50 Both NS’s approach to committed development and my approach to committed development are crude. My approach has been to take at face value the traffic volumes and distributions set out in the Transport Assessment Reports for each of the developments. I understand NS to have done a similar exercise, but adding his own judgements regarding how traffic assigns within the model whereas we have allowed the model to determine this aspect.

1.51 A comparison of my committed traffic flows with NS’s committed traffic flows are in **Table MAREbuttal 1-6** and **Table MAREbuttal 1-7**.

Table MAREbuttal 1-6: Committed Development Comparisons – AM Peak

Link ID	Road	Direction	LCC Committed Development Flows	Vectos Committed Development Flows
1	A582 Farrington Road	2-Way	569	387
2	A582 Golden Way	2-Way	177	338
3*	John Horrocks Way	2-Way	0	40
4	A582 Golden Way	2-Way	159	287
5	B5254 Leyland Road	2-Way	142	100
6	B5254 Leyland Road	2-Way	295	121
7	B5254 Watkin Lane	2-Way	171	115
8	A6 Lostock Lane	2-Way	300	166
9	A582 Penwortham Way	2-Way	243	394
10	A582 Penwortham Way	2-Way	246	397
11	A582 Penwortham Way	2-Way	310	516
12	A582 Flensburg Way	2-Way	490	484
13	A582 Farrington Road	2-Way	572	389
14	A582 Lostock Lane	2-Way	709	392
15	A6 London Way	2-Way	274	183
16	M65	2-Way	823	407

Table 1-7: Committed Development Comparisons – PM Peak

Link ID	Road	Direction	LCC Committed Development Flows	Vectos Committed Development Flows
1	A582 Farrington Road	2-Way	616	497
2	A582 Golden Way	2-Way	186	289
3*	John Horrocks Way	2-Way	0	62
4	A582 Golden Way	2-Way	163	247
5	B5254 Leyland Road	2-Way	142	76
6	B5254 Leyland Road	2-Way	351	153
7	B5254 Watkin Lane	2-Way	188	49
8	A6 Lostock Lane	2-Way	329	189
9	A582 Penwortham Way	2-Way	175	347
10	A582 Penwortham Way	2-Way	265	341
11	A582 Penwortham Way	2-Way	339	467
12	A582 Flensburg Way	2-Way	525	492
13	A582 Farrington Road	2-Way	624	494
14	A582 Lostock Lane	2-Way	770	401
15	A6 London Way	2-Way	375	323
16	M65	2-Way	925	490

1.52 A big difference between my forecasts and NS’s forecasts are the application of further traffic growth to the network. NS has, in addition to all of the above, applied a blanket traffic factor uplift to traffic on the network to account for something called Tempo.

1.53 Tempo (Trip End Model Presentation Program) is a program used to distribute the results from the DfT’s National Trip End Model (NTEM). NTEM forecasts the growth in trip origins and destinations up to 2015 for use in transport modelling, primarily for the purpose of appraising transport interventions, and takes into account national projections of:

- i) Population
- ii) Employment
- iii) Housing
- iv) Car Ownership
- v) Trip Rates

- 1.54 The DfT recognises that NTEM forecasts are subject to uncertainty, particularly when disaggregated to local zones and travel modes. DfT has also recognised within its appraisal and modelling strategy update that the economic outlook which underpins the traffic forecasts based on productivity and income growth is projected to be significantly lower than previously published².
- 1.55 On 8th August 2022, the DfT issued its updated growth (NTEM) datasets. NTEM is the basis for Tempro forecasts.
- 1.56 NTEM is now a function of many elements, including population forecasts, EU migration, economic forecasts, the intergenerational divide in getting mobility, the decline in personal trip making, the decline in driving licences being obtained, and behavioural change as a consequence of Covid. It continues to express caution that there are substantial uncertainties and that the forecasts take no account of local factors, including congestion.
- 1.57 As a result, the overall forecast of travel demand per person has reduced substantially compared with the previous version (issued 1st March 2017), and even more compared with the version before that (which LCC says it has used).
- 1.58 In our original modelling we had 8.3% growth from 2021 to 2035, derived from known committed developments. LCC had 18%-50% from 2018 to 2035, 13.5% of which is related to generic uncertain growth derived from Tempro and the remainder is derived from LCC's estimates of the effects of the Penwortham Bypass, The Cawsey link and committed developments.
- 1.59 LCC are prioritising generic uncertain growth based on its interpretation from an old version of Tempro over this specific proposal for an allocated site.
- 1.60 I am advised by my modelling colleague, Mr James Edwards, that the latest NTEM version (v8.0) for this area forecasts growth at 6.9% from 2021 to 2035, or 8% from 2018 to 2035. This is not dissimilar to ours and a lot lower than LCC's.
- 1.61 This latest version of NTEM introduces several new elements, one of which is the behavioural change scenario in Tempro. The behavioural change scenario considers changing travel behaviours through time based on trends observed in recent years, exacerbated by the Covid-19 pandemic. The trends include changes in the travel behaviours of young people; increased flexible working; and increased online shopping.

² DfT Appraisal and Modelling Strategy, TAG Update report, May 2021, para 1.8

- 1.62 Applying the behavioural change scenario factors to the LCC baseline figures means that the LCC baseline figures would need to be reduced by 15%. This is one of the new known uncertainty factors introduced by NTEM and is applicable to the baseline figure. If one were to introduce the remaining two relevant core scenario known uncertainty factors (i.e. regional and technology) the average growth to 2035 from 2018 would be 2.53% in the AM, by way of an example.
- 1.63 The difference between the 8% figure above and the 2.53% figure is that the 8% figure is based on an assumption that the historic scenarios are 'locked in' and used for future forecasting and the 2.53% figure is based on NTEM assumptions about known uncertainties.
- 1.64 Applying the behavioural change scenario factors to our baseline figures results in almost no change (i.e. +0.8%). The comparable figure for uplift in our baseline figures to the uplift of 2.7% in LCC's baseline figures to 2035 is 5.65% (i.e. higher than the LCC figure, and still lower than the figure used in my assessment).
- 1.65 The reason for the difference is because the LCC baseline is based on older and pre-Covid flows, and our baseline is not.
- 1.66 The point is, that in this context of forecasting traffic for business case submissions, and when considering the effects of behavioural change, the Government is advising that the forecast of traffic flows is substantially lower in the future compared with what LCC has assumed.
- 1.67 This demonstrates that, in these contexts, the Government treats behaviour change as a real and important element.
- 1.68 Comparing our forecasts to this latest version of trip forecasting shows a good correlation, whereas comparing the LCC forecasts shows flow forecasting substantially in excess.
- 1.69 LCC considers that the forecasting must fully conform to the requirements set out within TAG. We believe differently and have chosen instead to focus on the assessment of traffic flows associated with 'known' uncertainties (specifically our development traffic and traffic demands related to committed developments).
- 1.70 LCC is introducing additional uncertainties within the assessment via the application of additional growth derived from further analysis of the Temprow database. We consider that our approach, which focuses on the 'more certain' (albeit still estimated) aspects of traffic growth is more appropriate. We have demonstrated that, overall, growth within our model exceeds the Temprow growth projections for the same area and period and, as such, are satisfied that traffic growth is accounted for to an appropriate and proportionate level.
- 1.71 Further detail on this is explained by my modelling colleague, Mr James Edwards, in **Appendix MARebuttal 1** but in summary we consider that our assessment, which gives due consideration to 'known' influencers on traffic growth within the network (i.e. committed developments within the area and our development proposals) is more appropriate.

1.72 The uncertain aspect of traffic growth (i.e. the application of a global growth factor to all traffic movements) which LCC considered in their assessments artificially increases the traffic composition at each junction and by LCCs own analysis would result in a situation where the network was mathematically gridlocked. This is neither realistic, nor is it plausible. Removing this ‘uncertain’ element of traffic growth allows one to discern the effects of the development proposals and identify a step change in outcomes between the Reference Case and the Development Case scenarios.

Comparison

1.73 Stripping out the Temprow growth element, the overall comparison between what NS has produced and what I have produced in terms of initial traffic demands is in **Table MAREbuttal 1-8** and **Table MAREbuttal 1-9**. I say initial traffic demands because this is before any judgement is made about redistribution of that demand, temporally, modally or by lifestyle. It is before any substantial or cumulative effects of good design, good facilities, good public transport, or the effect of current trends.

Table MAREbuttal 1-8: Morning Peak Hour Development Case Link Flow Comparison

Link ID	Road	Direction	LCC Development Case Flow with TEMPro	LCC Development Case w/o TEMPro Flow	Vectos Development Case Flow	Equivalent A582 Dualling Reference Case Flow
1	A582 Farrington Road	2-Way	3460	3141	2520	3098
2	A582 Golden Way	2-Way	2761	2485	2113	2604
3	John Horrocks Way	2-Way	2384	2382	1742	n/a
4	A582 Golden Way	2-Way	4786	4470	3086	3563
5	B5254 Leyland Road	2-Way	2056	1831	1574	1723
6	B5254 Leyland Road	2-Way	2295	2055	1822	1723
7	B5254 Watkin Lane	2-Way	1788	1597	1468	1164
8	A6 Lostock Lane	2-Way	2805	2510	2230	n/a
9	A582 Penwortham Way	2-Way	2837	2562	2230	2678
10	A582 Penwortham Way	2-Way	2992	2706	2230	2678
11	A582 Penwortham Way	2-Way	3179	2874	2656	2524
12	A582 Flensburg Way	2-Way	2875	2619	2448	2502
13	A582 Farrington Road	2-Way	3522	3196	2535	3098
14	A582 Lostock Lane	2-Way	5692	5119	4028	5163
15	A6 London Way	2-Way	3802	3393	2404	3977
16	M65	2-Way	6132	5512	3577	n/a

Table MAREbuttal 1-9: Evening Peak Hour Reference Case Link Flow Comparison

Link ID	Road	Direction	LCC Development Case Flow with TEMPro	LCC Development Case w/o TEMPro Flow	Vectos Development Case Flow	Equivalent A582 Dualling Reference Case Flow
1	A582 Farrington Road	2-Way	3831	3214	2811	3327
2	A582 Golden Way	2-Way	2775	2590	2291	2780
3	John Horrocks Way	2-Way	2471	2471	1685	n/a
4	A582 Golden Way	2-Way	4818	4655	3351	3911
5	B5254 Leyland Road	2-Way	1914	1716	1408	1507
6	B5254 Leyland Road	2-Way	2308	1957	1831	1507
7	B5254 Watkin Lane	2-Way	1965	1766	1083	795
8	A6 Lostock Lane	2-Way	3063	2758	2062	n/a
9	A582 Penwortham Way	2-Way	2477	2302	2447	2670
10	A582 Penwortham Way	2-Way	3122	2857	2301	2670
11	A582 Penwortham Way	2-Way	3466	3127	2731	2995
12	A582 Flensburg Way	2-Way	3451	2926	2620	2939
13	A582 Farrington Road	2-Way	4094	3471	2810	3327
14	A582 Lostock Lane	2-Way	6113	5343	3858	5250
15	A6 London Way	2-Way	4153	3778	3028	4044
16	M65	2-Way	6141	5217	3673	n/a

- 1.74 The Tables also compare these flows against the flows forecast by LCC in the A582 Dualling application (in the non-dualling scenario) by the year 2037 (a period 2 years after the notional forecast year, 2035, in the NS work, and 7 years after the end of the Plan period, to which our work relates).
- 1.75 NS states in his evidence at paragraph 2.4.6, that these A582 dualling application future forecast flows include for the Pickering’s Farm allocation of 1,350 homes. Our reading of the A582 Dualling application documents is that it does not include for this development specifically, and we don’t know where NS has got this from. At paragraph 3.3.3 of the Strategic Outline Business Case (2020), it states that Pickering’s Farm is not included as it is ‘dependent development’. However, we see instead that the application includes a crude blanket percentage uplift in traffic to account for 2,831 dwellings, which would allow for 1,350 dwellings in the allocation, or indeed the 2,000 dwellings including the additional safeguarded land.
- 1.76 I welcome NS’ understanding though that the results reported in the A582 Dualling application do allow for the Pickering’s Farm allocation, whether this be specifically or as part of general growth. The results of the A582 modelling should be read in this context, as I have done in my main evidence, and summarised again here at **Figure MAREbuttal 1-6**.

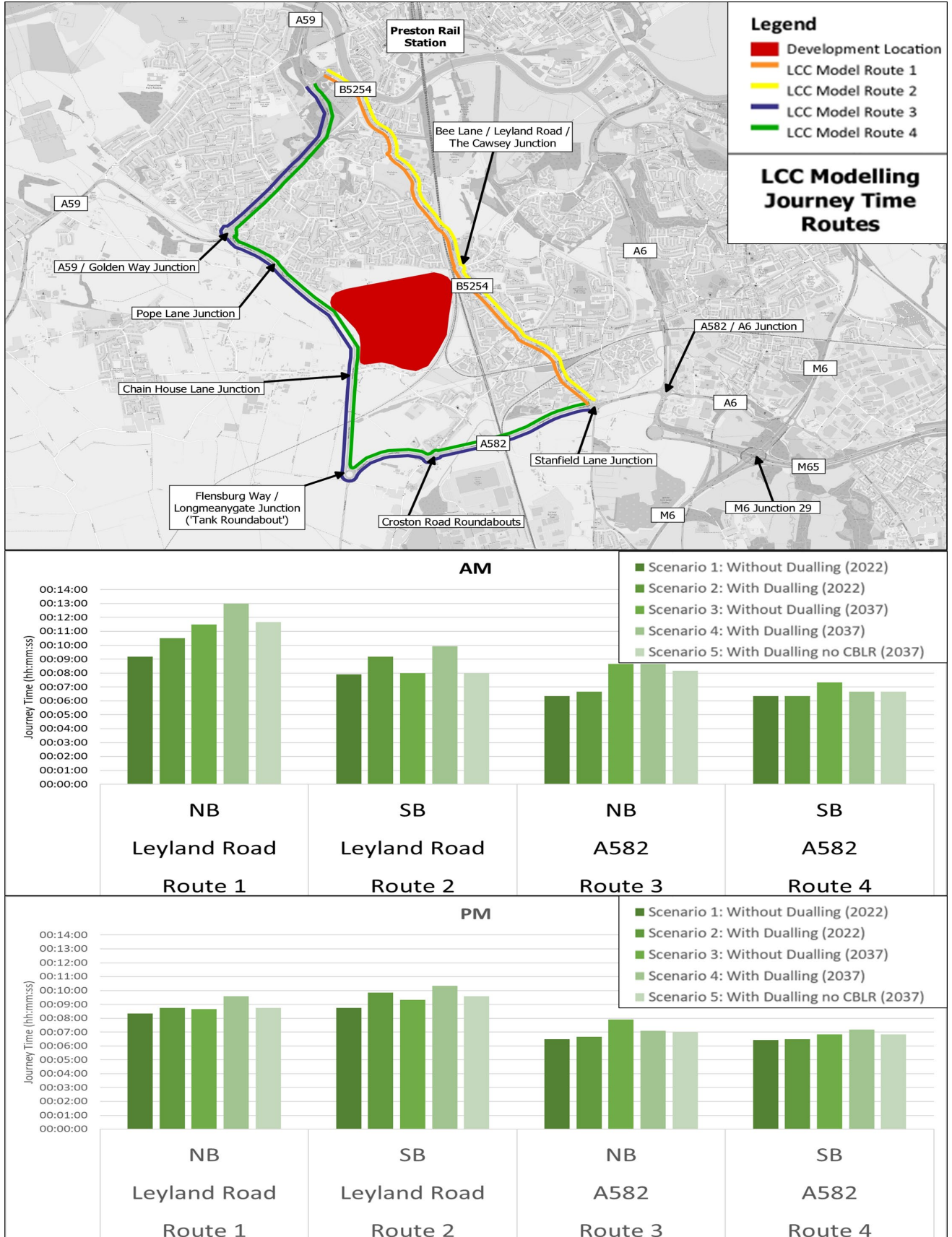


Figure MAREbuttal 1-6: Reported Journey Times from LCC Dualling Scheme Application

- 1.77 There is a fairly broad spread of forecast demand flows. NS's do not match the other LCC forecasts. This is to be expected because of the broad nature of forecasting, and the different methods. The consequence of applying the A582 LCC dualling application flows to the network, without dualling intervention, is a clear judgement that there would not be a substantial or 'severe' impact on the basis of the work that LCC has reported.
- 1.78 As explained in **Appendix MARebuttal-1** the NS derived forecasts are implausible.
- 1.79 To recap the comments in my main evidence, the LCC A582 Dualling application work redistributes traffic according to an algorithm that is a function of time and distance, whereas the approach in the NS approach is to dispense with that flexibility. I expect that the Saturn model is drawing traffic into the area from beyond the area because of the high capacity of this network and the relatively more convenient peak period situation.
- 1.80 It reinforces my position that the absolute flow forecasts, and differences between them, are not critical or important to the judgements that need to be made in the context of modern planning policy.
- 1.81 I restate my judgement that the effects are not substantial in practical terms and readily acceptable when balancing planning matters.

Modelling

- 1.82 Having derived estimates for peak hour background traffic, committed development traffic, general growth and development traffic, NS has applied these to stand alone traffic models that he has produced. NS' evidence presents these traffic models for the first time.
- 1.83 The evidence provides a summary of the models, and so it is not possible for me to audit these or to understand the assumptions and criteria that have been used to construct these models. This would not be as important if NS was not using these as a fixed determinant of acceptability.
- 1.84 NS is particularly concerned about seven junctions. These are indicated in **Figure MARebuttal 1-7**.

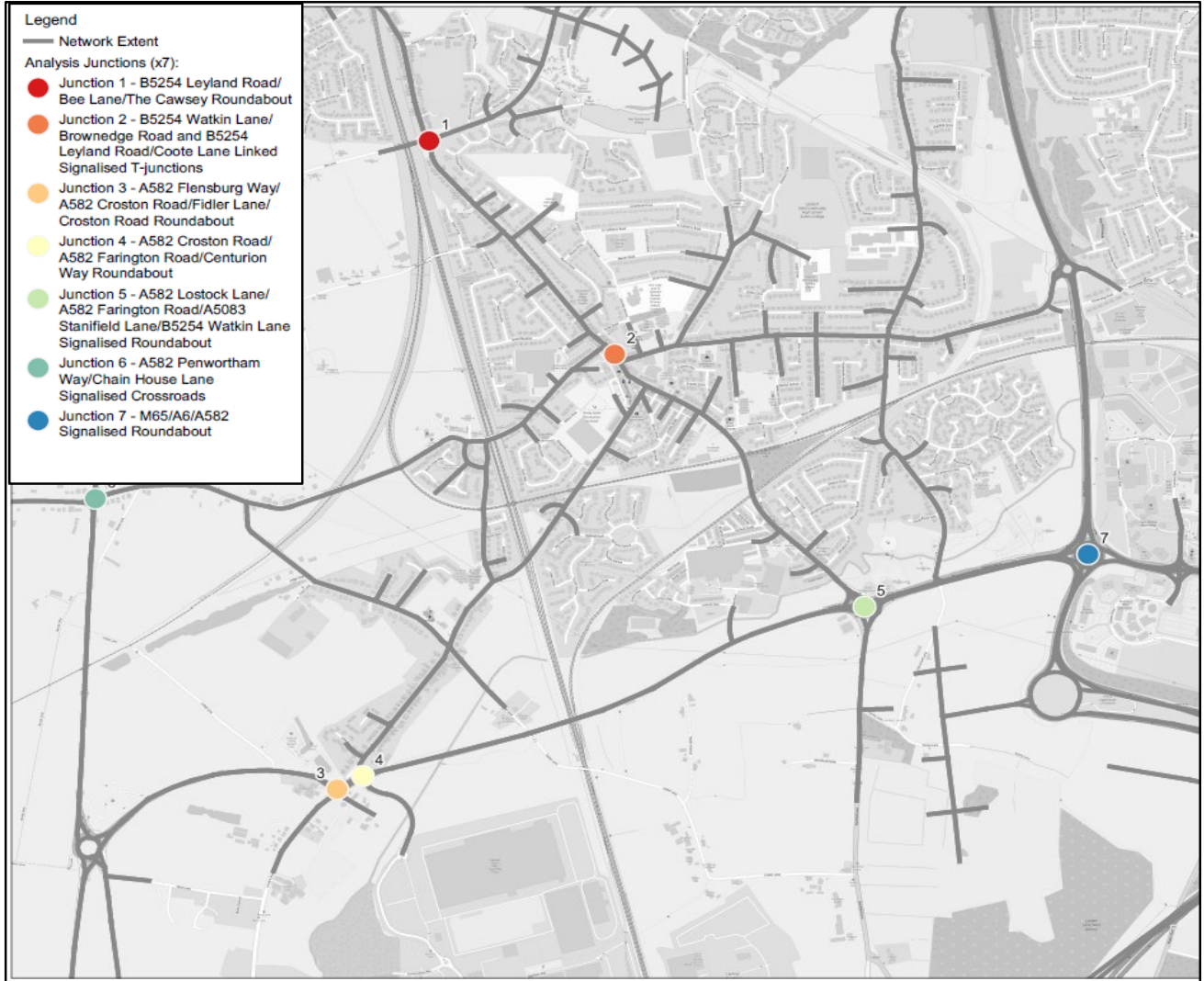


Figure MAREbuttal 1-7: LCC Junction Analysis Locations

- 1.85 LCC’s Appendix 17 summarises the consequence of adopting the NS approach to traffic. Without including the development, the results are that five (Junctions 2, 3, 4, 5 and 7) of the seven junctions that NS identifies, are unacceptable in the NS world now. It means that in this world there must be a moratorium on growth now until bigger roads are built, which in my view is the antithesis of planning policy. That is not reflected in the Local Plan.
- 1.86 I have also produced models for these junctions using the same modelling packages that NS has used. I have applied the initial traffic flow parameters that we consider closer to reality. The results are presented in **Table MAREbuttal 1-10**.

Table MAREbuttal 1-10: Vectos Junction Impact Summary

Junc tion No.	Most Impacted Period	RFC or DoS (%)	Observed Year (Base)	Future Year (Reference)	Future Year with Dev. (Development)	Diff. between Dev and Ref Case DoS
1	AM	RFC	0.66	0.59	0.64	0.05
2	AM	DoS	88.5%	80.1%	80.6%	0.05%
3/4	PM	RFC	1.46	1.60	1.59	0.01
5	PM	DoS	99.0%	104.8%	107.9%	3.1%
6	PM	DoS	59.6%	69.3%	70.5%	1.2%
7	PM	DoS	91.4%	99.5%	100.8%	1.2%

* 3/4 modelled as a single junction

- 1.87 All of this work is a cruder form of modelling than the microsimulation model presented in my evidence, and the strategic model presented in LCC’s A582 application, and none of this work is capable of providing meaningful results in terms of the real life metric of journey times.
- 1.88 Stand alone traffic models can be used iteratively with microsimulation (the Vectos model) or strategic (the LCC Dualling model) models. Stand alone models can look in detail at signal timings, and these signal timings can be reintroduced to the simulation models. This is explained in my **Appendix MAREbuttal 1** and **Appendix MAREbuttal 2**.
- 1.89 This is an additional level of detail which we did not feel was necessary, as within the limits of modelling there was already sufficient comfort in the work that had been undertaken, and in the context of policy, that a judgement could be made that traffic impact would not be an impediment to delivery of this allocated site.
- 1.90 However, as NS has introduced standalone modelling, and we have taken the opportunity to replicate it, we have optimised the individual junction signal settings in the stand-alone models and amended the settings in the microsimulation accordingly. We would expect improved journey times, and that is what we get. The updated journey times are in **Figure MAREbuttal 1-8** and **Figure MAREbuttal 1-9**.

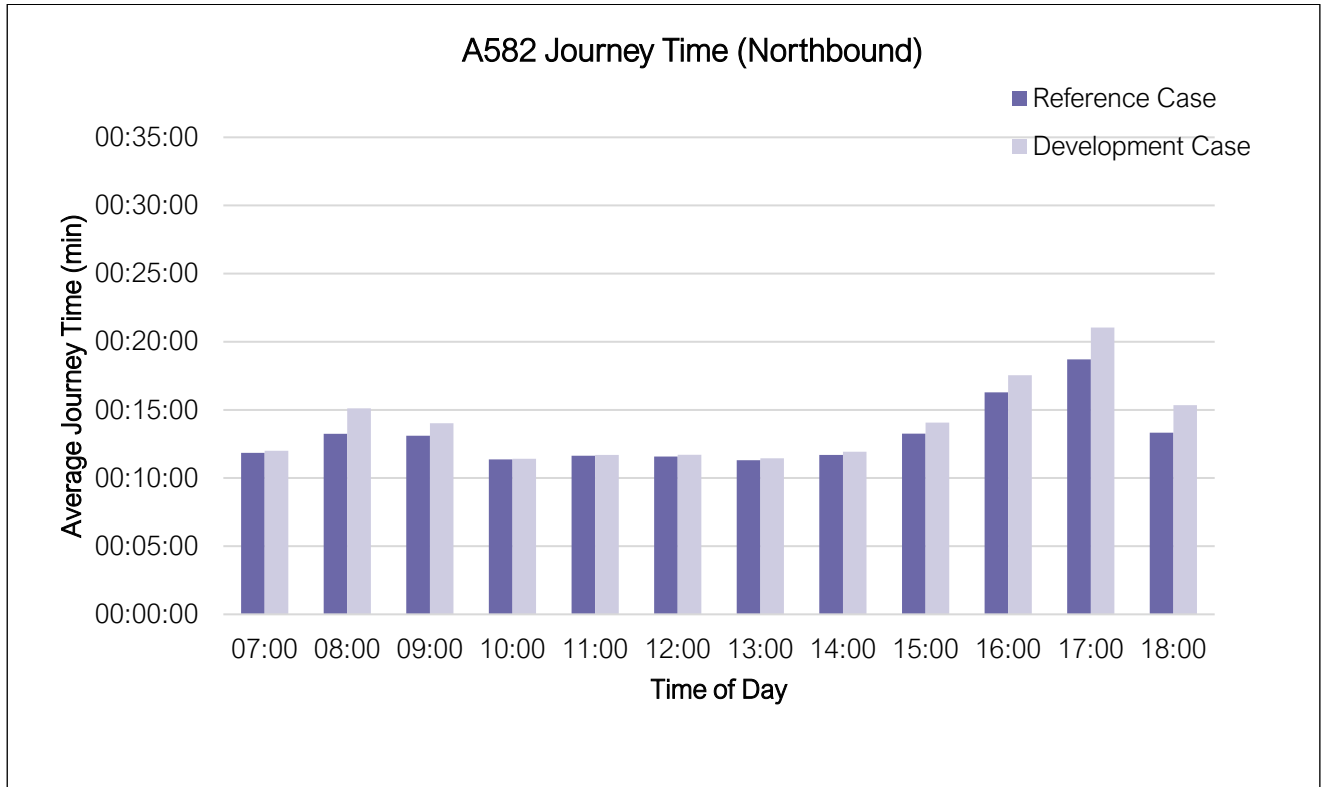


Figure MAREbuttal 1-8: Updated Journey Times

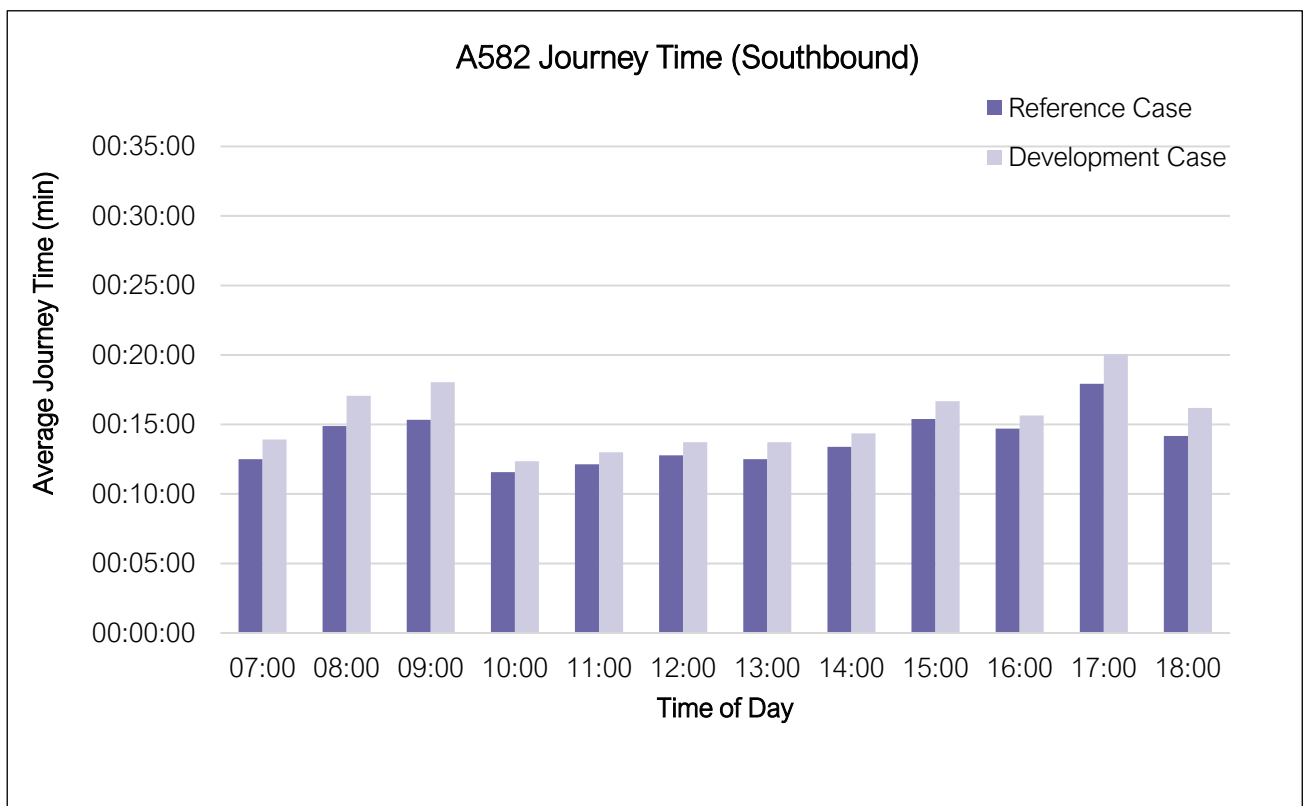


Figure MAREbuttal 1-9: Updated Journey Times

1.91 We have also summarised the ebb and flow of modelled vehicle speeds on that part of the network that NS is most interested in, and this is summarised in **Figure MAREbuttal 1-10** and **Figure MAREbuttal 1-11** for the peak hours, with summaries across the day included at **Appendix MAREbuttal 3**.

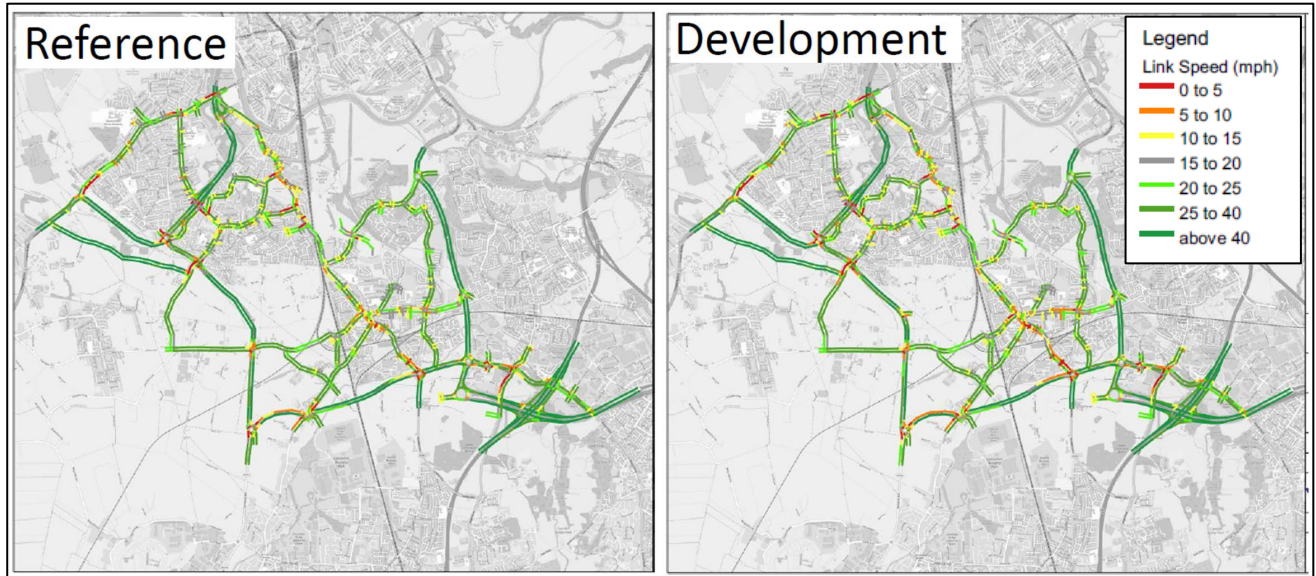


Figure MAREbuttal 1-10: Morning Peak Hour Average Link Speed Plots

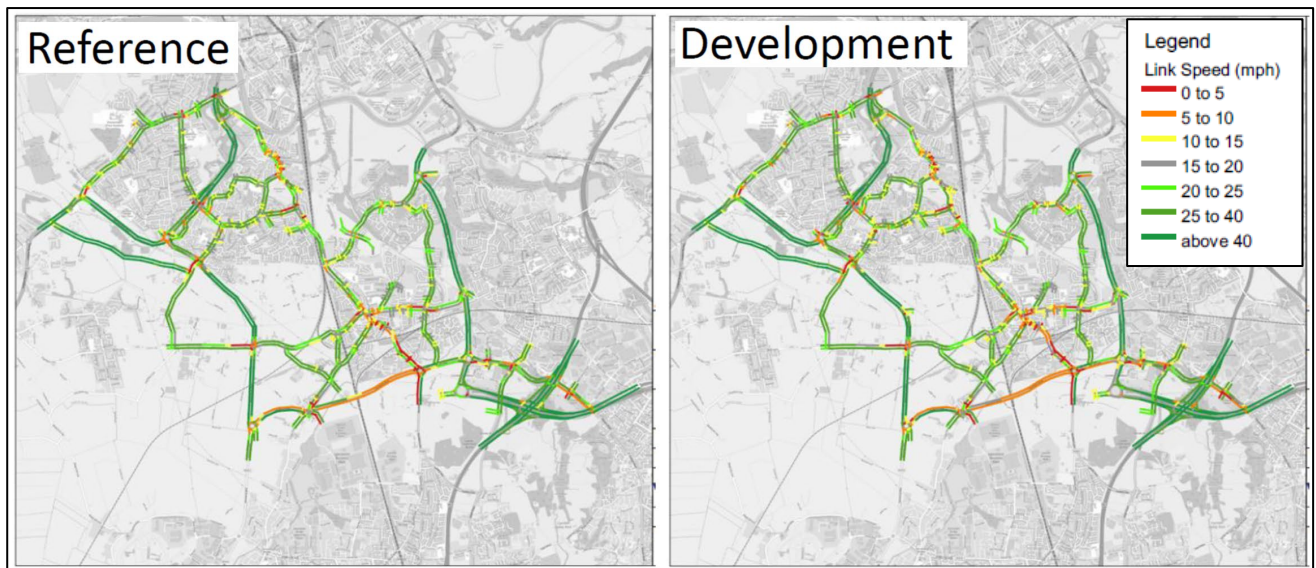


Figure MAREbuttal 1-11: Evening Peak Hour Average Link Speed Plots

1.92 Therefore, on the basis of our assessment, refined to take into account the optimisation of signal settings from stand alone modelling (the model type introduced by NS):

- i) Journey times will change as a result of assumptions about an uplift in traffic that are not related to the development (without development scenario). This is indicated by the results of the microsimulation model (**Figure MAREbuttal 1-8** and **Figure MAREbuttal 1-9**) and the LCC strategic Model (**Figure MAREbuttal 1-6**)

- ii) Journey times will increase at times with the delivery of the Pickering's Farm development, or the allocation. This will be because of the physical changes to the network (the inclusion of a new traffic signalled junction on the A582, and the improvement to the Bee Lane/Leyland Road junction to better accommodate active travel), and the increase in traffic demand
- iii) On the A582 corridor defined by Route A on **Figure MAREbuttal 1-8** and **Figure MAREbuttal 1-9**, the effect of the Pickering's Farm development, and before any effects due to congestion are taken into account, is that journey times remain within plus or minus one minute for 8 hours of the 12 hour modelled period on the northbound route and for 5 hours of the 12 hour modelled period on the southbound route. In the morning busiest hour the modelled change in journey time is 1 minute 52 seconds northbound and 2 minutes 43 seconds southbound, and in the evening busiest hour the modelled change is 2 minutes 20 seconds northbound and 2 minutes 07 seconds southbound.
- iv) The A582 work only looked at an hour in the morning and an hour in the evening. On that basis the difference in journey time forecast by that model between a current day scenario (2022) and a 2037 scenario without the A582 dualling scheme, but including all growth, including an allowance for Pickering's Farm, is 1 minutes in the morning hour and 20 seconds in the evening hour.
- v) There is no noticeable difference in journey time in the A582 application work between implementing the dualling scheme and not implementing the dualling scheme.

1.93 This reinforces my position that traffic impact is not such that it carries substantial weight when weighing planning matters, and that the absolute performance of the road network will remain within reasonable bounds either with or without our proposed development.

NS Modelling Comments and National Highways No Objection

1.94 At paragraph 4.1.31 onwards, NS reiterates comments made by National Highways NH on 13th May 2022.

1.95 A detailed modelling response to every one of these comments was provided to NH and NS on 27th May 2022. In addition, to try and avoid an argument, the model was updated in that period to take into account the modelling comments that NH said needed action even where we didn't agree that action was needed. This is included in my main evidence. No counter response has since been issued by either NS or NH.

1.96 The development proposals and analysis were provided to NH as part of the planning applications in November 2021. We held meetings, and chased NH for a response, up until 13th May 2022 when a response was received. Our detailed answer to that response was submitted on 27th May 2022. Following subsequent chasing by telephone and email we received an email from NH on 8th July 2022 explaining that given time constraints it was not in a position to provide a final view on the proposals on the basis of the information provided by Vectos that it would be comfortable defending.

- 1.97 NH has subsequently confirmed (letter dated 28th July 2022) that traffic impact and safety on its network as a result of the development is negligible and acceptable, and that it raises no objection to the planning applications. The NH letter confirming this is in **Appendix MAREbuttal 4**.
- 1.98 NS' comments in his evidence make no reference to the 27th May response.
- 1.99 My **Appendix MAREbuttal 1** to this document is a note from my modelling colleague, Mr James Edwards, summarising and explaining the response that we made, and the effect that subsequent action in light of the NH comments has on the model.
- 1.100 There were 11 detailed modelling comments made by NH that it said required action. For the sake of avoiding an argument we made the changes even where we did not accept it was necessary. The latest model runs, including those presented here, include those changes. The consequence is that the model forecasts an improved network performance compared with our previous model runs.
- 1.101 At paragraphs 4.1.79 to 4.1.86 NS quotes journey times results from the TA. This culminates in a statement in 4.1.86 that because a model run that contains a little more traffic shows a journey time on a particular route that is lower, that the model has inconsistencies. This is not a fair conclusion.
- 1.102 The modelling notes explain that in microsimulation modelling every run is different. No two model runs using the same data gives the same results. Vehicle paths through the network vary between runs for the same datasets to reflect the random nature of events that occur in real life. Journey time results can be minutes apart, reflecting real life in this respect.
- 1.103 The general practice is to undertake ten runs of the same dataset and report the averages. The results provide indications from which to make judgements, and they are specifically not accurate forecasts of future reality. No model is able to provide that.
- 1.104 Therefore, it is not reasonable to cast doubt on the credibility of the model on the basis of the numbers in NS's paragraph 4.1.86. A more complete comparison of modelled journey time differences for each of the routes identified in **Figure MAREbuttal 1-12**, are shown in **Figure MAREbuttal 1-13**.

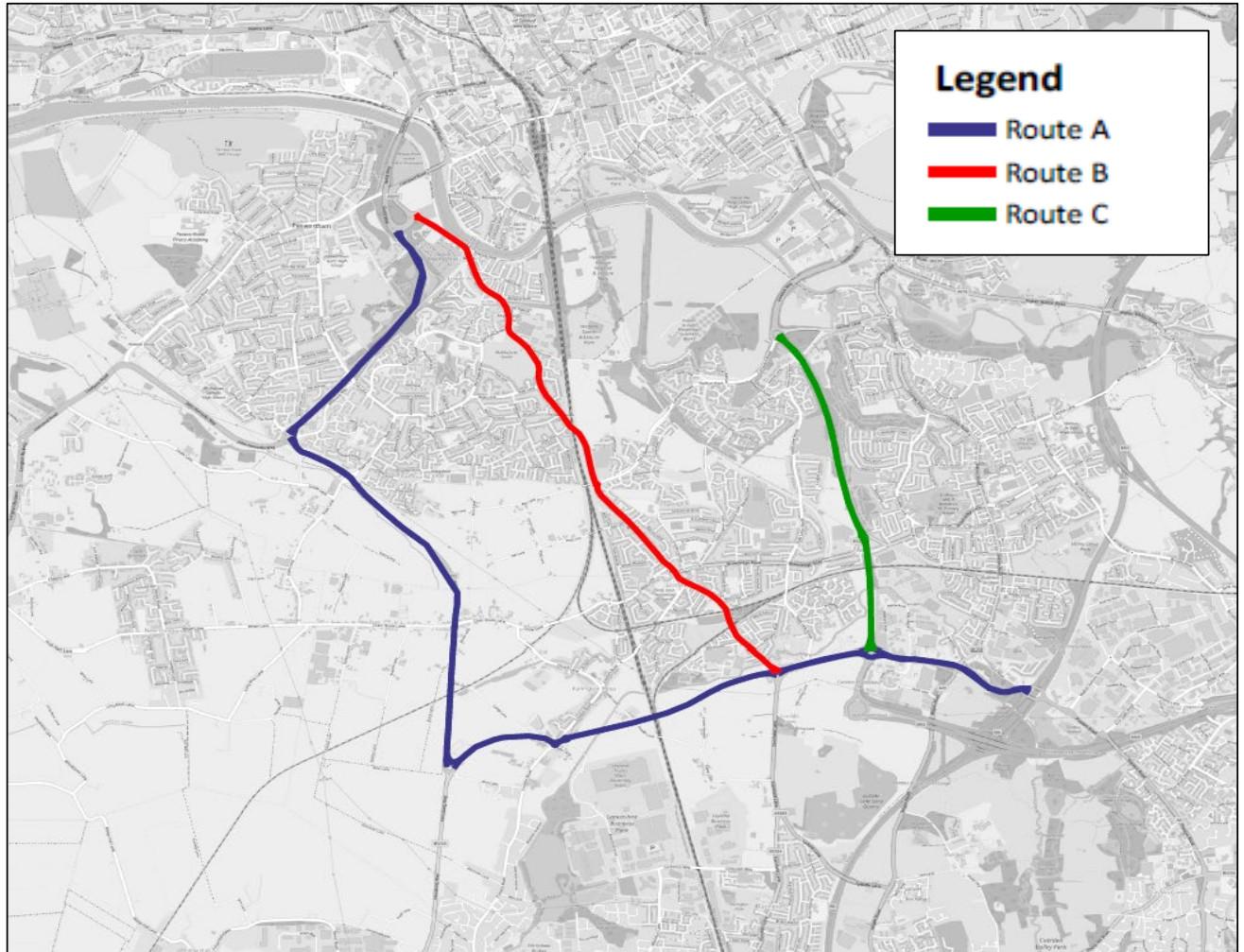


Figure MAREbuttal 1-12: Journey Time Route Identification

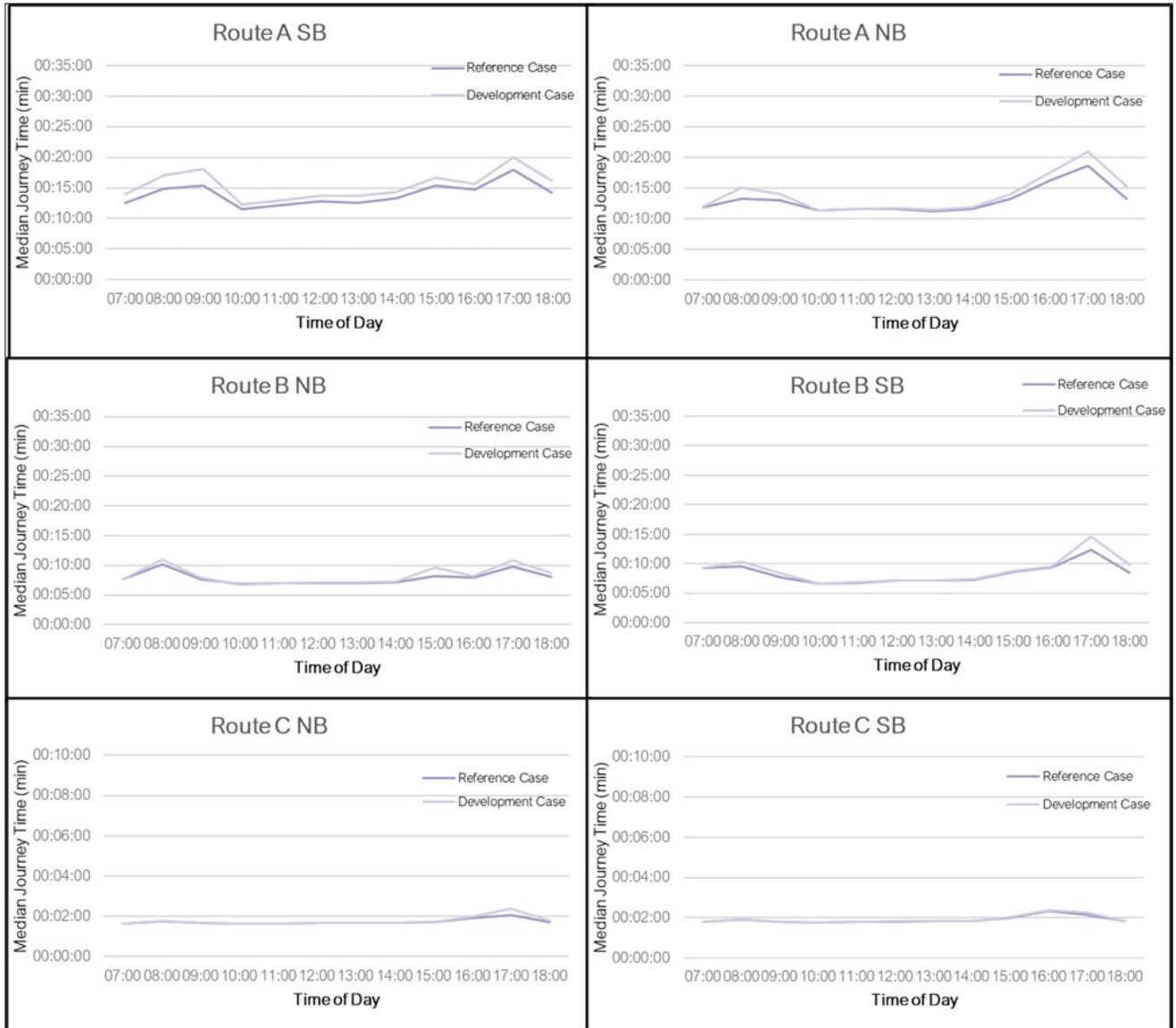


Figure MAREbuttal 1-13: Vectos Journey Time Comparisons

1.105 At paragraph 4.1.91 NS refers to a model forecast of a reduction in mainline motorway flow with an increase in demand flows. The perceived issues arise from a lack of optimisation constraining traffic flows such that the mainline was slightly affected in the PM peak hour within that scenario, but subsequent optimisation (as I have previously discussed) has demonstrated that this is no longer an issue and, as with a large number of the comments raised by NS, is a matter which we could have clarified at an earlier point had comments on the modelling been forthcoming in advance of his proof of evidence.

Trip Distribution

1.106 At paragraph 4.1.63, NS lists various gyms and leisure centres and is critical of the Vectos work because it doesn't specifically address these.

- 1.107 I have explained in my evidence that modelling is an estimate. It is not a precise science and cannot be used as pass fail determinant. I reiterate the Create Streets guidance that modelling is merely treated as an expert opinion as opposed to an ultimate determinant.
- 1.108 In this respect, distributions are an estimate. Both I and NS make judgements. For the reasons set out above and in my evidence I say that my judgements are more refined and therefore closer to likely future reality than NS's, but they are still estimates, as are NS's and they should not be precise.
- 1.109 NS in this paragraph is moving to a level of detail beyond that which he has applied and beyond which is meaningful in the context of the limitations of modelling. There is no reason, and NS has not quantified any, to suppose that not including these specific Preston land uses as destinations affects in any way the judgements drawn from the analysis that has been undertaken.
- 1.110 The same argument relates to NS' comments in 4.1.65 in respect of Preston City Centre and Penwortham Leisure Centre. To place this in context, the distribution to Penwortham Leisure Centre is 13 trips in the morning peak hour. Large percentage differences in these respects are not relevant.

2 Vision and Validate

- 2.1 At paragraph 4.1.10 NS comments on Vision & Validate.
- 2.2 I believe that NS has grossly misunderstood both what is meant by Vision & Validate, and how we have used that approach.
- 2.3 I explain Vision & Validate at Section 3 of my main evidence. I explain that it is an industry and policy standard approach to transport planning.
- 2.4 NS' understanding of our modelling approach is wrong.
- 2.5 For clarity, none of our modelling work has introduced 'traffic evaporation' as NS calls it.
- 2.6 For clarity, contrary to NS' comment, which is not explained, the modelling work is based on local evidence, and I say better evidence than used by NS in his transport assessment work.
- 2.7 For clarity, the modelling work and the model results presented in my evidence are no different whether thought of as a predict & provide approach or a vision & validate approach, with the proviso that there is an implicit element of vision & validate built into this industry standard model, as there is for the LCC strategic model, where they reroute traffic.
- 2.8 The difference is that an extra layer of analysis could be introduced to the modelling with a vision & validate approach. This layer has not been introduced in this case as judgements can be made without it. Similarly, vision & validate attaches less reliance on the specific values provided by the model, instead using them as one of the tools from which to make judgements. Predict & provide, as adopted by NS uses model results from a particular type of model (not my model, or the LCC A582 model as neither can do this) in comparison to a trigger point as the absolute determinant of acceptability.
- 2.9 NS misunderstands the concept of Vision & Validate. It is an expression of real life conditions as opposed to the historic and discredited Predict & Provide, which is not. It is an approach that prioritises good design and community integration, and does not allow that to be fettered by a fear of commuter peak driver inconvenience.
- 2.10 NS is wrong with his assertion that a single development cannot follow a V&V approach. His comment at paragraph 4.1.12 talks about V&V being 'delivered', and in doing so it appears that NS has not understood what V&V is. It is not a facility to be 'delivered' but an expression of the way in which design must proceed. It is an understanding of the way in which people act.
- 2.11 Critically, when it comes to traffic, it understands that volumes are affected by design and convenience, and that it is no longer the highest priority task to forecast a demand and provide for it conveniently as if it will come what may. It is only a phrase used to capture what in common sense happens in real life, which is that people act to minimise their inconvenience.

- 2.12 At paragraph 4.1.14 NS considers the approach ‘aspirational’. For clarity, the modelling work and the mathematical assessments are based on observed effect. The differences between NS and me on development trip attraction are not a function of V&V. The biggest differences are that I have made forecasts on the basis of TRICS people movement and observed journey purpose, where NS has made a forecast based on only traffic in 2013 from a small and historic cul-de-sac, and on the crude assumption that it all travels for the purpose of going to and from work.
- 2.13 However, we do aspire to do better than that which we have modelled, as we should. We have introduced designs and facilities to create that opportunity. I note that the planning and highway authorities also have a part to play, and given their stated aims on climate, health and community, should also have an aspiration and an expectation to do better.
- 2.14 At paragraph 4.1.14, NS has assumed that V&V is a description of some wider area and strategic approach to transport and mobility. This is not the case. There is of course good reason to suppose that a highway authority should work with others to provide a strategic steer for mobility across a region, and I’d expect that here. However, whether or not that does happen does not preclude a V&V approach to design and analysis at every level.
- 2.15 In a number of places in the evidence, NS implies that Vision & Validate is a bespoke approach devised by Vectos. This is a misunderstanding and a misrepresentation. I explain in my main evidence at Section 3 that this is a concept that is policy compliant, and specifically required by guidance, including by the DfT.

Pedestrian Connectivity

- 2.16 At paragraph 4.1.19 NS introduces a view that pedestrian accessibility is limited. There is no supporting explanation.
- 2.17 The pedestrian accessibility is shown in my main evidence at Figure MA5-1. This is an allocated site, and the main Statement of Common Ground at paragraph 2.3 explains that this is a sustainable location within close proximity to local services and amenities. It explains that the site has good accessibility for pedestrians with a number of public rights of way crossing the site.
- 2.18 It appears that NS does not agree with the planning authority in this respect.
- 2.19 Figures MA5-3 in my main evidence show typical walking and cycling times. My conclusion is firm, that this is a sustainable location, with part of that reason being the good connectivity with neighbouring communities of which this will form part.

Public Transport

- 2.20 At paragraph 4.1.19 NS states that there is poor public transport routeing. I don't recognise this.
- 2.21 Public transport is ultimately flexible. The detail of public transport routeing will be determined closer to the time of implementation of the scheme. However, the conversations that I have had with public transport operators provide a variety of opportunities. Arriva is preparing a short document explaining its most interesting hybrid proposal for fixed bus routes at busy times, and demand responsive facilities at less busy times. This is not yet available due to a personal event that affected the individual involved.
- 2.22 I explain in my main evidence the opportunities for public transport facility and priority, including the use of a bus gate within the site enabling bus access to either Leyland Road or the A582, and connection between these if desirable.
- 2.23 There are a number of opportunities for a bus gate. The phasing plans that form part of the Heads of Terms for the S106 document show one option. There is no reason to suppose that public transport routeing is 'poor' as per NS' statement.
- 2.24 The commitment to underwriting public transport provision is within the S106 document.
- 2.25 Public transport provision can be thought of as 'infrastructure' in just the same way as for instance road building is thought of as infrastructure. The commitment set out in the legal agreement is to underwrite the provision of public transport, to at least a minimum standard to be reasonably agreed with the Authorities, for a period of 15 years, addressing NS' concern at paragraph 4.4.42.
- 2.26 This places the onus on the Appellants to deliver it, as opposed to simply providing funding. It will be the Appellant's responsibility, and cost, to achieve this. By this mechanism the incentive is with the Appellants to maximise its use. The commitment is to achieve this from the outset of development (which I have defined as by occupation of the 50th dwelling)
- 2.27 This is not the same as saying that a public transport service requires a subsidy for 15 years, it is instead explaining that the Appellants are sufficiently confident that they can provide a good and self sustaining service through management, through selling and promoting the concept of using public transport and agreement with operators.
- 2.28 By public transport I mean a form of transport that is publicly available and accessible (including by vulnerable users), noting that the forms may well change over time.

3 Infrastructure

Leyland Road/Bee Lane Junction

- 3.1 At paragraph 4.2.30 and 5.1.48 NS refers to technical comments on the layout of the Leyland Road/Bee Lane junction.
- 3.2 I note that the LCC A582 planning application includes, as does our proposal, a conversion of the Bee Lane/Leyland Road junction from a roundabout to a signal controlled junction. However, I note that the A582 Application does not provide a detailed design for the junction, assuming instead in the modelling that it is capable of being changed in this way (i.e. LCC has made the judgement that the junction is capable of modification to a signal controlled junction to satisfy its Application, but without including the detail of that change in the Application).
- 3.3 Our application goes further than the LCC Application and provides an indicative design for the junction. Further detail will be derived post determination at detailed design stage, and will take into account more detailed engineering matters.
- 3.4 For the time being, the layout provided as part of this Application provides sufficient confidence that a suitable junction can be provided in this location, and that it will function in broadly the manner expected in the modelling.
- 3.5 Our technical response to the comments mentioned by NS are covered in the road safety audits and risk assessments presented in my main evidence at Appendix MA-6.

Tardy Gate Signalised Crossing

- 3.6 At paragraph 5.1.53 NS is concerned that increased pedestrian and cycle movements will result in increased delay for motorised users.
- 3.7 I note in my main evidence, that the policy approach, particularly in local scale areas such as this, is that movement by active travel is a higher priority call on space than the convenience of peak period traffic. Therefore, where there is a balance to be had, the onus should be in favour of pedestrians and cyclists.
- 3.8 Encouraging greater activity in this area at the pedestrian scale is a benefit, not as NS implies a disbenefit because it may affect traffic convenience over a short period.
- 3.9 Our stand alone model for this junction already assumes that the pedestrian phases are called at every cycle.
- 3.10 The scale of journey time change on the Leyland Road route that includes this junction is indicated by Route B in **Figure MAREbuttal 1-13** for my model, and in the LCC model in **Figure MAREbuttal 1-6**. In both instance, the differences are not substantial.

Stanfield Lane Model Default Parameters

- 3.11 At paragraph 5.1.66 NS notes that he has manually adjusted a parameter in the stand alone model (saturation flows) to reflect his judgement. I have not found any evidence for the basis or quantum of this. I have not found any evidence for NS's assertion that even then the model is underestimating queuing.
- 3.12 I do though note that these types of model are particularly crude, and even more so when it comes to forecasting real life queuing in busier situations. Defining what a queue is is also difficult.
- 3.13 In scenarios where the mathematical demand is greater than the mathematical capacity the forecast of queuing in these models is unreliable to the point that it is irrelevant as the algorithm is not set up to reflect reality in this way. For this reason, it is inappropriate to place substantial weight on queuing results from these models where the ratio of flow to capacity is high.
- 3.14 I note that NS at paragraph 5.1.67 explains that in this situation a microsimulation model is a better tool and that he would have used such a model if he had more time. We have used a microsimulation model.

A582 Footway Cycleway Connection

- 3.15 At paragraph 2.3.11 NS states that the footway cycleway within the site is not part of the A582 junction scheme and therefore the footway cycleway does not connect with the A582. NS states that he has raised the issue and that he has not had a response.
- 3.16 This is not correct.
- 3.17 A response was provided in a note dated 12th November 2021 and contained within my main evidence at Appendix MA-9.
- 3.18 The response explained that the A582 as it currently is does not include a footway or a cycleway, and therefore there was nothing to connect to (also stated at NS para 2.4.14). It goes on to explain that the alternative junction design (referred to in the 12th November note and submitted as part of the application) does show such a footway cycleway connection, to connect with the proposed A582 footway cycleway as part of the A582 dualling scheme.

A582 Dualling Assessment

- 3.19 At paragraph 2.4.6, NS notes that his team's comments are yet to be provided on the live LCC dualling application. I understand the implication to be that NS, on behalf of LCC, may object to elements of the LCC application or the work and analysis contained within it.

Congestion and Safety

- 3.20 At paragraph 2.4.9 NS has established a direct relationship between increasing congestion and worsening safety (i.e. congestion must be avoided because it means that the road network is unsafe).
- 3.21 This is a relationship for which no evidence is provided, either that it is an effect, or what the degree of that effect might be. This is a rationale being used to perpetuate a Predict & Provide approach.
- 3.22 I am not aware of any evidence to support any premise that this is a substantial effect. To assume that it is as a matter of course would inevitably lead policy back to a peak period demand focussed traffic approach, which as I explain in my main evidence is not the purpose of policy.

CBLR History

- 3.23 I note that the CBLR is a concept designed in the 1970s (NS para 2.4.26). I note that the world is in a different place to that which existed in the 1970s, and there is no reason to apply weight to the CBLR because it was a proposal a long time ago.
- 3.24 There is no evidence in NS's proof to support a case that the CBLR connection is needed in order for the Pickering's Farm scheme to proceed.

Parking Standards

- 3.25 At paragraph 4.1.15 NS states that the Appellants are proposing the use of maximum parking standards. This is not the case. The Appellants will determine appropriate parking provision in discussion with the authorities at detailed design stage.
- 3.26 However, I note that a maximum standard allows any level of parking between zero and that figure. The Appellants are keen to embed this scheme as the most sustainable new development in the region, and will be discussing the use of limited parking, and lower parking than the historic norm, with the authority at the appropriate time.

Mobility Hubs

- 3.27 At paragraph 4.1.21 NS considers that mobility hubs and a concierge will not deliver a step change to sustainable modes. If this attitude were adopted for all measures then we would not move forward.
- 3.28 Whether or not there is a step change, and there is no indication of what that means, it must be reasonable to assume that any change is a benefit, and the sum of small changes becomes a large change at some point. I would expect these initiatives to be welcomed by an authority that says it is committed to sustainable, climate efficient and healthy living.

Bee Lane

- 3.29 NS implies that the intensification of use by pedestrians and cyclists of Bee Lane will result in an unsafe situation.

- 3.30 I set out in my main evidence that typical use of the Bee Lane bridge (and therefore Bee Lane) is in the order of 30 vehicles, 10 pedestrians and 5 cyclists in a daytime hour.
- 3.31 West of the proposed site access I do not expect the number of vehicles to change substantially as a result of the scheme. I expect there to be bus movement along this corridor where there is none at present. Across the bridge itself we estimate the number of vehicles to typically increase by 15 cars plus the new buses in a typical hour.
- 3.32 Our estimate for additional active travel movement on Bee Lane and Bee Lane bridge as a result of the scheme is typically 15 pedestrians and 10 cyclists. We will be encouraging this, and aspire for there to be more.
- 3.33 Whether an environment is acceptably safe is subjective. There is no empirical measure. The only direct evidence that exists is for the current situation. There have been no reported accidents in the five years to 2021 (Ref: LCC MARIO accessed August 2022). This gives good reason to suppose, as NS does, that the current situation is suitably safe.
- 3.34 The character of the road at present is that it is used by leisure walkers, cyclists and equestrians, as well as the occasional car, agricultural vehicle and lorry accessing the homes and businesses in the area.
- 3.35 In my view, that character, and therefore safety characteristic, will not change with the additional active travel users from the scheme. That is my subjective judgement and I'm aware that NS has stated his to be different, to the extent that for Bee Lane bridge NS does not consider that a safe layout is achievable at all (para 4.2.8).
- 3.36 To help with his judgement I would like to draw the Inspector's attention to three matters.
- 3.37 In the first instance I note that the character of the lane in Appendix MA11 of my main evidence is not dissimilar. This lane carries a much higher volume of vehicles and pedestrians. Following receipt of NS' evidence and noting this issue being raised I commissioned a snapshot survey of movement along that lane. The results (for Saturday 6th August 2022 between 0700-1900hrs) were:
- i) Light Vehicles (including cars and vans) – 523
 - ii) Heavy Vehicles – 2
 - iii) Pedestrians – 2,908
 - iv) Cyclists – 35
 - v) Equestrians – 4
- 3.38 The intensity of movement and conflict is much higher. The observed effect is no reported accidents, and so a reasonable interpretation is that this is a suitably safe environment.

- 3.39 In the second instance I note that Bee Lane is similar to a Quiet Lane. Quiet Lanes are minor roads rural in character (not necessarily in a rural area), which are appropriate for shared use by walkers, cyclists, horse riders and motorised users. They have low traffic flows (i.e. less than 1,000 vehicles per day) travelling at low speeds (i.e. 85th percentile speed below 35mph) along narrow road widths (i.e. less than 5m).
- 3.40 I note that this Lane is likely to see in the order of 250 vehicles per day between 0700-1900hrs . It has a speed limit of 30mph and the carriageway is less than 5m. It is not designated a Quiet Lane, and we don't think it necessary to be so. However, it is within the highway authority's gift to promote this as a designated Quiet Lane should it so desire, and if it did, this is something that we would support.
- 3.41 In a Quiet Lane, objectives for improving and maintaining quality of life for local residents take precedence. Roads in a Quiet Lane network are places where the whole of the space is available for a range of different uses. They are places where prescribed local activities may be carried out.
- 3.42 In the third instance I note the Neighbourhood Plan's proposal that active travel along Bee Lane is intensified by its designation as the Penwortham Walking and Cycling Route (see my main evidence at Figure MA3-3).
- 3.43 At paragraph 4.4.55, NS has referred to the DfT's Inclusive Transport Strategy: Achieving Equal Access for Disabled People, implying that its request to pause shared space schemes (paragraph 8.10) means that Bee Lane is inappropriate for active travel as active travel users are not segregated.
- 3.44 This is not my understanding of the advice in the document. I don't believe that the document had existing rural lanes and lanes akin to Quiet Lanes in mind here. I believe that it relates to new scheme designs, such as those in Ashford town centre, which are urban areas with high levels of movement with equal priority afforded to cars, pedestrians, cyclists and others.
- 3.45 NS has commented that Bee Lane may be used as an impromptu school drop off point. I think that this is a good point and requires addressing.
- 3.46 I have spoken with my colleagues about the catchment of the Primary school. I have been told that the school is only anticipated to be required during the later phases of development when the residential development will be substantially occupied forming a large proportion of the likely catchment.
- 3.47 The catchment may include residential areas to the north (i.e. Kingsfold) which already benefits from more attractive and convenient routes linking to the school from Kingsfold Drive. The catchment is not anticipated to extend significantly to the west, and in any case, trips from the west would not require the use of Bee Lane if travelling by car.
- 3.48 It is only the areas in the catchment to the east that could choose to use Bee Lane, but these existing residential areas fall well within the maximum walking distances, thereby limiting the likelihood for car trips. As such, whilst trips cannot be prevented, the potential catchment and layout of the network leads to the conclusion that vehicle trips on Bee Lane to the school would be very low and will not change the characteristics of Bee Lane.

3.49 We have shown three options for bridge layout design, and this is not exhaustive (there can be other permutations). They are:

- i) VN211918 D105, which is a retention of the current shared surface
- ii) Figure 1.4 of Technical Note 04 (November 2021), which has pedestrian corridors on both sides and a 3.0m wide road carriageway
- iii) VN211918 D105 Rev A (see **Figure MAREbuttal 3-1**), which has a single sided pedestrian only corridor and a 4.1m wide road carriageway

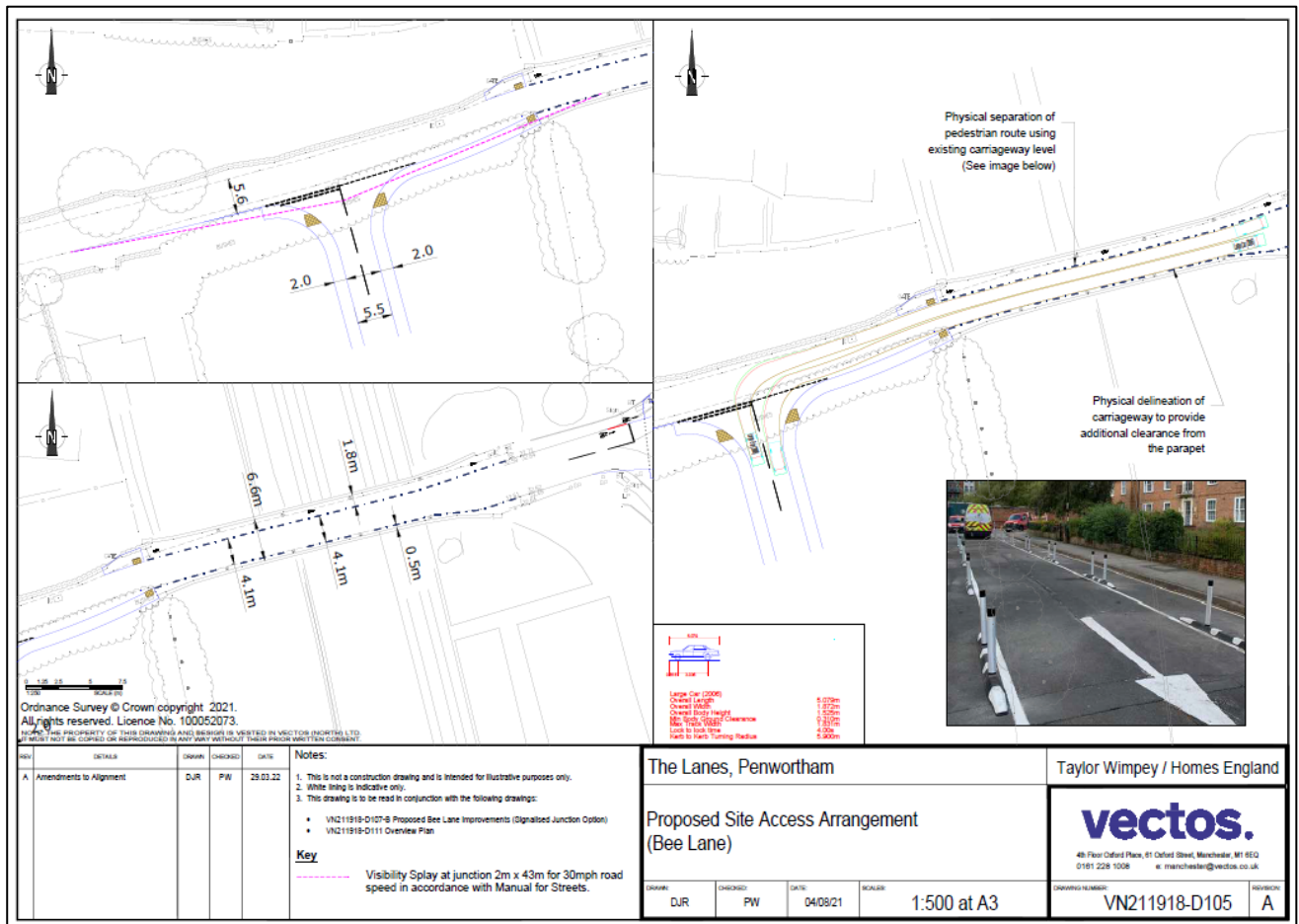


Figure MAREbuttal 3-1: Further Bee Lane Bridge Layout Design

3.50 NS states that he has recently been aware of D105 Rev A. This was sent to NS in May 2022. It has a 4.1m wide carriageway which typically allows two way movement by cars, or cars and cycles, and one way movement by larger vehicles.

3.51 Figure 1.4 of Technical Note 04, with a 3.0m wide carriageway allows one way movement by all vehicles. With a light flow (typically 20-40 vehicles and cyclists across an hour), there is no issue in my view with give way one way operation.

3.52 I again refer to the example in Edale where one way working on a shared surface environment happens and is demonstrably safe and achievable.

- 3.53 NS' criticism (para 4.2.10) is that there is no dedicated provision for cyclists. Cyclists in all respect will share the carriageway with vehicles.
- 3.54 I do not agree that this is a fair test and certainly not a test that should determine whether or not appropriate development should proceed. Across most of South Ribble, Preston and the UK, cyclists share roads with vehicles. Cyclist sharing roads with cars is not a safety problem per se, and NS provides no evidence why it should be here, going further and pointing out that it hasn't been a problem here. There is no expression of policy that states that different highway users must be segregated, and indeed much of modern good practice in creating communities and liveable spaces is that they should not be.
- 3.55 There is an element of a 'welcome to the UK' point, where most of our roads, particularly our rural roads, do not conform with a design that engineers might like to ideally provide in today's world. That does not make them unacceptable.
- 3.56 At 4.2.24 NS queries a date on the designer's response. The safety audit and risk assessment process happened in this way:
- i) 23rd Nov 2021 – Safety Audit undertaken
 - ii) 26th November – Safety Audit provided
 - iii) 27th November (note the date of 17th November on the document is a typo) – designer's response commenced
 - iv) As part of the designer's response, the four issues raised by the safety auditor were accepted, and a new layout plan produced taking these into account, along with comments from Network Rail. The new layout is D105 Rev A.
 - v) 1st March 2022 – designer's response signed off, incorporating D105 Rev A
 - vi) 12th May 2022 – safety risk assessment for D105 Rev A undertaken
- 3.57 The response to the safety audit was D105 Rev A. The safety risk assessment was undertaken on D105 Rev A, with a conclusion of 'low risk'.
- 3.58 The safety risk assessor considered the risks associated with retaining the existing layout (D105), or providing the layout in D105 Rev A 'low risk' (see my main evidence at Appendix MA-6).
- 3.59 I also refer to Coote Lane at paragraph 4.20 of my main evidence, where the one way road carriageway is approximately 3.75m and the pedestrian footway, which is on one side only, is 1.8m. This compares with D105 Rev A where the respective dimensions are 4.1m and 1.8m.
- 3.60 At paragraph 4.2.14 NS states that the provision for cyclists in this respect are 'sub standard' in respect of the DfT's Cycle Infrastructure Design Note 1/20 (LTN 1/20).
- 3.61 NS does not explain in which respect, however, if the implication is in respect of his criticism that cyclists are not segregated from cars this is not correct or fair.

- 3.62 In a world where everything was new construction then the provision for cyclists in Penwortham and Preston, including in this location, may be different. However, that is not the world in which we live. The world in which we live includes historic communities, historic space, public realm, layouts and other elements that we all live and work within.
- 3.63 In the specific case of cycles in Bee Lane and across Bee Lane bridge they share the space with vehicles. LTN 1/20 gives guidance (it is a guidance note). Where segregation between cars and cyclists is mentioned it is in respect of high volume motor traffic. The traffic flows on Bee Lane are not, and will not be, high volume.
- 3.64 At paragraph 4.2.32 onwards NS has raised questions, or commented on, the proposed site access on Bee Lane. I have commented below where this may be helpful to the understanding of the Inspector.
- i) The access is only for access to the proposed housing units. It is not an access to the CBLR
 - ii) The stated road width indicated (noting that this is an outline application and the detail will be determined at a later stage) is 5.5m. This has been designed to accommodate a standard refuse vehicle. There are no proposals for public transport vehicles to use these estate roads. The 'spine road' design through the site safeguarded for the CBLR will be capable of accommodating public transport vehicles
 - iii) Visibility to the left can be achieved.
 - iv) Street lighting will be a matter for later detailed design. We envisage new street lighting at the access junction on Bee Lane, reflective markers on bollards over the bridge, and new lighting at the proposed Bee Lane/Leyland Road junction.
 - v) The updated layout, responding to the statutory comments, have been provided to Network Rail. Network Rail has not responded
- 3.65 At paragraph 4.2.46 I note NS' position that a new bridge over the railway is the only solution for accommodating sustainable travel and public transport movement. I do not agree, and consider that adopting this approach would mean unnecessary construction to the detriment of the SRBC and national aims to minimise and reduce carbon.
- 3.66 If I have understood NS' case at 4.3.13 correctly, NS explains that in his view, limiting most of vehicular access to the A582 makes it inconvenient for local residents to drive to local facilities, and that this makes the development unacceptable. I don't agree. There is no expression of policy that says this.
- 3.67 I do agree that as a result of the strategy the relative attractiveness of sustainable methods of travel are higher compared to using a car than they would otherwise be if there were more vehicular accesses. This is a good thing based on my interpretation of policy. Furthermore, car use is by no means prevented, it is only relatively less convenient.
- 3.68 This is not a good argument in my view for rejecting a sustainable development.

- 3.69 In terms of car travel distances to facilities, NS' table at 4.3.16 does not include the village centre within the scheme. The accessibility of that, and the facilities in neighbouring communities, by active travel for comparison is shown in Figure MA5-3 of my main evidence.
- 3.70 There are good facilities within easy active travel reach for most people as a result of developing in this location. These facilities are also readily accessible by car, but car access is the lesser priority as opposed to the highest priority as befits a modern sustainable scheme.
- 3.71 NS implies (paragraph 4.3.17) that the purpose of the policies in NPPF is to maximise the convenience of accessing facilities by car. I disagree. I note in my main evidence that priority is afforded, in order, to active travel, public transport and then use of the car.
- 3.72 Furthermore, NS considers that limiting vehicle access to the A582 will cause difficulty for some people who will not be comfortable driving on the A582. I do not agree that this is a reasonable approach to take to mobility, or that this should have any weight in balancing planning matters.
- 3.73 We live in a society where provision is made, and understanding given to, vulnerable and disadvantaged people, including those with health and mobility issues. We have societal systems to help people. The design, location, facilities, community concierge, all come together in this site to provide the best possible facility for people of all walks of life. By design it will be a great place to live. By design it will be active, there will be public realm, and people to interact with within it. There will be better access to facilities than the norm.
- 3.74 I have not heard of, or seen any evidence, that we design our communities with different roads to cater for different people. We are better placed designing our communities for inclusivity, as we have done here. There is no evidence that the A582 is a barrier that prevents people travelling by car if they choose to do so, as NS states.
- 3.75 At 4.3.20 NS speculates that conditions on Coote Lane will deteriorate impacting on highway safety.
- 3.76 No evidence has been provided for that speculation, or if there is an effect, the degree of effect. This appears to be consistent with a theme that has been raised by NS elsewhere, that more traffic results in an unsafe highway. I have nothing more to go on here. This is not a characteristic that I have identified, or agree with. There is no demonstration or assessment. In that this remains just an unsubstantiated speculation this cannot carry any weight in the balance of planning matters.
- 3.77 At paragraph 4.3.31, NS has misunderstood the meaning of cul-de-sac in the National Model Design Code. NS treats the 1,100 dwelling development as a cul-de-sac. This is wrong in the context of the Design Code.
- 3.78 The development is not a cul-de-sac. It has excellent through connectivity via multiple accesses with neighbouring communities. Figure MA4-2 in my main evidence shows this.
- 3.79 NS may mean that when thinking only of private vehicles that it has a single point of access. This does not constitute a cul-de-sac in the context of the National Model Design Code. It sets out that in a well connected street each street has more than one connection to another street. This is how the masterplan will be designed. Having a single point of private vehicle access to the community does not preclude or prejudice this.

- 3.80 The principle of the masterplanning will be that the primary movement network, excluding the CBLR corridor, will be the active travel corridors, alongside which there may be roads. This is consistent with the National Model Design Code Guidance Notes (para 21) where vehicle permeability can be controlled by measures within the street space, for instance, to prevent through movement or limit access to certain times of the day. This is also consistent with limiting private vehicle access to the community to one point of access.
- 3.81 The roads within the community will be of different scales, and not as NS implies all tertiary levels of street type. The cul-de-sacs that NS refers to are tertiary areas within the design, not those parts of the design that enable wider movement around the community. The tertiary streets, including cul-de-sacs, are used for servicing or for access to small groups or clusters of homes (p9 of the Code Guidance Notes).
- 3.82 It is unreasonable to refer to the entire community as a cul-de-sac in the context of the phrase in the National Model Design Code.
- 3.83 At paragraph 4.3.39 NS states that he has undertaken an assessment of the change in demand flows should a link to the CBLR be provided. He estimates that about half of the development traffic would use this access to get to Leyland Road. This is a new assessment that I have not seen before and I do not agree that it is either reasonable or likely.
- 3.84 However, I do note that in general, LCC is trying to draw traffic away from Leyland Road, including with its A582 dualling scheme, and certainly not trying to load extra traffic onto Leyland Road. This would appear to be at odds with that aim.
- 3.85 In addition, I note that LCC has made its own assessment of the effect of the CBLR connection, with inclusion of the Pickering's Farm development. This is contained within the A582 dualling application. The results for a situation with and without the CBLR (both with the Pickering's Farm allocation), are in my main proof at Figure MA7-3, and also within **Figure MARebuttal 1-6**.
- 3.86 Scenario 5 is without the CBLR and Scenario 4 is with the CBLR. There is no substantial difference in journey times on either Leyland Road or the A582 as a result of connecting to the CBLR. Therefore, on LCC's own evidence no weight can be attached to NS' speculation at 4.3.40 (and it is just speculation) that conditions will be very different, except to be concerned that if they are different they will be less desirable.

New Railway Bridge

- 3.87 At paragraph 4.4.15 NS states that a new bridge will be necessary to facilitate the CBLR connection. He raises the question of what provision the scheme makes such that a new bridge is not prejudiced.
- 3.88 This is addressed through provision in the S106 document, where land necessary for the bridge and its construction is safeguarded.
- 3.89 There is no design or location for the bridge that we are aware of, therefore a large swathe of land is safeguarded, and development of this parcel of land is left to the last phase.

Emergency Access

- 3.90 NS raises an issue of emergency vehicle access at paragraph 4.4.19.
- 3.91 Emergency vehicle access will be designed into the masterplan from the Lanes, meaning that emergency vehicles will be able to access the sites from the A582, Bee Lane and Flag Lane.

No Private Vehicle Connection Between Development and Lanes

- 3.92 NS has raised an issue of preventing vehicles accessing the Lanes where the development streets cross the Lanes. This is explained in my main evidence at Appendix MA-3.
- 3.93 There are two checks to prevent this connection. The crossing points are designed so that the manoeuvre by a vehicle is difficult or impossible. The second is monitoring and management by signage and ANPR. We will propose making it a traffic offence via a Traffic Regulation Order (TRO) to make these turns, effectively making criminals of anyone undertaking a manoeuvre from the development spine road to the existing lanes (or vice versa) in a private motor vehicle.

Public Rights of Way

- 3.94 At paragraph 4.4.30 NS raises concerns about public rights of way.
- 3.95 For clarity, the LCC public rights of way officer has commented on the scheme, requesting a contribution for public rights of way upgrades. The officer's letter dated 29th October 2021 is in **Appendix MARebuttal 5**. Public rights of way within the site will be upgraded directly by the scheme. The off site public rights of way will be upgraded by LCC in accord with the officer's letter.
- 3.96 This is explained in the S106 document.

4 Dr D. Price Evidence

- 4.1 Dr Darren Price (DP) appreciates the adoption of a Vision & Validate approach and a hierarchy that prioritises pedestrian and cycle movement (para 4.1.2) but is concerned over the implementation and delivery of this.
- 4.2 I note in this context, DP's view, which I agree with, that the adoption of a Vision & Validate approach to move the emphasis away from cars and to pedestrians and cyclists is positive (paragraph 4.9.1).
- 4.3 The commitment to the way in which this is delivered is contained within the S106 document, and includes commitment to the early delivery of local facilities, local active travel connections, a management method and team, and a monitor and manage strategy.
- 4.4 DP at paragraph 4.1.4 is concerned that vehicles in the development will inappropriately access the Lanes. I have addressed this in response to NS above. This will be prevented by design (difficult or impossible to make the turn) and by management through the use of an ANPR (automatic number plate recognition) system associated with Traffic Regulation Orders.
- 4.5 At paragraph 4.1.8 DP is concerned that Bee Lane is not an appropriate route for active travel users. NS has made a similar point and I have addressed this above, including with reference to the likely scale of movement, observed effect elsewhere, the character of Quiet Lanes and the Neighbourhood Plan's proposal to dedicate this as its circular walking and cycling route.
- 4.6 I note DP's view that if The Lanes can be kept largely car free (i.e. as they are now) then they are attractive walking and cycling routes. There is no reason to suppose that the 'largely car free' nature of The Lanes will substantially change as a result of the scheme.
- 4.7 I note DP's view, contrary to NS' view, that the scheme will create a potentially good network of non vehicular routes that will encourage residents out of their cars (paragraph 4.2.1). I agree.
- 4.8 At paragraph 4.2.3 DP addresses public transport.
- 4.9 DP notes, consistent with my evidence, that a number of bus routes pass within reasonable distance of the site. In terms of buses visiting the site I have explained that, the flexibility associated with that, and the responsibility being taken by the Appellant to deliver a well used service, above.

Appendices

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