

Consultation on Harborough District Council Strategic Development Area (SDA)

Highway Authority response to Lubenham Parish Council

July 2013

Background

1. In responding to Harborough District Council's public consultation on the proposed Strategic Development Area (SDA) to the north-west of Market Harborough, Lubenham Parish Council raised a number of issues to do with the transport evidence underpinning the SDA and Harborough Core Strategy (published 2011). The transport evidence was generated using the Leicester and Leicestershire Integrated Transport Model (LLITM).

Purpose

2. This note provides the highway authority's response to the issues that have been raised by Lubenham Parish Council (LPC).

Context

3. It is important to place the response in the wider Leicester and Leicestershire context. The area's population is growing at a faster rate than regionally or nationally and it is predicted to continue to do so. This presents significant transportation challenges.
4. The evidence base underpinning our third Local Transport Plan identified that in comparison to conditions in 2006, by 2026 the number of kilometres travelled by vehicles on the County's road network could increase by over 40%, and delays across the County's road network (i.e. the total amount of time spent sitting stationary in traffic) could increase by over 80%. (This modelling work was undertaken using the earlier, regional Ptolemy model.)
5. Later modelling work undertaken to examine the impacts of an increasing population have indicated figures of different magnitudes. Nevertheless, all study work to date has highlighted:
 - a. that, if peoples travel habits do not change dramatically, it will not be possible to provide a transport system capable of meeting the predicted demand; and thus
 - b. whilst certain measures can be provided to mitigate against the impacts of a growing population, in general conditions on the area's transport system are likely to become worse as time goes on, e.g. increasing levels of congestion and more delays.
6. Having set the context, the remainder of this note seeks to address the issues raised by LPC.

Robustness of the model

LPC issue: The LPC report questions the output being generated from the transport model in the core scenario (households, dwellings, traffic levels, average distance travelled per person) and asks how these compare to work that has been done to look at neighbouring districts and across the county as a whole.

Low Trip rates

7. The perception of 'low trip rates' arises when compared to TRICS or other data that is based on historical sources.
8. However, LLITM trip rates are intended to reflect changing circumstances looking forward. They are derived from the National Trip End Model (NTEM) and based on future changes in population, households, employment and car ownership. The rates are calculated over a 24-hour day to ensure consistency with the workings of the National Transport Model, and outputs from TEMPRO. LLITM output trip rates have been shown to be consistent with NTEM rates at the 24-hour level, which is required for Department of Transport uses and transport scheme business cases.
9. The trip rates from NTEM are mean trip rates across several categories based on population, households, employment, car ownership, journey purposes and demographic trends. It is changes in these and transport costs over time that determines the amount of trip-making. Therefore, LLITM's trip rates track demographic and transport trends rather than use a 'fixed' 85th percentile TRICS trip rate for future forecasting, a concept that is not recognised in NTEM, TEMPRO or Department for Transport's WebTAG guidance which prescribes standards for model development and performance.
10. However, whilst use of NTEM trip rates is the WebTAG recommended approach for transport models, there are often cases in the development control process where further, more detailed assessments are undertaken using data from sources such as TRICs*. This provides an opportunity to look at impacts across a range of potential site traffic generation, ensuring a thorough understanding of a development's potential impacts. TRICS data has been used to look at the impacts of the Airfield Farm site as part of the transport assessment work discussed later in this note.

* TRICs contains little or no data on developments the size of the SDA. Trip rates derived from it might not, therefore, always reflect the greater levels of self-containment that could be achieved by co-locating housing with employment, school, shops and other facilities as part of a planned development.

Household numbers and employment numbers

11. At paragraph 4.1.4 the LPC report claims that: *'With LLITM a 'scenario' system is used whereby population, for the whole of Leicestershire are roughly fixed.'*
12. LLLUM (the land-use component of LLITM) has a variable economic scenario. The scenario is initially constrained in the base case to be consistent with

NTEM V6.2 (i.e. TEMPRO) at the Area Level (i.e. areas roughly consistent with the Census Travel To Work Areas). Within the core the model then allows for higher or lower levels of growth, compared to the NTEM scenario depending upon the land use and transport policy inputs. If these improve accessibility then the level of growth will be greater, if policy has a detrimental effect (by, for example, siting developments in inaccessible locations) then the level of growth will be lower.

13. The population and household scenario is set to be consistent with NTEM at the Modelled Area (i.e. an area that includes Leicester and Leicestershire but also parts of the adjacent authorities). The distribution below this level will be influenced by the economic scenario and the availability of employment.

Comparisons with neighbouring districts

14. Included as a separate attachment to the e-mail in which this note was sent is a table showing household and employment growth for other districts.
15. In addition, the table below provides some traffic data comparisons based on work undertaken for other Core Strategies.

	Percentage change 2008 vs. 2026 core AM peak			
	Harborough	Blaby	Charnwood	Melton
Veh distance (veh km)	+26%	+24%*	+16%**	+24%
Veh delays (veh hours)	+56%	+88%*	+115%**	+53%
Veh queued end of hour (veh)	+65%	not reported	not reported	+69%
Speed (km/hr)	-6%	-14%*	-8%	-4.5%

* comparison 2008 vs. 2031

** derived from figures based on passenger car units (PCUs)

Transport impacts within Lubenham

LPC issue: The LPC report states that: 'The modelling work reveals that the SDA development will cause between 20% and 60% more cars to travel through Lubenham village in the morning peak compared to 2008, but it does not address the impact of this increase in traffic in terms of capacity of links or junctions, delays, reduced speed or increased journey time in a way that is meaningful to residents.'

Harborough District Council Core Strategy Transport Modelling

16. Although the transport modelling work undertaken for the Harborough Core Strategy was not challenged by the Inspector at the Examination in Public, we would not disagree with the statement regarding the information level of detail. But, more detailed work was undertaken in respect of planning applications (see paragraph 23 onwards).

17. The Harborough Core Strategy Modelling Report (Examination in Public – EiP – document EV22) sets out the outcomes of the modelling undertaken to inform the Strategy’s development. Option 3a refers to growth of 1500 dwellings and 5ha of employment land on the SDA and 200 homes elsewhere in Market Harborough. Mitigation Package 2 includes:

- a. Increase in frequency of bus services 44 and X3.
- b. Improvements to the walking and cycling network.
- c. Increased investment in smarter choices.
- d. Making St. Mary’s road one-way (eastbound) in Market Harborough Town Centre.
- e. A 7.5 tonne weight limit on Welland Park Road.
- f. A 25% reduction in long stay car parking spaces in Market Harborough.

18. Appendices I and J of the Modelling Report contain a series of tables that provide highway link volumes for a number of highway links in and around Market Harborough. Four of these links are relevant to Lubenham (as shown below). However, given the strategic nature of the work, more detailed highway indicators (such as vehicle distance, vehicle delay time, vehicles queued and vehicle speeds) were only reported at larger spatial levels (i.e. for Market Harborough and Harborough District).

- a. The A4304 east of Lubenham.
- b. The A4304 west of Brookfield Road.
- c. Foxton Road, north of Lubenham.
- d. The A4304 (Theddingworth Road), west of Lubenham.

19. Some key results from the modelling work undertaken for the Core Strategy are shown in the tables below. The data represents AM peak hour SATURN link volumes on the routes relevant to Lubenham.

Northbound / westbound

Route	2008	Core	Option 3a	Mit 2	Mit 2 increase from 08 base		Mit 2 increase from Core	
					Flow	%	Flow	%
A4304 east of Lubenham	425	567	613	592	+167	+39%	+25	+4%
A4304 west of Brookfield Rd	444	585	640	466	+22	+5%	-119	-20%
Foxton Road, north of Lubenham	156	124	80	79	-77	-49%	-45	-36%
A4304 (Theddingworth Road) west of Lubenham	491	629	651	636	+145	+29%	+7	+1%

Southbound / eastbound

Route	2008	Core	Option 3a	Mit 2	Mit 2 increase from 08 base		Mit 2 increase from Core	
					Flow	%	Flow	%
A4304 east of Lubenham	451	717	792	787	+336	+75%	+70	+10%
A4304 west of Brookfield Rd	514	778	672	640	+126	+24%	-138	-18%
Foxtan Road, north of Lubenham	142	219	196	190	+48	+34%	-29	-13%
A4304 (Theddingworth Road) west of Lubenham	408	514	545	545	+137	+34%	31	+6%

20. From the above tables, it is worth pointing out that traffic volumes on all the highway links looked at around Lubenham are predicted to increase as a result of background growth to 2026 (the core scenario), i.e. reflecting the impacts of population (and economic) growth elsewhere in Leicestershire and beyond.
21. Compared to this increase, the impact of Option 3a on these routes is fairly minimal. If the transport mitigation measures outlined in Mitigation 2 are delivered, it is predicted that these measures will:
 - a. Reduce the impact of the development to levels below the predicted 2026 position for west and eastbound movements on the A4304 west of Brookfield Rd; and
 - b. Do the same for north and southbound movements on Foxtan Road north of Lubenham (note that the development is predicted to reduce the number of northbound movements on Foxtan Road to a level below the 2008 position).
22. If further transport modelling work is required to underpin the proposed review of Harborough's Core Strategy it may be that we report some more detailed highway information (i.e. vehicle delays, queues, speed etc) at a smaller spatial level (i.e. by splitting Harborough District into smaller geographical areas).

Airfield Farm Transport Assessment

23. The Transport Assessment (TA), dated October 2010, looked in more detail at the impacts of housing growth in this area. It was based on a maximum development scale of 1350 residential dwellings plus a 50 bed hotel and a primary school on the Airfield Farm site. The TA did not include for the provision a Link Road through the SDA site to the A4304.
24. In terms of the development's potential traffic generation, the TA was based on figures taken from the nationally recognised and used TRICS database, factored by data for the Logan Ward in Market Harborough that showed that 67% of people living in that Ward travelled to work by car as a single occupant.
25. The distribution of the trips, which was also based on analysis of journey to work data for the Logan Ward, is shown in the diagram included as a separate attachment to the e-mail in which this note was sent. From this, it can be noted

that in the absence of a Link Road through the site development traffic to/from the A4304 west of Lubenham has been routed by Foxton Road and Gallowfield Road, which, ultimately, is likely to be a worst case scenario.

26. A number of junctions in and around Market Harborough were assessed as part of the TA. The results of the assessments most relevant to the area in and around Lubenham are shown below and equate to an assessment year of 2021.

Without development

Junction	AM peak		PM peak	
	Max RFC	Max queue (vehicles)	Max RFC	Max queue (vehicles)
A4304 Theddingworth Rd / Foxton Rd	0.596	1	0.440	1
Gallowfield Rd / Foxton Rd	0.229	0	0.192	0
Gallowfield Rd/ B6047/ Leicester Ln	0.187	0	0.387	1

With development

Junction	AM peak		PM peak	
	Max RFC	Max queue (vehicles)	Max RFC	Max queue (vehicles)
A4304 Theddingworth Rd / Foxton Rd	0.923	7	0.588	1
Gallowfield Rd / Foxton Rd	0.333	1	0.268	1
Gallowfield Rd/ B6047/ Leicester Ln	0.381	1	1.018	9

27. 'RFC' is a measure of a junction's capacity, i.e. much does it have left to accommodate more traffic. It is normally accepted that once an RFC exceeds 0.85 the operation of a junction can become more unstable with increased queues and delays.
28. The TA results show that in the with development scenario the A4304 / Foxton Road junction is predicted to operate slightly above its theoretical capacity during the morning peak based on the 2021 and likewise the Gallowfield Road / B6047 junction in the evening peak. However, on both cases maximum queue lengths remain relatively small.
29. A highway authority has to consider the transportation impacts of new development in accordance the guidance set out in the National Planning Policy Framework; this states that development should only be prevented or refused on transport grounds where the impacts would be severe.
30. In this case, given the small nature of the queues; the fact that they are on the minor arms of the junctions; and that this is, ultimately, likely to be a worst case scenario the highway authority concluded that these impacts were unlikely to be accepted as being severe by a planning inspector (should the development be refused on highway grounds and the applicants appeal against that decision). It was therefore concluded as part of the Harborough Core Strategy transport modelling work that:

- a. 'Based on existing evidence from the transport modelling work to inform our response to the Harborough Core Strategy, should the Airfield Farm proposal (as set out in the current planning application – i.e. with no Link Road provided to the A4304 provided but the possibility of a potential route safeguarded) go ahead in isolation, there is no justification for further mitigation measures in either Lubenham or Foxton.'
31. However, the Highway Authority did recognise that it might need to review this position depending on how development proposals are taken forward in light of the finally agreed masterplan and this remains the case.

The 'core' scenario: the wrong reference

LPC issue: The LPC report states that 'the core scenario is not a true 'no development scenario' as it includes people who could have lived in the SDA.' It recommends that the model runs are re-analysed to look at traffic and congestion in the various SDA development option scenarios and that these are compared to a known level of traffic / congestion either today or at some date in the future immediately before the first building is occupied.

32. The report is right in saying that the core is not a true 'no development' scenario because the core is the authorities' (in this case the County, City and district councils) well-considered best view of the future incorporating both local and national policies and trends.
33. However, the core scenario is the best and most realistic estimate of what a modelled future year might look like (WebTAG 3.15.5). The scenario was introduced to deal with the problem of 'inflated' benefits and impacts due to a change.
34. In this case, a development of the scale proposed is likely to take some 10 to 15 years to complete and over this period the world around it will not stand still. Thus, the purpose of the work undertaken for the Core Strategy was not to find out what might happen today if the SDA were complete (which is an unrealistic assumption), but to construct the future in which that SDA will take place and to compare the SDA against that future rather than against a 'do-nothing' 2008.
35. This provides information about how things might look in 2026, i.e. how will people behave in the light of future changing circumstances (which would not be possible comparing 2008 existing with a situation where the SDA is fully complete in 2008). The core scenario takes account of future economic, transport and demographic changes that would take place over a period of 18 years (2008-2026).
36. To explain further; a comparison at 2008 would be like building a scheme in 2026 to relieve traffic and claiming the benefits from 2008, the existing year, rather than the benefits between a 'do-minimum', now known as 'core', and the do-something scheme which is a more realistic way of isolating the impact of the scheme rather than claiming benefits due to committed schemes as well as the scheme itself.

37. Indeed, the idea of the core came about because it was thought that schemes submitted on the basis of the old 'do-minimum' were claiming more benefits than should have been the case if they were considered the most likely schemes that could well be on the ground when the proposed schemes opened. The 'no development' scenario mentioned in the report's section 4.1.3 is a 'do-nothing' scenario which fails to take account of changes over time in the economy (e.g. Gross Domestic Product), car ownership, population, employment, households and changes in transport costs (fuel prices, vehicle operating costs, fares – bus fares in the County have gone up by about 50% between 2007 and 2013). These changes change both the scale and pattern of transport demand and to ignore them would run counter to guidance.

Smarter Choices campaign

LPC issue: The LPC report challenges how the smarter choices modelling work has been undertaken.

38. The Highway Authority acknowledges that the reporting of Smarter Choice measures could have been clearer in the work undertaken to underpin the Core Strategy. In particular, the impact of Smarter Choices could have been reported separately from the 'hard' infrastructure measures so that the potential benefits of each could be quantified more readily. This is something that we have subsequently done in other Core Strategy modelling work.
39. The assumptions about the levels of investment (i.e. £200k per annum) on smarter choice measures were thought appropriate at the time, based on the best available budget forecasts. However, this is something that is reviewed for each application of the model.
40. In terms of the potential impacts of Smarter Choice measures, whilst they are an important part of our efforts to change peoples' travel behaviour, the modelled impacts of all of the sustainable transport measures as tested (i.e. including bus service improvements), appears to be relatively small. Over a 24hr period, highway trips are generally forecast to make-up 70% to 75% of all trips for all development options and across both mitigation packages, save for Option 3a, which in all cases has the share of highway trips predicted at around 68%.
41. It is interesting to compare these figures with the Census derived data for the Logan Ward used as part of the more detailed TA work, which showed that 67% of journeys to work were made by single occupancy car trips.
42. In the light of this, we remain of the view that the assumptions made in respect of Smarter Choices was appropriate for the strategic level of work that was undertaken. Nevertheless, the Harborough work was carried out when there was no formal guidance in place regarding the modelling of Smarter Choices and the approach undertaken was based on the best information available regarding the impact of Smarter Choices measures from the Department for Transport-funded 'Demonstration Town' projects. We learnt a lot from it, but we accept that the approach may well need to be reviewed in taking forward any further modelling work that may be undertaken to inform the review of the Strategy.

Core Strategy CS13: A4304 to B6047 Link Road

LPC issue: 'None of the information presented in the LLITM report provides evidence to support nor reject the need for the Link Road, nor does it highlight the benefits that it would produce.'

43. The Harborough Core Strategy Modelling Report (Examination in Public – EiP – document EV22) sets out the outcomes of the modelling undertaken to inform the Strategy's development. Appendix J of the document contains a series of Tables that provide modelled flows on certain sections of road in and around the town. It is acknowledged that there was not a single table comparing the scenario of 1500 dwellings and no Link Road (Option 3) with a scenario of 1500 dwellings with a Link Road (Option 3a), but there were individual tables for both Option 3 and Option 3a.
44. However, to enable a direct comparison the table on the next page is based on Appendix J and highlights potential modelled changes in traffic flows comparing Option 3 to Option 3a; it also enables comparisons to, and between, modelled flows for 2008 and the 2026 core.
45. From these flows, looking initially at the figures for options 3 Mit 1 and 3a Mit 1, it can be seen that a Link Road would:
 - a. Provide some traffic reduction benefits to local routes in and around Lubenham, although predicted traffic flows along the A4304 remain largely unchanged in the vicinity of the village; and
 - b. Have mixed effects within Market Harborough, with some routes predicted to see flows reduced and others increased.
46. Based on its previous examination of these figures, in its statement to the Core Strategy EiP (document PS31), the Highway Authority concluded: *'Considered in isolation, a Link Road's potential overall traffic benefits to the town are predicted to be modest in comparison with the quantum of changes between 2008 and 2026. (There is not a strategic north to west traffic movement and it is difficult to imagine a circumstance in which such a road would attract public funding.)'*
47. However, different conclusions were reached when considering the predicted impacts of a potential traffic management scheme in the town centre that might involve making St. Mary's Road one way (eastbound) away from The Square. Looking at the predicted figures for Option 3 Mit 2 and Option 3a Mit 2, this would appear to provide significant traffic relief to St. Mary's Road, with Option 3a, including the Link Road, providing generally the greatest level of relief; it is also anticipated that the Link Road should help to reduce the impacts of making St. Mary's Road one-way on some north eastern areas of the town.
48. In this context, the role of the Link Road would be to provide an extra link to the area's relatively limited road network as part of an overall package of measures to deal with the impacts of growth on Market Harborough and its surrounding settlements. It is for this reason that the Highway Authority proposed the Core Strategy was changed to ensure that development proposals did not prejudice the Link Road's future delivery. This proposal was agreed by the District Council, discussed at the EiP and accepted by the Inspector.

Harborough Core Strategy Modelling Work – Table comparing Options 3 and 3a

Area	Route	Total 2-way Flows in Passenger Car Units from LLITM AM peak					
		2008	2026 Core	Option 3 Mit 1*	Option 3 Mit 2*	Option 3a Mit 1*	Option 3a Mit 2*
SDA	Link Road north	-	-	-	-	926	1082
	Link Road south	-	-	-	-	660	800
North of town	B6047 north of development	944	1261	1484	1628	1831	2010
	B6047 south of development	949	1256	1353	1451	1295	1350
Within town	Leicester Road north of Bowden Lane	909	1070	1098	1217	1139	1219
	St. Mary's Road west of Kettering Road	963	1079	1072	658	1027	622
	A508 Northampton Road South of The Square	604	839	808	1136	861	1123
	A4304 west of Brookfield Road	958	1363	1496	1394	1288	1106
West of town	A4304 east of Lubenham	876	1284	1316	1260	1398	1379
	A4304 west of Lubenham	899	1143	1148	1111	1187	1181
	Gallow Field Road, Gartree	430	570	516	541	422	429
	Foxton Road, north of Lubenham	298	343	335	335	266	269
	Langton Road north of Foxton	268	337	340	341	318	328

Option 3 = 1500 houses and no Link Road

Option 3a = 1500 house with Link Road

Mit 1 = Mitigation Package 1, including increase in frequency of bus route 44, serving the development; improvements in the walking and cycling network; and additional Market Harborough Smarter Choices initiatives
 Mit 2 = Mitigation Package 2, including above measures plus St. Mary's Road one-way out of The Square; 7.5t weight limit on Welland Park Road; and increase in frequency of bus route X3 between Mkt Harb and Leicester

Addressing other concerns

LPC issue: As well as the above, the LPC report also asked the Highway Authority to re-analyse the transport modelling work to: identify congestion today or in the reference (base) year; identify congestion in the future; determine the contribution of congestion from the SDA; propose mitigation measures; test mitigation measures.

49. Unfortunately, the highway authority does not have the resources to conduct any further work in respect of the previous Core Strategy modelling work. In any event, the TA work to date has looked at matters in greater detail and has been based on trip rates derived from the nationally recognised and used TRICS database. This more detailed work has drawn no significantly different conclusions about the development's potential impacts than the previous, strategic level LLITM examination.
50. However, it will be necessary for the promoter of the remainder of the site to submit a transport assessment in support of their planning application, and it is expected that this will need to look at the impacts of site as a whole (i.e. not just the remainder). The conclusions reached about the potential impacts on routes in and around Lubenham will be reviewed in the light of this work and the issues that LPC have raised; it will also be reviewed in the light of in light of the finally agreed Masterplan for the SDA. It should be remembered, however, that the National Planning Policy Framework sets out that a development should only be resisted or improvements sought if the impacts would otherwise be severe.
51. In addition, based on what we have learnt and the comments in the LPC report, we will consider ways to improve the clarity and detail of information that is provided as part of any further LLLITM modelling work undertaken to inform the review of the Core Strategy.

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