WARRINGTON
Borough Council

Warrington Borough Council

TOWN AND COUNTRY PLANNING ACT 1990

TOWN AND COUNTRY PLANNING (APPEALS) (INQUIRIES PROCEDURE) (ENGLAND) RULES 2000

PROOF OF EVIDENCE FOR

Mike Taylor, PGDip

Warrington Borough Council

Public Inquiry against the decision by Warrington Borough Council to refuse planning permission for a Major Development on land at Peel Hall, Warrington

Local Authority Reference: 2016/28492

PINS Reference: APP/M0655/W/17/3178530

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1.0 Introduction

1.1 My name is Mike Taylor and I am the Team Leader of the Transport Development Control Team at Warrington Borough Council. I hold a BTEC Higher National Certificate in Civil Engineering Studies and a Postgraduate Diploma in Transport Engineering and Planning. I have worked at six highway authorities and have over 30 years of experience in transport engineering; the last 20 plus years of which have been specifically in dealing with Highways/Transport Development Control issues.

1.2 I was employed by Warrington Borough Council in October 2017 and my position includes the examination and assessment of major development proposals from a transport/highways perspective. I did not consider the original planning application during the statutory consultation period prior to the decision to refuse planning permission on 24th February 2017 but I did subsequently examine the information submitted in support of the application and review the transport information provided since my appointment. I gave evidence at the previous Public Inquiry in 2018 on the basis of this.

1.3 I have since examined the additional information submitted in support of the application and reviewed the transport information provided specifically the Transport Assessment Addendum (TAA) submitted by Highgate Transportation dated March 2020. My review of this is attached as Appendix A.

2.0 Inquiry Issues

2.1 Following the original decision to dismiss the appeal Satnam and their transport consultants Highgate have engaged with the Council in pre-application discussions to undertake the necessary transport modelling utilising the Council's multi-modal transport model (WMMTM16) to create a highway-only cordon model (Peel Hall WMMTM16) to inform the strategic impacts of the proposed Peel Hall development.

2.2 The outputs from the Peel Hall WMMTM16 allow more detailed modelling at specific locations and the Council have agreed the junctions identified for specific analysis.

2.3 The Council have also agreed the use of a VISSIM micro-simulation model to assess the development impacts along the A49 corridor including M62 J9 and the A49/A50 junction. At the time of writing the VISSIM base model referenced in the Transport Assessment Addendum is not agreed by the Council and until such time as it is no confirmation can be given that it can be used to accurately represent typical conditions on the network. It is anticipated that the base modelling may be agreed later this week.

2.4 The VISSIM base model referenced in the Transport Assessment Addendum (TAA) is not calibrated or validated in accordance with WebTAG. WebTAG should serve as a best practice guide for transport modelling and appraisal and the VISSIM Methodology Note setting out how the model was

developed (included at Appendix 30 of the TAA) highlights that WebTAG guidance will be followed. The issues relate to the journey time on the east-west links of the model i.e. the Sandy Lane West and the A50 Long Lane approaches, where the development impact will be critical, but where the model data did not represent recorded journey times from known data sources.

2.5 Additionally the queue lengths reported in the model did not appear to reflect the typical situation along those same links. Given the Covid-19 situation it was not possible to verify actual queue lengths but the queue outputs were assessed by the Council's Traffic Signals Team and their opinion is that the queue lengths produced by the model were significantly different to those occurring along Sandy Lane West and the A50 Long Lane based on traffic conditions pre Covid-19. The Traffic Signal Team monitor performance on the network on a daily basis and have extensive day-to-day knowledge of the network with the benefit of cameras and signal monitoring equipment.

2.6 In order for VISSIM to then produce forecast scenarios the Base Model needs to be agreed. The VISSIM forecast model is not yet agreed by either the Council or Highways England. Notwithstanding the Council's issues with the Base Model there are also issues with the work carried out to produce the forecast traffic demand scenarios; there is no complete methodology and audit trail of how outputs have been produced and no clear indication of what the future forecast traffic flows for VISSIM actually are.

2.7 It may well be that the forecast model is approved in advance of the Inquiry but until it is agreed the specific impact of the development on the individual junctions along the A49 corridor and along the corridor as a whole cannot be determined. A timeline of the VISSIM work is produced at Appendix B.

2.8 My evidence will consider the specific impacts of the proposed development and highlight the reasons why an objection is raised in respect of the impact on the highway network.

3.0 Policy Context

3.1 In this section I will cover the policy issues relevant to transport and the assessment of the development proposals.

3.2 A key emphasis of national and local planning policy is to achieve sustainable development with safe and suitable access for all people and the transport elements of any development proposal are vital not only in connecting individuals with jobs, education, healthcare, shopping and leisure but also in connecting communities, shaping neighbourhoods and impacting on economic growth, safety and amenity.

3.3 National planning policy is set out in the National Planning Policy Framework (NPPF) which is supported by planning practice guidance (PPG) that is regularly updated to supplement the framework. The NPPF defines the parameters against which planning decisions must be taken and notes that

development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe. PPG highlights that Transport Assessments are the means of assessing potential transport impacts of developments and they should be thorough with all information and assumptions set out in a clear and publicly available form.

3.4 Warrington's Local Transport Plan 4 (2019-2040) (LTP) helps the council to address local transport issues by providing a framework for decisions on future investment. The LTP sets out objectives for transport to support the wider goals and ambitions of the council and established policies to help achieve these objectives.

3.5 The Local Plan Core Strategy for Warrington was adopted in July 2014 representing the overarching strategic planning policy in the Local Planning Framework and sets out the policies against which planning applications will be assessed. The key policies that relate to the proposed development are described in more detail as follows:

3.5.1 Policy CS1 Overall Spatial Strategy – Delivering Sustainable Development – This policy states that development proposals that are sustainable will be welcomed and approved without delay provided that they accord with national and local planning policy frameworks and have regard to, amongst others:

The need to make the best use of existing transport, utility, social and environmental infrastructure within existing settlements, and ensure additional provision where needed to support development.

The need to safeguard environmental standards, public safety and residential amenity.

3.5.2 Policy QE6 – Environment and Amenity Protection – This policy highlights that the council will only support development which would not lead to an adverse impact on the environment or amenity of future occupiers or those currently occupying adjoining or nearby properties, or does not have an unacceptable impact on the surrounding area. Factors taken into consideration include, amongst others:

The effect and timings of traffic movements to, from and within the site and car parking including the impacts on highway safety.

3.5.3 Policy QE7 – Ensuring a High Quality Place – This policy states that the council will look positively upon proposals that are designed to, amongst others, function well in relation to existing patterns of movement and activity.

3.5.4 Policy MP1 – General Transport Principles – This policy defines the general principles by which the council will support development.

3.5.5 Policy MP3 – Active Travel – This policy highlights that a high priority will be given to the needs and safety of pedestrians and cyclists in new

development and that enhancements and improvements should look to increase accessibility.

3.5.6 Policy MP4 – Public Transport – This policy states the council's aims to secure improvements to public transport infrastructure and services and to make public transport a viable and attractive alternative.

3.5.7 Policy MP7 – Transport Assessments and Travel Plans – This policy requires all development to demonstrate that it will not significantly harm highway safety, to demonstrate that generated trips can be adequately served by the transport network, to identify where there are significant effects on the transport network and ensure that appropriate mitigation measures are in place. It also highlights the need to ensure that development will not prejudice the primary function of the Strategic Road Network.

3.5.8 Policy MP10 – Infrastructure – This policy highlights that the council will ensure that Warrington's future growth is supported and enhanced through the delivery of necessary infrastructure.

4.0 Background

4.1 The history behind the original application for the Peel Hall development proposals submitted in August 2016 is covered in my original Proof of Evidence for the Public Inquiry in 2018.

4.2 During the course of that Inquiry additional information was submitted by the appellant resulting in the production of my Supplementary Proof of Evidence and my Second Supplementary Proof of Evidence for the Inquiry.

4.3 Following the original decision to dismiss the appeal Satnam and their transport consultants Highgate engaged with the Council in pre-application discussions to undertake the necessary transport modelling utilising the Council's multi-modal transport model (WMMTM16) to create a highway-only cordon model (Peel Hall WMMTM16) to inform the strategic impacts of the proposed Peel Hall development. The issues were discussed at a Pre-Application meeting in February 2019.

4.4 The Council appointed WSP to act as modelling consultants and they prepared the Peel Hall Scope of Modelling document in February 2019 (Appendix C) to identify the necessary modelling work required to identify areas on the Warrington road network that would be impacted by the traffic generated by the development.

4.5 The Scope identified the use of the Council's WMMTM16 to create a highway-only cordon model (Peel Hall WMMTM16) to inform the strategic impacts of the proposed Peel Hall development.

4.6 The Scope then identified the parameters where further more detailed assessment is required and the necessary software modelling packages to be

used using the Peel Hall WMMTM16 modelling outputs. The scope was shared with the appellant following the February meeting.

4.7 Further meetings and discussions followed to progress the pre-application and agree the work required. In October 2019 the original Appeal decision was quashed. At that time no results of the modelling had been reviewed by the Council nor had any indication of how such results were interpreted been made available.

4.8 The Transport Assessment Addendum (TAA) for Peel Hall which took account of the discussions through the pre-application process was received on 23rd March 2019. My review of this is included as Appendix A.

5.0 Issues of concern

Impact on the residential area south of the development

5.1 It is clear from the results within the TAA that the proposed development has a significant impact on the residential roads south of the development site; the impact is discussed within the main body of the TAA at paras 6.9 to 6.18 which is based on the more detailed analysis within Appendix 15 *TN09 Link Capacity*. However, the assessment of impact is based on reference to the now withdrawn Design Manual for Roads and Bridges document TA 79/99 *Traffic Capacity of Urban Roads*, the current Department for Transport (DfT) document *Manual for Streets* and the dated 1997 Institution of Highways and Transportation document *Transport in the Urban Environment*.

5.2 The methodology used is not considered appropriate as it takes no detailed account of heavy on-street parking that occurs in the area, the number of frontage accesses to dwellings, pedestrian and cycle movements or of the extensive traffic calming measures in the area. All of these issues influence movement along a route to an extent that an empirical value of maximum theoretical capacity cannot be assumed.

5.3 As highlighted in section 5.1 above the use of the DMRB document TA 79/99 *Traffic Capacity of Urban Roads* is now withdrawn. Notwithstanding the fact that is no longer used TA 79/99 was based on analysis of traffic flows on urban trunk roads in Greater London and was used as the starting point for the design and assessment of new urban trunk road links. It was referenced as a guide to the capacity of existing urban roads, however, it is not considered that Poplars Avenue or the other residential roads to the immediate south of Peel Hall represent the definition within the document of an Urban All-Purpose Road (UAP) and certainly not a UAP3 road as referenced in paragraph 6.17 of the TAA.

5.4 Local typical urban roads meeting the definition of the document would be considered for example to be the A49, the A50 and the A57. The roads south of the development site such as Sandy Lane West, Poplars Avenue and

Capesthorne Road, the main routes through the area, are all unclassified residential roads; as are all of the adjoining roads.

5.5 Tables 2 and 3 of *TN09 Link Capacity* highlight the difference in link flows during the AM and PM peak periods respectively on a number of residential roads within the study area. These are produced below for reference:

Table 2 – Link flows within the study area (2032 Do Minimum and 2032 Do Something) AM Peak Hour

Link Name	AM Peak Hour						
	2032 DM (Flow 1)	2032 DM (Flow 2)	2032 DM (Two-Way)	2032 DS (full) (Flow 1)	2032 DS (full) (Flow 2)	2032 DS (full) Two-Way	2032 DS (full) - 2032 DM Two-Way
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	580	443	1023	800	686	1486	463
Capesthorne Road (Poplars Ave - parallel to Humber Road)	443	261	704	648	399	1047	343
Cleveland Road	244	286	530	299	341	640	110
Cotswold Road	13	30	43	46	40	86	43
Howson Road	26	22	48	44	23	67	19
Greenwood Crescent (Darley Ave to Grasmere Ave)	129	181	310	135	264	399	89
Greenwood Crescent (Grasmere Ave to Meteor Cres)	242	269	511	212	350	562	51
Poplars Avenue - East of (Central) Site entrance	398	208	606	564	300	864	258
Poplars Avenue (Greenwood Cres - Capesthorne Road)	575	489	1064	680	628	1308	244
Poplars Avenue (south of Capesthorne Road)	454	416	870	508	556	1064	194
Sandy Lane West	418	510	928	503	562	1065	137
Sandy Lane	274	201	475	276	213	489	14
Statham Avenue	299	118	417	401	108	509	92

Table 3 – Link flows within the study area (2032 Do Minimum and 2032 Do Something) PM Peak Hour

Link Name	PM Peak Hour						
	2032 DM (Flow 1)	2032 DM (Flow 2)	2032 DM (Two-Way)	2032 DS (full) (Flow 1)	2032 DS (full) (Flow 2)	2032 DS (full) Two-Way	2032 DS (full) - 2032 DM Two-Way
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	577	407	984	812	570	1382	398
Capesthorne Road (Poplars Ave - parallel to Humber Road)	484	322	806	711	477	1188	382
Cleveland Road	190	366	556	241	431	672	116
Cotswold Road	22	11	33	45	37	82	49
Howson Road	17	23	40	32	41	73	33
Greenwood Crescent (Darley Ave to Grasmere Ave)	5	3	8	8	6	14	6
Greenwood Crescent (Grasmere Ave to Meteor Cres)	44	49	93	44	49	93	0
Poplars Avenue - East of (Central) Site entrance	374	256	630	495	432	927	297
Poplars Avenue (Greenwood Cres - Capesthorne Road)	505	786	1291	1014	616	1630	339
Poplars Avenue (south of Capesthorne Road)	320	417	737	339	476	815	78
Sandy Lane West	552	513	1065	638	595	1233	168
Sandy Lane	186	419	605	189	443	632	27
Statham Avenue	362	95	457	434	102	536	79

5.6 As can be seen from these tables the increases during the peak periods as a direct result of the proposed development are substantial, with key increases highlighted as follows as vehicles per hour:

Link Name	AM Peak Hour – Two-way flows

	Without Development	With Development	Increase	% Increase
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	1023vph	1486vph	**463vph**	**+45%**
Capesthorne Road (Poplars Avenue parallel to Humber Road)	704vph	1047vph	**343vph**	**+49%**
Poplars Avenue (East of central site access)	606vph	864vph	**258vph**	**+43%**
Poplars Avenue (Greenwood Crescent to Capesthorne Road)	1064vph	1308vph	**244vph**	**+23%**

Link Name	**PM Peak Hour – Two-way flows**			
	Without Development	With Development	Increase	% Increase
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	984vph	1382vph	**398vph**	**+40%**
Capesthorne Road (Poplars Avenue parallel to Humber Road)	806vph	1188vph	**382vph**	**+47%**
Poplars Avenue (East of central site access)	630vph	927vph	**297vph**	**+47%**
Poplars Avenue (Greenwood Crescent to Capesthorne Road)	1291vph	1630vph	**339vph**	**+26%**

5.7 These are considered significant increases on residential roads which already experience traffic and safety related issues in an area where substantial traffic calming and traffic management interventions have been implemented.

5.8 Theoretical capacity has many influences of which one is the presence of direct frontage access for which the turning manoeuvres to and from affects movement along the main carriageway; as vehicles hold up flow whilst waiting to turn into the access or, when turning out, influence the movement along the main carriageway. As such, high volume routes were not recommended to have frontage access.

5.9 The 2007 document Manual for Streets (MfS) raised the recommendation for roads having frontage access from previous guidance of 3,000 vehicles per day to 10,000 vehicles per day. Whilst it does make reference to the potential to increase this limit further it should be noted that Warrington as Highway Authority has not, and still deems 10,000 vehicles MfS limit as the maximum

for frontage access; as highlighted in the Council's *Design Guide for Residential and Industrial Estate Roads* (2008).

5.10 Table 4 (included below) of TN09 highlights the Average Annual Daily Traffic (AADT) along the key residential roads immediately south of Peel Hall and confirms that as a direct result of the proposed development Capesthorne Road and Poplars Avenue (south of Capesthorne Road) will experience traffic flows in excess of the 10,000 vehicle limit with AADTs of 12,860 vehicles and 10,365 vehicles respectively. It also highlights that Sandy Lane West will experience a substantial increase over and above the 10,000 vehicle limit to 12,670 vehicles and that Poplars Avenue (Greenwood Crescent to Capesthorne Road) will experience an AADT of 16,204 vehicles; well in excess of the flows currently experienced along the A50 Long Lane.

Table 4 – AADT24 Link flows within the study area (2032 Do Minimum and 2032 Do Something)

Link Name	AADT_24		
	2032 DM	2032 DS (Full)	2032 DS (Full) - 2032 DM
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	9004	12860	3856
Capesthorne Road (Poplars Ave - parallel to Humber Road)	6771	10022	3251
Cleveland Road	5988	7234	1246
Cotswold Road	419	921	502
Howson Road	485	783	298
Greenwood Crescent (Darley Ave to Grasmere Ave)	1753	2277	524
Greenwood Crescent (Grasmere Ave to Meteor Cres)	3325	3611	287
Poplars Avenue - East of (Central) Site entrance	6809	9875	3066
Poplars Avenue (Greenwood Cres - Capesthorne Road)	12984	16204	3220
Poplars Avenue (south of Capesthorne Road)	8871	10365	1494
Sandy Lane West	10988	12670	1682
Sandy Lane	5955	6186	232
Statham Avenue	4819	5756	937

5.11 The A50 Long Lane is the main east-west route on the highway network south of the residential area and currently (2019 data) has an AADT flow of 12,162 vehicles. Its prime function is the movement of traffic.

5.12 It is worth highlighting that the residential road of Poplars Avenue will ultimately carry more traffic than the classified A50 Long Lane as a direct result of the proposed development. This is highlighted below with an extract from the approved AADT flows used for Air Quality analysis attached as Appendix D and contained within Addendum 2 to ES Volume 3: Appendix 12.4, Table 12.4.1 which highlights a 2022 opening year full development scenario.

Link No.	Link Name	2019 AADT	2022 AADT (without development)	2022 AADT (with development)	Increase
14	A50 Long Lane	12,162 vehs	12,379 vehs	12,505 vehs	+126 vehs
58	Poplars Avenue (Greenwood Crescent to	8,853 vehs	9,937 vehs	13,464 vehs	+3,527 vehs

	Capesthorne Road)				

5.13 It can be seen that the development results in an increase in Average Annual Daily Traffic of 3,527 vehicles along Poplars Avenue; causing Poplars Avenue to carry more traffic than the designated classified A road serving east-west movements.

5.14 It is considered that traffic levels of this volume will have a severely detrimental effect on the operation of the residential roads south of Peel Hall such that the very nature of the Poplars Avenue, Sandy Lane West and Capesthorne Road route will change so that the primary function becomes movement. This will subsequently alter the character of the area with potential impacts on public safety, residential amenity and the movement of vulnerable road users.

5.15 Despite the statement within the TAA (paragraph 11.6) that the area is appropriate to cater for traffic generated by the development, mitigation is proposed in the form of removal of on-street parking by providing verge parking areas and an extension to the existing 20mph speed limit on Poplars Avenue as well as a range of traffic calming/traffic management measures.

5.16 Notwithstanding the potential of the measures proposed in terms of facilitating vehicle movements, indeed they are measures that have been considered by the Council to address existing traffic congestion in the area, they raise specific issues. Verge parking is intended to free up road space to improve traffic movement but the detrimental impact is a likely increase in vehicle speeds as motorists have no physical obstruction.

5.17 The extension of the 20mph limit is not supported. This currently highlights the main residential route for movements through the estate and assists through the provision of terminal signing in highlighting the effectiveness of the existing 20mph routes. If the 20mph speed limit were extended it would require the removal of terminal signs which may lead to increases in vehicle speeds on the residential roads off the main through route.

5.18 The TAA at Section 10 includes an analysis of recorded injury accidents within the study area with the following summaries:

Summary

10.40 Based on the accident record data, there has been no pattern in accidents identified and therefore there is not considered to be any underlying road layout deficiencies. Furthermore, it can therefore be concluded that the addition of the development traffic would not lead to a server or significant impact on local road safety.

Summary

10.88 Based on the accident record data for the past five-year study period, no pattern in accidents has been identified and therefore there is not considered to be any underlying road layout deficiencies.

10.89 Furthermore, it is also considered that there is nothing to suggest that the site access locations or locations for mitigation relate to an underlying highway safety issue.

10.90 It can therefore be concluded that the addition of the development traffic would not lead to a server or significant impact on local road safety.

5.19 However, my review of the TAA (Appendix A) noted that the results indicate a high proportion of vulnerable road user accidents in the overall accident figures, particularly in the residential area south of the development site. Despite the conclusions within the TAA there is no comparison to anticipated accident rates within the study area.

5.20 A detailed analysis of the accident data has been undertaken by the Council's Road Safety Team and is included as Appendix E. The data is based on pedestrian and cyclists as these are likely to be most impacted by potential changes to traffic levels.

5.21 It is clear that the study area has a higher number of pedestrian and cyclist casualties than the Borough as a whole and that the number of pedestrian and cyclist casualties aged under 16yrs is significantly higher. The data is replicated here:

	Study Area 5 years	**Whole Borough 5 years**
Total number of casualties	398	2984
Total number of pedestrians and cyclist casualties	121	725
Pedestrian and cyclist casualties as a percentage of all casualties	**30.4%** (24.6% higher than whole Borough at 24.4%)	**24.4%**
Total number of pedestrian and cyclist casualties aged under 16	38	171
Under 16 Pedestrian and cyclist casualties as a percentage of all casualties	**9.5%** (66.6% higher than whole Borough at 5.7%)	**5.7%**

5.22 The figures demonstrate that at current traffic volumes the proportion of pedestrian and cycle casualties within the study area is 24.6% higher than the figure for the whole Borough; despite the extensive traffic management and traffic calming in place throughout.

5.23 Additionally the figures in the table demonstrate that at current traffic volumes the proportion of pedestrian and cyclist casualties within the under 16 age group is significantly higher; 66.6% higher than the figure for the whole Borough.

5.24 Given the high number of pedestrian and cyclist casualties it is considered that an increase in traffic volume through the residential estate will raise safety concerns.

5.25 In view of the existing pedestrian and cyclist casualty data combined with the high peak hour vehicle increases highlighted at 5.6 above and the significant increases in AADT through the area highlighted at 5.10 to 5.13 above; both as a direct result of the proposed development, it is considered that the development will have an unacceptable impact on highway safety.

5.26 It is considered that the levels of traffic resulting from the development will cause the main routes of Sandy Lane West, Poplars Avenue and Capesthorne Road, which are unclassified roads, to change in nature and function and become a barrier to the community already served by those roads. This is contrary to the principles of the Council's *Design Guide for Residential and Industrial Estate Roads* and *Manual for Streets*.

5.27 It is further considered that the levels of traffic resulting from the development will have an unacceptable impact on highway safety and that the proposal is contrary to the aims and principles of the National Planning Policy Framework and Policies QE 6, QE 7, MP1, MP3 and MP7.

<u>Impact on Sandy Lane West arm of A49 Winwick Road/A574 Cromwell Avenue traffic signal junction.</u>

5.28 The impact on the junction of A49 Winwick Road/A574 Cromwell Avenue and in particular on the Sandy Lane West arm of the junction will be informed by the results of the VISSIM modelling which assesses the development impact on junctions along the A49 corridor including M62 J9 and the A49/A50 junction.

5.29 As highlighted at 2.3 to 2.7 above, at the time of writing (6th August 2020), the VISSIM base model is not approved by the Council and until such time as it is no confirmation can be given that it can be used to accurately represent typical conditions on the network. It is anticipated that the base modelling may be agreed in the near future.

5.30 The VISSIM forecast model is not yet approved by either the Council or Highways England. It may well be that the forecast model is approved in advance of the Inquiry but until it is agreed the specific impact of the development on Sandy Lane West cannot be determined.

5.31 The TAA addresses the impact on Sandy Lane West in paragraphs 9.7 to 9.11 and suggests that appropriate mitigation would be to "double-cycle" signal timings to provide alternate cycles to prioritise the main A49 flows and Sandy Lane West arm respectively; this effectively means that on one cycle of the

traffic signal operation priority would be given to movements along the A49 and on the next cycle priority would be given to movements from Sandy Lane West.

5.32 Paragraph 9.8 of the TAA highlights that the VISSIM modelling carried out indicated that the southbound movement on the A49 Winwick Road is very sensitive to any increase in delay with even tiny changes to signal timings quickly leading to queue lengths reaching back to, and beyond M62 J9. Yet paragraph 9.9 suggests that "double-cycling", which involves considerable changes to signal timings, addresses the issues at the junction; this is not considered logical.

5.33 Queues are already experienced along Sandy Lane West and it is not considered that "double-cycling" is a feasible solution. The Council has a Network Management Duty under the Traffic Management Act 2004 (which is outlined in detail in the Council's Fourth Local Transport Plan) and part of that is to facilitate the expeditious movement of traffic around the network by actively managing the existing road network. If "double-cycling" was considered to provide appropriate improvement it would have already been implemented. Priority has to be given to movements along the A49 corridor.

5.34 All of the traffic signals along the A49 are linked by a SCOOT (Split Cycle Optimisation Technique) system which is a real time adaptive traffic control system that automatically adjusts traffic signal settings to reduce delays. The traffic signals along the route are all synchronised to maximise efficiency and reduce delays. Any delay at the A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West junction impacts on the operation of M62 J9 leading to congestion, delay and safety issues.

5.35 It is worth highlighting that the efficiency of the Sandy Lane West arm of the signalised roundabout is not purely related to the amount of "green" time vehicles receive. The arm is constrained by the proximity to and movements to/from the junction of Winwick Road (residential estate road south of Sandy Lane West), the retail site immediately north of Sandy Lane West and the junction of Gough Avenue. Movements through these junctions affect the number and flow of vehicles reaching the A49 traffic signals meaning that enhanced "green" time would not serve a constant proportional flow.

5.36 Notwithstanding the fact that the VISSIM modelling is not yet approved paragraph 9.7 of the TAA highlights the fact that the largest impacts are seen on the Sandy Lane West and the A49 southbound approaches to the A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West signalised roundabout. It highlights that the queue along Sandy Lane West reaches 295m as a result of the development compared to 123m without the development; an increase in queuing of 172m (almost two and a half times the existing queue).

5.37 Paragraph 9.7 of the TAA further highlights that the 295m queue caused by the development reaches back to the roundabout junction of Cotswold Road/Cleveland Road/Sandy Lane/Sandy Lane West.

5.38 This means that, as a result of the development, the queue along Sandy Lane West will result in standing traffic affecting the operation of the Cotswold Road/Cleveland Road/Sandy Lane/Sandy Lane West roundabout. This standing traffic means that vehicles are unable to exit the roundabout towards Sandy Lane West thereby causing standing traffic on the circulatory carriageway of the roundabout.

5.39 This then means that vehicles on the approach arms of Sandy Lane West, Cotswold Road, Cleveland Road and Sandy Lane cannot progress through the roundabout causing further queuing to form along these roads.

5.40 The Cotswold Road/Cleveland Road/Sandy Lane/Sandy Lane West roundabout is a key junction for the entire transport network serving the existing residential area south of the development site; as it links the entire area with the A49 and the wider highway network. Any queuing or delay here will likely encourage motorists to find other unsuitable residential routes in order to avoid the junction. Given that Sandy Lane and Cotswold Road serve as bus routes for the entire area it will also impact on public transport access throughout the area, severely restricting bus movements.

5.41 It is worth highlighting that the queue along Sandy Lane West from the A49 will also affect the priority junctions of Chiltern Road and Harvey Court leading to difficulty for vehicles exiting and entering these junctions.

5.42 Until such time as the VISSIM modelling is agreed and the actual impacts on the junction of A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West are fully understood it is not known what form of mitigation scheme is required to alleviate queuing issues along Sandy Lane West.

5.43 At the previous Public Inquiry my evidence stated that in my opinion a mitigation scheme that addressed potential impact at the A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West signalised roundabout may be achievable within highway land and could therefore be secured by condition. Given the suggested results of the initial VISSIM modelling, which have yet to be agreed, it is clear that substantial improvement works are necessary at the A49 as a result of the development to improve movement from Sandy Lane West; not just an amendment to the timings of the traffic signals.

5.44 Having reassessed the operational issues of the A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West junction and the impacts caused by the development it is now my opinion that third party land outside of the highway boundary would likely be required to provide necessary improvements.

<u>Impact on A50 Orford Green/Hilden Road roundabout</u>

5.45 The TAA identifies an impact at this location as a result of the development but references discussions in January 2020 in relation to concern of potential changes to the existing layout (which incorporate safety and accessibility improvements) that may be detrimental to vulnerable road users. This was an

issue raised at the previous Inquiry where the then proposed mitigation scheme was not accepted by the Council as it involved the removal of existing measures that were implemented to reduce vehicle speeds, assist the movements of vulnerable road users and address potential safety issues. As can be seen from the accident analysis such measures are vital.

5.46 Notwithstanding the discussions in January 2020, the view was always taken that any decision on required mitigation would be led by the modelling results and it is considered that mitigation measures are required. Further discussions have been ongoing to identify appropriate mitigation, however, no scheme has been proposed or revised modelling results provided despite assurances from the appellant's team that such were forthcoming.

5.47 It is likely that a mitigation scheme can be delivered within the highway boundary and secured by condition. However, initial high level assessment by WSP on behalf of the Council considering potential solutions such physical amendments to the entry and exit arms of the existing roundabout; as per the scheme proposed by the appellant's team at the last Inquiry, or the replacement of the roundabout with Traffic Signal control, has indicated that these do not offer significant capacity improvements to mitigate the impacts of the proposed development. A mitigation scheme is therefore not straightforward.

5.48 The need to maintain good pedestrian and cyclist accessibility through the junction and the variation of AM and PM peak demand flows provide specific challenges and until a scheme is identified the precise nature of the required mitigation is unknown.

6.0 Conclusion

6.1 It is considered that the proposal will result in a severe impact on the Sandy Lane West arm of the A49 Winwick Road/A574 Cromwell Avenue/Sandy Lane West signalised roundabout; causing increased queuing that will subsequently affect the efficiency of the Sandy Lane West/Cotswold Road/Cleveland Road/Sandy Lane roundabout thereby affecting movements in and out of the entire residential area including those made by the well-utilised public transport services serving the area.

6.2 It is considered that by virtue of the increased traffic generated as a direct result of the proposed development the proposal will result in a severe impact on the surrounding highway network and an unacceptable impact on highway safety, particularly through the residential roads to the south of the site, and specifically along the Sandy Lane West, Poplars Avenue, Capesthorne Road route.

6.3 The proposed development will change the nature and function of the Sandy Lane West, Poplars Avenue, Capesthorne Road route so that its primary purpose becomes movement creating a barrier to the existing community. This

will subsequently alter the character of the area with potential impacts on public safety, residential amenity and the movement of vulnerable road users.

6.4 It is considered that the development should be refused as it results in an unacceptable impact on highway safety and the residual cumulative impacts on the transport network would be severe. This is contrary to Policies QE 6, QE 7, MP1, MP3 and MP7 of Warrington's Local Plan Core Strategy and the aims and principles of the National Planning Policy Framework.

Mike Taylor

Team Leader Transport Development Control

Warrington Borough Council

6th August 2020

WARRINGTON
Borough Council

Environment & Transport Directorate
Internal Memorandum

To: Martha Hughes

From: Mike Taylor
X4086

Date: 17/6/2020

Ref: 2016/28492

Application: Land at Peel Hall; Land South of M62 bounded by, Elm Road: Birch Avenue; Poplars Avenue; Newhaven Road; Windermere Avenue, Grasmere Avenue; Merewood Close, Osprey Close Lockerbie Close, Ballater Drive and Mill Lane, Poplars & Hulme, Warrington

APPEAL - Major Development: Outline planning application for a new mixed use neighbourhood comprising residential institution (residential care home - Use Class C2); up to 1200 dwelling houses and apartments (Use Class C3); local centre including food store up to 2000 square metres (Use Class A1); financial & professional services; restaurants and cafes; drinking establishments; hot food takeaways (Use Classes A2-A5 inclusive); units within Use Class D1 (non residential institution) of up to 600 sq m total with no single unit of more than 200 sq m; and family restaurant/ pub of up to 800 sq m (Use Classes A3/A4); employment uses (research; assembly and light manufacturing - Use Class B1); primary school; open space including sports pitches with ancillary facilities; means of access (including the demolition of 344; 346; 348; 458 and 460 Poplars Avenue) and supporting infrastructure. (All detailed matters other than access reserved for subsequent approval.) (Application is accompanied by an Environmental Impact Assessment).

Following the last Public Inquiry into the development at Peel Hall Highgate Transportation have produced additional information in the form of Transport Assessment Addendum (TAA) report. The following is a review of the TAA focussing on the main areas where either further additional information/clarification is required and where specific issues of disagreement are raised.

Modelling

The strategic modelling to identify the links and junctions impacted by traffic generated by the development has now been undertaken using the Council's multi-modal transport model (WMMTM16) which covers the whole of the Borough and beyond. Work has been carried out to ensure that the portion of the model representing the specific Peel Hall Study Area has been calibrated and validated in line with Department for Transport (DfT) guidance.

It is considered that the Peel Hall WMMTM16 SATURN model accurately represents conditions within the study area and that the outputs are appropriate for further more detailed modelling to assess specific junction operation and assist in understanding the development impact.

It is also considered that the junctions identified within the TAA for further detailed modelling following the use of the Peel Hall WMMTM16 SATURN model are appropriate and that the use of VISSIM is appropriate for assessing the impact of the development along the A49 Winwick Road corridor including M62 J9, A49/A574/Sandy Lane West and the A49/A50 junctions.

There are still some outstanding issues related to the VISSIM base and forecast models; these issues are detailed in *WSP Technical Note 2: A49 VISSIM Model Option Test Review* provided to Highgate Transportation on 20th April 2020 and it is understood that Highgate are re-running the VISSIM model to take account of these issues and of those raised by Highways England.

Further comment will be provided on the impacts and potential mitigation required along the A49 corridor following receipt of the latest VISSIM forecast model.

The individual capacity assessments result in a number of concerns in relation to key issues:

Myddleton Lane/Delph Lane – The TAA correctly identifies an impact at this location and suggests the implementation of traffic signals as a necessary mitigation measure. This route is currently well-utilised and concerns are regularly raised in respect of traffic volume, speeds and damage-only accidents due to the nature of the route, its limited width and the presence of sharp bends. A traffic management scheme to address these concerns is under consideration and given the additional traffic that will be using the route as a direct result of the development it is considered appropriate to seek a contribution towards the scheme.

A50/Hilden Road Roundabout – The TAA identifies an impact at this location as a result of the development but references discussions in January 2020 in relation to concern of potential changes to the existing layout (which incorporate safety and accessibility improvements) that may be detrimental to vulnerable road users. Notwithstanding this, the view was always taken that any decision on required mitigation would be led by the modelling results and it is considered that mitigation measures are required. Further discussions are required to identify appropriate mitigation.

A50/Hallfields Road – The TAA identifies an impact at this location and suggests the implementation of MOVA and to refresh road markings. The boundary constraints of this junction negate physical improvements and it is considered that the introduction of MOVA to improve the efficiency of the traffic signal operation at the junction will have a positive effect; the refreshing of road markings will highlight appropriate road space for all road users travelling through the junction and the mitigation measures are considered appropriate.

Public Transport

Discussions have been ongoing between the Council and the appellant in respect of required public transport provision to serve the site and it is considered that an appropriate level of public transport service can be provided. This will need to be secured via a S106 Agreement with the Council as Public Transport Authority.

Impact on Residential Area South of Development

It is clear from the results within the TAA that the proposed development has a significant impact on the residential roads south of the development site, however, the assessment of impact is based on reference to the now withdrawn DMRB document TA 79/99 *Traffic Capacity of Urban Roads*, the current DfT document *Manual for Streets* and the dated CIHT document *Transport in the Urban Environment*.

The methodology used is not considered appropriate as it takes no detailed account of heavy on-street parking that occurs in the area, the number of frontage accesses to dwellings, pedestrian and cycle movements or of the extensive traffic calming measures in the area. All of these issues influence movement along a route. The traffic flows referenced suggest that the area is already at capacity.

The most appropriate means to accurately reflect link capacity and movement throughout the area would be via a micro-simulation model.

Mitigation is proposed in the form of removal of on-street parking by providing verge parking areas and an extension to the existing 20mph speed limit on Poplars Avenue as well as a range of traffic calming/traffic management measures. Notwithstanding the potential benefits of the measures proposed they also raise specific issues; for example, the verge parking is intended to free up road space to improve traffic movement but there is the concern that verge parking may mask pedestrian movement which when combined with likely higher speeds has safety implications. In respect of the extension of the 20mph limit this currently highlights the main residential route for movements through the estate and assists through the provision of terminal signing in the effectiveness of the existing 20mph routes; as a mitigation measure the 20mph extension is not supported.

It is considered that the additional vehicle movements imposed on the residential area to the south as a direct result of the development will change their nature and function so that the primary purpose is movement and this will subsequently alter the character of the area with potential impacts on public safety, residential amenity and the movement of vulnerable road users.

Accident Analysis

It is noted that the accident results indicate a high proportion of vulnerable road user accidents in the overall accident figures, particularly in the residential area south of the development site. Despite the conclusions within the TAA there is no comparison to anticipated accident rates within the study area.

Proposed Mitigation

Whilst there is no expectation that a development should mitigate existing issues it is reasonable and expected that any proposal should not exacerbate an existing issue and that where capacity issues are already experienced the development should mitigate its own impact. A pragmatic approach is taken where small over capacity increases to one arm are outweighed by larger decreases to other congested arms or where there is no readily acceptable solution.

Issues of potential mitigation along the A49 corridor and associated junctions will be dependent on the results of the latest VISSIM forecast model and further comment will be provided then.

A Travel Plan and bus mitigation strategy are appropriate and can be secured via condition and Section 106 Agreement respectively.

The proposed mitigation measures at A50 Orford Green/Hallfields Road, A49 Newton Road/Golborne Road and Myddleton Lane/Delph Lane are considered appropriate and can be secured by condition.

It is considered that the development will have a detrimental impact along Delph Lane with an increase in movement along an existing rural route and a contribution is sought towards traffic management measures to influence vehicle movement and speeds.

It is considered that the development will have a detrimental impact on the junction of A50 Orford Green/Hilden Road roundabout and further discussions are required to identify appropriate mitigation.

Whilst mitigation proposals to the residential roads south of the development are not considered appropriate to mitigate the overall impacts of the development they will be required should planning consent be granted; the exception being the extension of the 20mph speed limit.

Phasing of Development

The Council's *Design Guide Residential and Industrial Estate Roads* provides the requirements in respect of number of dwellings that can be served from an individual access point and also the practical issue in respect of the adoption process in that the Council will not adopt roads until all future construction served from them has been completed. The phasing of development will be influenced by this

The Council's Design Guide provides guidance on the number of dwellings served from a cul-de-sac and when a secondary emergency access point is needed dependent on the type and nature of the road involved.

Whilst these issues can be controlled by condition and are subject to reserved matters the current overall control of land allows for individual plots to be inter-connected the longer term delivery of the development site can cause issues as individual plots are sold off and developers construct dwellings to maximise their individual site potential.

The phasing also needs to consider the requirement to deliver mitigation measures and who may be responsible for key off-site infrastructure delivery.

The parcel sizes indicated on the Indicative Phasing Plan are considered appropriate but the build-out within suggests a pepper-pot approach of smaller plots within the parcels throughout the site minimising impact on individual access points. The actual phasing is more likely to be in keeping with the build-out of the larger parcels indicated and this may place more strain on one particular part of the existing highway network at an earlier point than that modelled; meaning that the 600 dwelling trigger proposed for some of the mitigation works is not reflective of actual impact.

It is considered that the mitigation trigger needs to be revisited particularly given that the modelling undertaken identifies that the junctions of Myddleton Lane/Delph Lane and A50 Orford Green/Hilden Road already experience capacity issues.

Alternative Access Strategy

Access Strategy Option B (forming a new all-movements junction at A49 Winwick Road/Poplars Avenue) formed part of the appellant's original appeal submission with the conclusion that the development could be accommodated without impacting on the existing road network and specifically without impacting on the operation of M62 J9.

It is clear that the latest appropriate modelling highlights particular issues with this access strategy, as was always suggested by the Council, but no further work has been undertaken to assess whether alternative junction designs or development access strategies (e.g. allowing only part of the development to be accessed here) suggest that a solution is feasible. No work has ever been undertaken on other alternative access strategies.

As highlighted above it is considered that the impact on the residential roads south of the development is such that alternative access strategies must be explored.

Summary

Further information is still awaited in the form of updated VISSIM modelling reports but the conclusions of the Transport Assessment Addendum are not accepted. It is considered that the current proposal will have a severe impact on the existing transport network that has not been adequately mitigated.

Furthermore it is considered that the additional vehicle movements imposed on the residential area to the south as a direct result of the development will change their nature and function so that the primary purpose is movement and this will subsequently alter the character of the area with potential impacts on public safety, residential amenity and the movement of vulnerable road users. It is considered that these effects cannot adequately be mitigated.

The Highway Authority maintain an objection to the proposal.

Mike Taylor
Team Leader – Transport Development Control

PEEL HALL VISSIM MODELLING TIMELINE

Date	Event
17 January 2020	WSP commissioned to review base year Vissim Model and LMVR Report produced by Modelling Group (MG) Original MG documents are dated 10th January.
24 January 2020	WSP provide Technical Note 1 response on base model The review summary: • A49 Winwick Road/ A574 Cromwell Avenue/ Sandy Lane West Junction, A49 Winwick Road/ A50, Junction, along with M62 J9 are the main exits for the vehicles generated by the proposed new developments. Compared with Google Traffic, the queues might be under estimated in the base model. • Car demand on Northway (Link #227) seems to be doubled.
26 March 2020	Highgate and Modelling Group (MG) provide the second iteration of the base model and first iteration of forecast models of Option A and B.
06th April 2020	WSP attend skype meeting between Highways England, Highgate and Modelling Group to discuss the March submission. WSP provide overview of our findings from the model review to this meeting.
08th April 2020	WSP provide Technical Note 2 in response to the March submission by Highgate and MG. The review summary: • Traffic performance on local roads joining the A49 corridor including Sandy Lane and A50 in the base year model are critical for the assessment of future scenarios. Therefore, we would like WBC to confirm if the queues and delays are realistic from the videos provided. • The traffic demand used for Vissim inputs are not consistent with the LinSig model outputs and therefore SATURN model hourly flows. There appears to be an issue with the methodology applied for converting flow from SATURN to Vissim and we would suggest this is reviewed and any new methodology submitted for agreement in advance of further work.

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	• The new vehicle class development cars are using different behaviour parameters from background cars in some scenarios and the parameters are not consistent in Do Something AM and PM scenarios. The model animation also indicates the behaviour of the development cars appears to be abnormal. • The methodology for the growth of the motorway mainline traffic needs to be confirmed. • The error messages indicate significant suppressed demand and on further investigation we would suggest the methodology for matrix estimation needs to be revised. • Consider reducing the proposed Poplars Avenue junction in Option B to two stages to improve performance.
18th May 2020	MG and Highgate provide a third iteration of the base model and traffic forecasting methodology for review.
27th May 2020	Updated / revised information provided by Highgate and MG
16th June 2020	Forecast scenario matrix provided by Highgate and MG
19th June 2020	WSP produce Technical Note 5 response to the May modelling submission. The review summary: • Significant disparity in journey time on Sandy Lane West and A50 Long Lane compared to observed data from basemap for November 18 in both AM and PM periods. • Long queues on Sandy Lane West particularly in the PM and latent demand and long queues on A50 Long Lane. We would suggest journey time routes are incorporated to validate this area of the model based on April 2019 journey time data to be consistent with the A49 counts and existing journey time data in the model. • There appear to have been significant changes to demand in some areas of the model with limited explanation for this. • Reporting of queues for comparison should be done in shorter time segments and for the model peak and cool down period.
23rd June 2020	MG provide a Technical Note response to WSP Technical Note 5. No further response is required at this stage.
30th June 2020	First iteration of the forecasting traffic flow spreadsheet provided by Highgate and MG for review.
08th July 2020	WSP provide Technical Note 6 in response to the forecasting methodology and spreadsheet:

	The review summary: 1. Please could a clear definition of each of the scenarios in the tab "Matrix_Diffs_AM" Column V row 4-12 be provided by MG including what developments they contain, the SATURN model runs they have originated from etc? 2. Please could you clarify if it is intended to use SATURN scenarios individually to produce forecast flow scenarios or in combination with each other. Plus set out the scenarios to be built up and tested. 3. The matrix Diffs Tab includes formatting to highlight absolute changes greater than 80 and percentage changes greater than 300%. However there is no narrative around if MG consider the changes to the matrix to be reasonable and if they are proposing to apply absolute difference, percentage difference or a mixture of both to produce matrices for forecast scenarios in Vissim. Please could this be clarified? 4. Tabs 'AM_forVissim' and 'PM_forVissim' are the final inputs and routings to be used in Vissim as stated in the 'Usage' tab. Please clarify the usage of cell 'V4'. For example, if scenario 'Demand_2032 DS_Full_Dev_' has been selected in tab 'Matrix_Diffs_AM', which approach should be applied, absolute or percentage? 5. The spreadsheet provided contains a lot of calculations and reviewing all of this in detail would simply be impractical. We have therefore reviewed the resulting changes to the inputs to Vissim between each scenario. These changes are highlighted in the comparison tabs of the attached spreadsheet. It is apparent that in some cases there are significant changes in flow (more than a 20 fold increase) between 2018 and 2032. We have looked into some of these in detail to understand the cause. Taking one example: Row 144 on the tab "Comparison_2032_DS_Abs_2018" of the attached. This indicates that in two time periods (4,800 and 7,800 seconds) LGV flows show a substantial increase, between multiples of 19 and 21 times the 2018 flow. We have worked back through the calculations and identified an apparent error in the index match formula in cell BB352. For the LGV vehicle class the formula appears to reference the proportional split for time period 4,200 not 4,800. The same issue appears to be present on BG352. Once corrected the large increase is removed. Finding issues during spot checking with a spreadsheet with so many calculations is concerning because it is simple impossible to check every step in turn. We would recommend MG review the sheet and consider the inclusion of some form a of self checking to assist in identifying issues with the calculation themselves. 6. MG has provided the Vissim model but no forecast scenarios in 'Scenario Management'. It is not clear which modifications are used for each individual scenario.

10th July 2020	Teams meeting between Highgate, MG, Highways England (Atkins) and WSP. Responses are discussed and MG agree to provide more / updated methodology information and spreadsheet.
20th July 2020	Highgate and MG provide forth iteration of the base model and second iteration of the forecast traffic flow spreadsheet.
23-31st July 2020	WSP request three times via e-mail further information on the base modelling, forecasting and timescales for completing the forecast traffic flows. Including offering to attend a meeting to discuss. No response received from Highgate or MG on the file e-mail of 31st July.
06 August 2020 (19:15)	Highgate and MG provide Vissim package including future year modelling and forecasting spreadsheets.

Warrington Borough Council

PEEL HALL

Scope of Modelling

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FEBRUARY 2019

PUBLIC

Warrington Borough Council

PEEL HALL

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TYPE OF DOCUMENT (VERSION) PUBLIC

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WSP

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Draft			
Date	28/02/2019			
Prepared by	Colin Wright			
Signature				
Checked by	Gary Rowland			
Signature				
Authorised by	Gary Rowland			
Signature				
Project number	70040878			
Report number	70040878_SoM			
File reference				

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FIGURES

APPENDICES

1 INTRODUCTION

1.1.1. WSP have been commissioned by Warrington Borough Council (WBC) to detail the scope of modelling required for a new planning application for a major residential development at Peel Hall, Warrington.

1.1.2. This follows on from a previous planning application on this site which was refused planning permission by the Secretary of State following a Public Inquiry held in April and July 2018. Early indications are that the scale of development will be similar to that previously submitted and as such the scope of modelling is based upon a development containing 1,200 new residential units.

1.1.3. The purpose of modelling the development is to identify links and junctions on the immediate, and parts of the wider, Warrington road network that are impacted by the traffic generated by the development as it is built out and on its completion. The outputs of the modelling should be used to assess specific junction operation and assist in designing appropriate mitigation measures.

2 SCOPE OF MODELLING

2.1 EXISTING MODELS

2.1.1. A revised multi modal transport model (the WMMTM16) has been developed for WBC using the services of Aecom transport consultancy. The model was developed at a cost of over £1m and included a significant amount of primary data collection, including mobile phone data to inform the origin-destination movements.

2.1.2. The WMMTM16 has been developed using SATURN modelling software, version 11.3.12U, for highway assignment modelling aspects integrated with EMME 4.29 software for public transport and demand modelling aspects. The following models have been produced:

- A Base Year Highway Model for 2016; and
- A Forecasting Model for the time horizons of 2026 and 2036 based on the aspirational land use pattern set out in the council's Preferred Development Option for the Local Plan (as published for consultation in July 2017) and committed transport schemes.
- A Forecasting model was also produced to support the Outline Business Case for the Western Link Local Major application to the DfT in December 2017. In accordance to DfT WebTag guidance this was constrained to NTEM growth factors and was based on the existing SHLAA for Warrington and committed transport scheme.

2.1.3. It is worth noting that the PDO has been subject to some changes since July 2017. A final version of the Forecast Model is currently in development to reflect the land use policies to support the Draft Local Plan. This is expected in March 2019).

2.1.4. One of the primary reasons for developing this transport model is to investigate the impact of particular developments (as requested by developers or their consultants), on the Warrington Transport network. As such any modelling work for Peel Hall should make use of the WMMTM16 at a first level of impact assessment. It will then be necessary to employ other stand alone junction modelling or micro-simulation packages to further understand and mitigate the development impact. However, the traffic flow inputs to these models should come from the WMMTM16.

2.2 BASE MODEL CHECKING

2.2.1. The WWMTM16 has a simulation area that covers the entirety of the Borough area, with an extensive buffer network beyond that. An extensive data collection exercise was undertaken to inform the model development and assist in calibrating and validating the model. Overall the model produces calibration and validation results that are in line with that advised by the DfT.

2.2.2. However, these are taken from across the entire network. If a particular area of Warrington is examined it may be the case that there has been limited data collection in this area to inform the WMMTM16, or that the local calibration and validation performance is below that of the overall model.

2.2.3. As such a check should be undertaken on the highway model performance in the area around the Peel Hall development site. Things to look at and identify would be:

- Number, location and calibration / validation performance of count sites;
- Number, location and validation performance of journey routes;
- Turning movements at key junctions in the vicinity of the site; and

- Coding of key junctions in the vicinity of the site.

2.2.4. The WMMTM16 is calibrated only to link flows, not turning movements. Therefore the turning movements at key junctions need to be compared to observed data. Similarly link flows on key links that do not have any calibration or validation counts sites, the modelled flows should be noted and compared to other existing count data that has not been used for the WMMTM16 development. It may be necessary to commission some additional traffic surveys to allow these comparisons to take place.

2.2.5. The location of key junctions and links should be agreed with WBC.

2.2.6. Any sub-optimal performances or coding errors should be identified and reported to WBC.

2.2.7. Any decision to make alteration to the current base model to alter network coding or matrices will require approval by WBC. If the base year model is to be altered then any forecasting must be carried from the altered base, and as such the existing forecast WMMTM16 models cannot be used.

2.3 FORECASTING

2.3.1. Based upon the previous work, and given the location of the site, it is assumed that forecasting will be undertaken in the highway model only. This is proportionate as there is no major public transport intervention proposed as part of the development.

FORECAST YEARS

2.3.2. Aside from the 2022 opening year two forecast years are required to represent the half and full build out of the development and associated infrastructure. The modelled years will be 2027 and 2032. Two years are required as this provides an indication of when any mitigation may be required.

2.3.3. The HE should also be consulted as their requirements for modelled years may be different to that of WBC.

TIME PERIODS

2.3.4. Forecast models should be prepared for AM peak, inter peak and PM peak periods. The inter peak period will assist in determining AADT flow.

DEMAND FORECASTING

2.3.5. The Do Minimum demand should be forecast to NTEM levels with all committed developments modelled explicitly. If the committed development forecast exceeds NTEM then the higher growth level should be used.

2.3.6. Of the existing forecast models, the model that closely represents this forecast demand requirement is the one used for the Western Link business case submission. If the forecast years are different to the Western Link models it would be appropriate to apply linear growth to the demand. The current level of committed development should be checked against what was assumed for the Western Link demand forecasts.

2.3.7. These models can only be used if no changes are required to the base year model. If changes are made to the base year demand then demand forecasting must be carried out independently.

2.3.8. Trip generation has previously been agreed. These trips should be added on to the Do Minimum forecasts to form the Do Something demand.

2.3.9. The development trip distribution should reflect the agreed distribution produced from WMMTM16 for the Public Inquiry.

2.3.10. Additional trip generation and trip distribution must be undertaken for the IP time period.

2.3.11. Goods vehicle forecasting should be based on the latest Road Traffic Forecast information.

NETWORK FORECASTING

2.3.12. The Do Minimum network should contain all committed developments. Of the existing forecast models, the model that closely represents this forecast network requirement is the one used for the Western Link business case submission. The current committed highway schemes should be checked against what was assumed for the Western Link network forecasts.

2.3.13. A cordon of the forecast network is appropriate to improve modelling efficiency and target the local impacts only. The same extent as previously used would be acceptable to WBC.

2.3.14. The HE should also be consulted as their requirements for modelled network may be different to that of WBC

2.3.15. The Do Something model networks should consider:

- Option A - access junctions proposed by Highgate;
- Option B1 – through route linking A49 and Mill Lane; and
- Option B2 – split site with two access points, one on A49, one on Mill Lane.
- Option C – single vehicular access at Mill Lane with internal loop road.

2.3.16. These options are proposed as feasible options without prejudice and do not indicate a preference or an agreed solution.

2.3.17. An indicative sketch of Option C is included as an appendix to this document.

2.4 IMPACT ASSESSMENT

2.4.1. The use of WMMTM16 as a way of identifying junctions where further assessment is required is appropriate. All junctions with a Volume to Capacity ratio (V/C) on any approach arm of above 85% in any scenario, within the agreed area of influence of Peel Hall, should be examined further. A V/C of 85% would be considered to be the threshold at which minor fluctuations in flow or vehicle type can be accommodated without the junction reaching capacity.

2.4.2. Given the limitations of SATURN as a tool for junction modelling this stand alone analysis should be done using the following software packages with SATURN flows providing the input:

- Junctions 9 PICADY – for priority junctions;
- Junctions 9 ARCADY – for mini and standard roundabouts;
- Linsig – for signalised junctions and signalised roundabouts.

2.4.3. For Option B (i.e. an option with a new access onto the A49) the A49 should be modelled in VISSIM microsimulation software to understand how blocking back at junctions would impact on the performance of the network. Junctions to include would be:

- A49 Newton Road/Winwick Link Road/Winwick Park Avenue
- A49 / Delph Lane;
- A49 / M62;
- A49 / Peel Hall Access;

- A49 / Sandy Lane West / Cromwell Avenue;
- A49 / Junction 9 retail park; and
- A49 / A50.

2.4.4. When considering mitigation measures at junctions, the mitigation should seek to accommodate not just the flow in the Do Something scenario but the Do Something flow plus any displaced flow. That is the difference between Do Minimum and Do Something flows on a junction arm may be less than the number of development trips on the arm. This indicates that a number of Do Minimum trips have diverted due to the development traffic. The mitigation should seek to accommodate the Do Minimum flows plus the development flows.

Appendix A

OPTION C INDICATIVE SKETCH

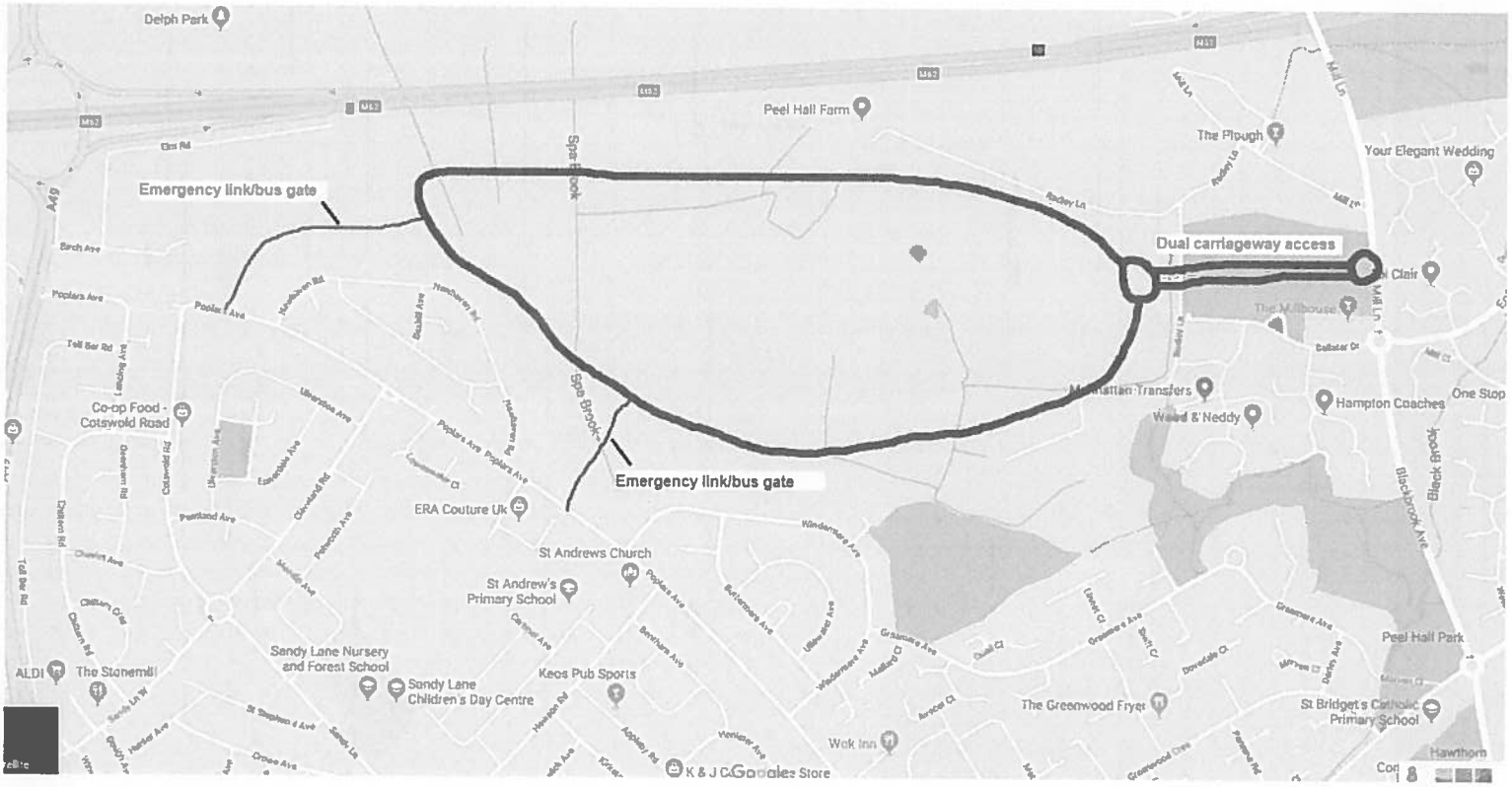
Delph Park
Peel Hall Farm
The Plough
Your Elegant Wedding
Emergency link/bus gate
Spa Brook
Dual carriageway access
Emergency link/bus gate
Co-op Food - Cotswold Road
Manhattan Transfers
Hampton Coaches
Wood & Neddy
ERA Couture Uk
St Andrews Church
St Andrew's Primary School
Sandy Lane Nursery and Forest School
Sandy Lane Children's Day Centre
Keos Pub Sports
ALDI
The Stonemill
The Greenwood Fryer
St Bridget's Catholic Primary School
Peel Hall Park
Wok Inn
K & J Goodales Store
Hawthorn

Table A12.4.1 Traffic Data

Link Number	Name	2019 Base Year/Verification				2022 Opening Year Without Development				2022 Opening Year With Development			
		AADT	LDV	HDV	%HDV	AADT	LGV	HDV	%HDV	AADT	LDV	HDV	%HDV
1 -	A49 Northbound (JunctionNINE Retail Park - Hawleys Lane)	21,417	20,417	1,000	4.7%	22,278	21,295	983	4.4%	22,744	21,759	985	4.3%
2 -	A49 Northbound (M62 - Birch Avenue)	22,019	21,003	1,016	4.6%	22,485	21,490	995	4.4%	22,843	21,848	995	4.4%
3 -	A49 Northbound (north of M62)	23,198	22,242	956	4.1%	24,102	23,165	937	3.9%	24,433	23,496	937	3.8%
4 -	A49 Northbound (parallel to Brendon Avenue - Sandy Lane West)	22,019	21,003	1,016	4.6%	22,485	21,490	995	4.4%	22,843	21,848	995	4.4%
5 -	A49 Northbound (Sandy Lane West - JunctionNINE Retail Park)	22,009	21,005	1,004	4.6%	22,806	21,822	984	4.3%	23,271	22,285	986	4.2%
6 -	A49 South of A50 (Northbound)	16,851	16,109	743	4.4%	17,563	16,835	728	4.1%	18,328	17,600	728	4.0%
7 -	A49 South of A50 (Southbound)	20,631	19,960	671	3.3%	21,522	20,863	659	3.1%	22,540	21,880	659	2.9%
8 -	A49 Southbound (JunctionNINE Retail Park - Hawleys Lane)	24,199	23,446	753	3.1%	23,960	23,238	722	3.0%	24,032	23,309	723	3.0%
9 -	A49 Southbound (M62 - Birch Avenue)	23,742	22,853	890	3.7%	24,466	23,594	872	3.6%	24,727	23,809	918	3.7%
10 -	A49 Southbound (north of M62)	22,025	21,150	875	4.0%	22,540	21,683	858	3.8%	22,838	21,981	858	3.8%
11 -	A49 Southbound (parallel to Brendon Avenue - Sandy Lane West)	23,742	22,853	890	3.7%	24,466	23,594	872	3.6%	24,727	23,809	918	3.7%
12 -	A49 Southbound (Sandy Lane West - JunctionNINE Retail Park)	23,813	23,068	745	3.1%	23,551	22,836	715	3.0%	23,620	22,904	716	3.0%
13 -	A49 Winwick Link Road	21,767	20,610	1,157	5.3%	22,672	21,539	1,134	5.0%	22,829	21,695	1,134	5.0%
14 -	A50 Long Lane	12,162	11,879	283	2.3%	12,379	12,107	271	2.2%	12,505	12,234	271	2.2%
15 -	A50 Orford Green	11,111	10,826	286	2.6%	11,106	10,824	282	2.5%	12,081	11,806	275	2.3%
16 -	Birch Avenue (Site entrance)	194	192	2	0.9%	203	201	2	0.8%	380	378	2	0.4%
17 -	Blackbrook Avenue (Ballater Dr - Capesthorne Rd)	6,573	6,547	26	0.4%	7,039	7,013	26	0.4%	11,707	11,681	25	0.2%
18 -	Blackbrook Avenue (Capesthorne Rd - Insall Rd)	6,543	6,502	41	0.6%	6,909	6,869	41	0.6%	9,794	9,750	44	0.4%

19 -	Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	6,632	6,443	188	2.8%	7,306	7,120	187	2.6%	10,581	10,394	187	1.8%
20 -	Capesthorne Road (Poplars Ave towards School Lane/A50)	2,369	2,314	54	2.3%	2,463	2,415	48	2.0%	3,002	2,950	52	1.7%
21 -	Capesthorne Road (Poplars Ave - parallel to Humber Road)	4,516	4,438	78	1.7%	4,992	4,914	78	1.6%	7,966	7,887	79	1.0%
22 -	Cleveland Road	3,011	3,002	10	0.3%	3,810	3,800	10	0.3%	4,922	4,912	10	0.2%
23 -	Cotswold Road	398	260	138	34.7%	417	281	136	32.6%	933	797	136	14.6%
24 -	Cromwell Avenue	29,672	29,036	637	2.1%	30,445	29,823	623	2.0%	31,601	30,932	669	2.1%
25 -	Delph Lane (Mill Lane - Myddleton Lane)	6,730	6,697	33	0.5%	7,169	7,137	32	0.5%	7,966	7,935	32	0.4%
26 -	Elm Road	601	579	22	3.7%	624	601	23	3.7%	624	601	23	3.7%
27 -	Fisher Avenue	1,506	1,433	73	4.8%	1,820	1,748	72	3.9%	2,610	2,539	72	2.7%
28 -	Golbourne Road	10,044	9,915	129	1.3%	10,168	10,040	127	1.3%	10,528	10,402	126	1.2%
29 -	Grasmere Avenue (Site entrance)	0	0	0	0.0%	0	0	0	0.0%	165	165	0	0.0%
30 -	Grasmere Avenue	1,500	1,500	0	0.0%	1,558	1,558	0	0.0%	1,599	1,599	0	0.0%
31 -	Greenwood Crescent (Darley Ave to Grasmere Ave)	1,486	1,387	99	6.7%	1,683	1,585	98	5.8%	2,002	1,904	98	4.9%
32 -	Greenwood Crescent (Grasmere Ave to Meteor Cres)	2,855	2,754	101	3.5%	3,116	3,016	99	3.2%	3,282	3,186	96	2.9%
33 -	Hawleys Lane	13,922	13,168	753	5.4%	14,405	13,670	734	5.1%	14,700	13,966	734	5.0%
34 -	Howson Road	428	428	0	0.0%	452	452	0	0.0%	892	892	0	0.0%
35 -	M62 Eastbound J8 - J9	53,947	50,703	3,244	6.0%	56,160	52,982	3,178	5.7%	56,390	53,212	3,178	5.6%
36 -	M62 Eastbound J9 - J10 (east of Mill Lane)	30,386	28,222	2,164	7.1%	31,592	29,472	2,120	6.7%	31,705	29,585	2,120	6.7%
37 -	M62 Eastbound J9 - J10 (west of Mill Lane)	50,098	46,692	3,407	6.8%	52,136	48,799	3,337	6.4%	52,333	48,996	3,337	6.4%
38 -	M62 Junction 9 Eastbound Entry Slip	7,532	6,925	607	8.1%	7,845	7,251	594	7.6%	8,042	7,448	594	7.4%
39 -	M62 Junction 9 Eastbound Off Slip	11,380	10,936	444	3.9%	11,869	11,434	435	3.7%	12,099	11,664	435	3.6%
40 -	M62 Junction 9 Westbound Entry Slip	8,927	8,481	446	5.0%	9,318	8,881	437	4.7%	9,530	9,093	437	4.6%
41 -	M62 Junction 9 Westbound Off Slip	7,055	6,209	846	12.0%	7,331	6,502	829	11.3%	7,424	6,595	829	11.2%
42 -	M62 Westbound J8 - J9	60,539	54,823	5,716	9.4%	62,970	57,371	5,599	8.9%	63,182	57,583	5,599	8.9%
43 -	M62 Westbound J9 - J10 (east of Mill Lane)	58,666	52,551	6,115	10.4%	60,983	54,992	5,991	9.8%	61,075	55,084	5,991	9.8%

44 -	M62 Westbound J9 - J10 (west of Mill Lane)	58,666	52,551	6,115	10.4%	60,983	54,992	5,991	9.8%	61,075	55,084	5,991	9.8%
45 -	Mill Lane (Balleter Dr - new roundabout)	7,259	7,224	35	0.5%	7,734	7,699	35	0.4%	13,350	13,317	34	0.3%
46 -	Mill Lane (Delph Lane - underneath the M62)	6,730	6,697	33	0.5%	7,169	7,137	32	0.5%	7,966	7,935	32	0.4%
47 -	Mill Lane (Mill Lane turn off - new roundabout)	6,702	6,669	33	0.5%	7,140	7,107	32	0.5%	8,646	8,615	31	0.4%
48 -	Mill Lane (Site entrance)	219	215	4	1.9%	224	220	4	1.9%	743	739	4	0.6%
49 -	Mill Lane/Blackbrook Avenue (New roundabout) circulating flows	0	0	0	0.0%	0	0	0	0.0%	5,412	5,412	0	0.0%
50 -	Myddleton Lane (Delph Lane to underneath A49)	10,026	9,969	57	0.6%	10,456	10,400	56	0.5%	11,009	10,954	55	0.5%
51 -	Myddleton Lane (Waterworks Lane to Golbourne Road)	8,794	8,731	62	0.7%	9,140	9,079	61	0.7%	9,628	9,568	61	0.6%
52 -	Newton Road	10,167	9,803	364	3.6%	10,600	10,243	357	3.4%	10,726	10,369	357	3.3%
53 -	Northway NB	1,501	1,485	16	1.1%	1,913	1,891	22	1.1%	1,818	1,796	21	1.2%
54 -	Northway SB	1,239	1,156	84	6.7%	1,299	1,217	82	6.3%	1,716	1,634	82	4.8%
55 -	Poplars Avenue - East of (Central) Site entrance	3,760	3,568	192	5.1%	4,602	4,412	189	4.1%	7,481	7,292	189	2.5%
56 -	Poplars Avenue - West of (Central) Site entrance	3,152	2,968	184	5.8%	3,957	3,776	181	4.6%	5,845	5,664	181	3.1%
57 -	Poplars Avenue (Central) (Site entrance)	0	0	0	0.0%	0	0	0	0.0%	1,913	1,913	0	0.0%
58 -	Poplars Avenue (Greenwood Cres - Capesthorne Road)	8,853	8,584	269	3.0%	9,937	9,666	270	2.7%	13,464	13,194	270	2.0%
59 -	Poplars Avenue (south of Capesthorne Road)	7,193	6,986	207	2.9%	7,922	7,703	219	2.8%	9,318	9,102	215	2.3%
60 -	Poplars Avenue (West) (Site entrance)	0	0	0	0.0%	0	0	0	0.0%	1,285	1,285	0	0.0%
61 -	Radley Lane	116	112	4	3.6%	125	120	4	3.3%	125	120	4	3.3%
62 -	Sandy Lane	4,249	4,014	235	5.5%	4,571	4,334	238	5.2%	5,289	5,051	238	4.5%
63 -	Sandy Lane West	6,354	6,283	71	1.1%	7,454	7,378	76	1.0%	9,493	9,415	77	0.8%
64 -	Statham Avenue	3,901	3,794	106	2.7%	4,225	4,115	110	2.6%	5,426	5,316	110	2.0%
69 -	M62/A49 J9 Roundabout - 85821 to 85824 (>)	8,872	8,468	404	4.6%	9,351	8,956	396	4.2%	9,518	9,122	396	4.2%

Peel Hall

Analysis of Collisions

The data used in this analysis covered the latest 5 year period to 30th September 2019 which was the latest data set available at the time and that used for the purpose of the Traffic Assessment.

The data covered a wide area which encompasses the residential area and roads serving the proposed development at Peel Hall.

For comparison purposes, this data was compared to the latest available set of data for the whole Borough covering the 5 year period to December 2019.

The analysis was based on the pedestrian and cyclist user groups.

	Study Area 5 years	**Whole Borough 5 years**
Total number of casualties	398	2984
Total number of pedestrians and cyclist casualties	121	725
Pedestrian and cyclist casualties as a percentage of all casualties	**30.4%** (24.6% higher than whole Borough at 24.4%)	**24.4%**
Total number of pedestrian and cyclist casualties aged under 16	38	171
Under 16 Pedestrian and cyclist casualties as a percentage of all casualties	**9.5%** (66.6% higher than whole Borough at 5.7%)	**5.7%**

The figures in the table above demonstrate that at current traffic volumes, the proportion of casualties in the study area in the pedestrian and cyclist group is 24.6% higher than the figure for the whole Borough.

Additionally the figures in the table above demonstrate that at current traffic volumes within the under 16 age group for pedestrians and cyclists in particular, the proportion of casualties in the study area is 66.6% higher than the figure for the whole Borough.

Looking at the Sandy Lane West/Poplar Avenue/Capesthorne Road corridor for the latest 5 years data to 31st May 2020 and comparing this to the A50 corridor between the A49 and Hilden Road:-

The extent of the Study Area used for the analysis

In addition to the aforementioned study, looking at the Sandy Lane West/Poplar Avenue/Capesthorne Road corridor for the latest 5 years data to 31st May 2020 and comparing this to the A50 corridor between the A49 and Hilden Road:-

Total number of casualties on the Sandy Lane West/Poplar Avenue/Capesthorne Road corridor = 29

25 slightly injured
4 seriously injured

10 of these casualties involved pedestrians or cyclists across all age groups, 1 casualty under age 16

Total number of casualties on the A50 corridor = 43

37 slightly injured
6 seriously injured

14 of these casualties involved pedestrians or cyclists across all age groups, 4 casualties under age 16