

Highgate*Transportation*

Proposed Development at Peel Hall,
Warrington

Transport Assessment Addendum
(HTp/1901/TA/Addendum)

March 2020

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1.0 INTRODUCTION

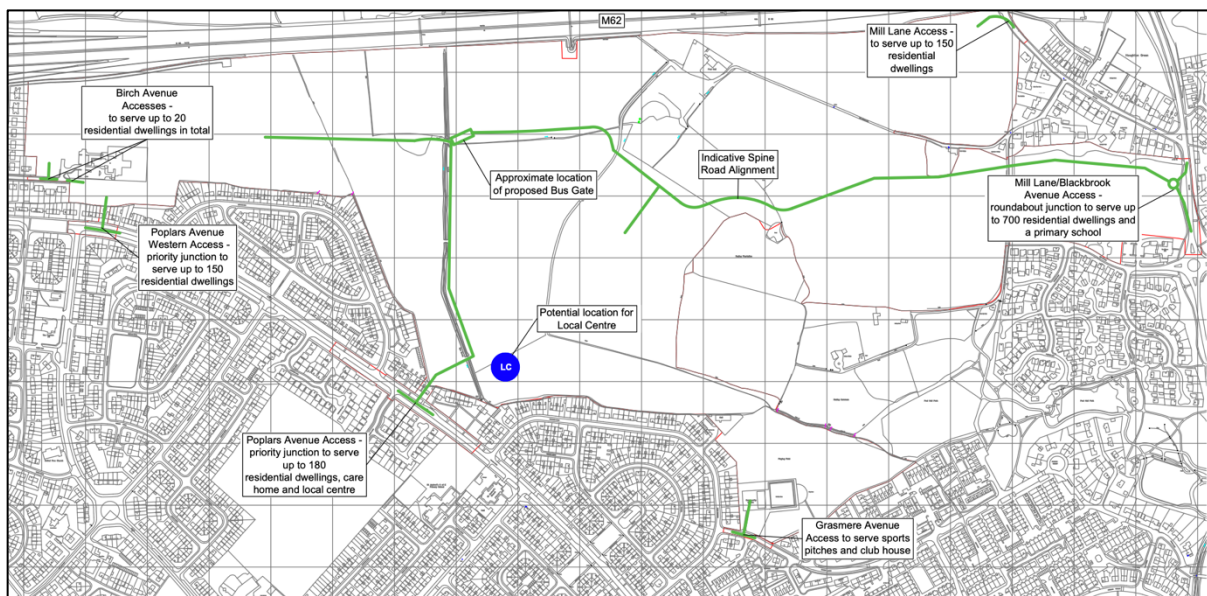
- 1.1 Highgate Transportation Limited (HTp) have been commissioned by Satnam Millennium Limited to provide this Addendum to the previously submitted Transport Assessment (HTp/1107/01/A dated January 2018), in support of the proposals for a new residential neighbourhood on land at Peel Hall to be considered at a forthcoming reopened public inquiry (LPA reference: 2016/28492, PINS reference: APP/M0655/W/17/3178530). The study area is shown in the plan contained at **Appendix 1** for reference.
- 1.2 The original inquiry was held on 23-27 April; 2-4 May; and 9-11 July 2018. The Inspector's Report (**Appendix 2**) dated 1 October 2018 recommended that the appeal should be dismissed on the basis of the following considerations:
- i. The effect of the proposed development on the safety and efficiency of the local and strategic highway network*
 - ii. The effect of the proposed development on the character of the area*
 - iii. The effect of the proposed development on local air quality*
 - iv. Deliverability*
- 1.3 The decision of the Secretary of State (contained in his letter dated 20 December 2018) in which the appeal was dismissed, and planning permission refused, was quashed on 8 October 2019 by an Order of the High Court.
- 1.4 The principle of development on this site is agreed between the Appellant and the Council. Peel Hall has consistently been regarded as an appropriate, sustainable and acceptable location for future housing development, with 1,200 dwellings tested for on Peel Hall within the modelling that informed Warrington's emerging Local Plan. Furthermore, the Warrington SHLAA (March 2020) considers the site to be Suitable, Available and Achievable, leading to the allocation of the site for housing similar to this application scheme in the Proposed Submission Local Plan.
- 1.5 This report is an assessment of the detailed transport impact of the application proposals.

Development Profile

- 1.6 The access strategy for the Peel Hall site is the creation of a non-through route with the development served off five separate access points including a new roundabout from Mill Lane in the east. This has historically been referred to as Access Strategy Option A.
- 1.7 Since early 2019 it has been agreed between the appellant and the Council to remove the employment land use from the development site. As such, the distribution of development onto Poplar's Avenue has reduced with the 330 dwellings proposed now split between the proposed central and western (former employment access) access junctions as 180 and 150 dwellings respectively.

- 1.8 As such, the development profile is now confirmed as:
- 1,200 dwellings
 - Care home (up to 100 bedrooms)
 - Local centre – A1 food store up to 2,000sqm, A1-A5 up to 600sqm (no single unit larger than 200sqm), A3/A4 family pub/restaurant up to 800sqm
 - Community sports pitches
 - Primary School (assumed two-form entry for the purpose of the transport assessment work, but only one-form entry currently required by the council)
- 1.9 The implications of the revised development profile are set out in the Highgate Transportation Scoping Note (1901/TN/03 dated July 2018) contained in **Appendix 3**. This confirms the agreed trip rates and discounting.
- 1.10 An extract of the illustrative internal site layout is provided as **Figure 1.1** and the proposed site access junctions are as per the original inquiry (drawings contained in **Appendix 4**) and can be summarised as:
- New roundabout junction with Blackbrook Avenue/Mill Lane
 - Mill Lane continuation
 - Poplars Avenue (central) ghost right turn lane
 - Poplars Avenue (west) priority junction (no longer serving employment but now 150 residential dwellings)
 - Birch Avenue (an extension and a new priority junction)
 - Improvements to existing access from Grasmere Avenue

Figure 1.1 - Illustrative Internal Road Layout and Site Access Locations



- 1.11 It is noted from the Inspector's Report {IR13.23 and 13.25} that reference was made to the reduced available width of Birch Avenue as a result of on-street parking. It can be seen from the Birch Avenue access arrangement (**Appendix 4**) that off-street parking for 15 cars is proposed on the appellants land. These parking spaces are for existing residents and were provided in response to comments previously received about ensuring that access to the appeal site did not impact on-street parking. Furthermore, such measures to relocate on-street parking to reduce congestion caused by parking on-street on Birch Avenue is considered to present a benefit and an improvement to the free flow of vehicle movements and cyclists.
- 1.12 The guiding principles in the development of the scheme have been to encourage the use of sustainable modes of transport and to contain trips within the development as far as possible. This is achieved by the mixed-use nature of the development and high level of permeability and connectivity throughout the site.
- 1.13 As part of the development proposals, mitigation measures have been identified in the form of public transport contributions to enable a bus service to be provided that will connect the site with the town centre in the south and Birchwood to the east, as well as a range of engineering measures. The development will also be supported by extensive Travel Plan measures.
- 1.14 It is considered that there will be planning conditions to secure a Travel Plan for the site (based on the previously submitted framework document ref: HTp/1107/FTP/01) and appropriate parking standards, as well as electric vehicle charging and accessible parking for those with disabilities.

Impact Assessment

- 1.15 The transport analysis in support of the planning application began in 2016, when the area wide modelling information available at that time led to a bespoke transport model covering northern Warrington being created (the Peel Hall SATURN model) in agreement with the Council and Highways England. Once run, this model would identify those junctions where stand-alone modelling would be carried out to see if mitigation measures were required.
- 1.16 In the immediate run up to the inquiry the Council's area wide Warrington SATURN model (Warrington Multi Modal Traffic Model 2016 - WMMTM16), created to assess the impact of the Local Plan and new infrastructure schemes, was starting to become available (2018). This large strategic model is based on newer origin destination data (2016) than was available for use within the original Peel Hall model (which was based on the origin designation data taken from the Council's VISUM supplemented with 2014 and 2016 traffic surveys, as agreed with the Council and Highways England prior to the beginning of the modelling process).
- 1.17 The Inspector in his report {IR13.10 to IR13.13} confirmed that the substantive dispute at the inquiry was whether the use of the Peel Hall model, which was based on what was by then considered to be superseded origin and destination data, rather than the use of the WMMTM16 model, mattered.

- 1.18 The Inspector's concern was that the use of WMMTM16 could sufficiently change the assignment of development trips to the network that would require different junctions to be assessed and alter the mitigation measures proposed {IR13.35}, including the area to the immediate south of the appeal site {IR13.49}.
- 1.19 However, sensitivity tests were carried out at that time to compare the origin destination information from WMMTM16 against that within the Peel Hall model. The origin destination data from WMMTM16 was extracted by WSP on behalf of the Council and supplied to HTp to compare with the Origin-Destination data in the Peel Hall model.
- 1.20 The results of this exercise can be summarised as follows:
- i. Overall matrix totals match
 - ii. Two-way external movements at the boundaries show reasonable similarities
 - iii. The different Origin-Destination data does not result in a significant difference in actual trips and where differences arise these can be explained and/or result in immaterial differences in trip levels through key links and junction within the study area
- 1.21 This review also confirmed that the list of junctions identified by the Peel Hall model for stand-alone modelling remained appropriate and it was accepted {IR13.35} that any mitigation needed at affected junctions could in principle be accommodated within the bounds of existing highway land. It was concluded by AECOM at this time (early 2018) that the two origin destination datasets were comparable i.e. the Peel Hall SATURN model presented at the previous inquiry was reliable.
- 1.22 WSP also ran a similar comparison exercise between the two origin destination datasets and concluded that there is very little difference in actual trip levels between the two distributions and furthermore, that the WBC network is flexible with multiple routes and driver adaptation on any given day. This was confirmed at the inquiry during the cross examination of the Council's technical expert witness, Mr Crossley.
- 1.23 Following the original appeal decision, the appellant commissioned the use of WMMTM16 (in agreement with the Council) to assess the impact of the appeal scheme. This process has taken around 12 months as Peel Hall is the first developer-led instruction for using the Council's model. A significant amount of transport analysis has been carried out and the follow-on work is contained in this Transport Assessment Addendum.
- 1.24 It should be noted that to allow for the two years since the last assessment, the various assessment years have been adjusted to 2022 (year of opening), 2027 (mid-year) and 2032 (ten years after).
- 1.25 Following receipt of the WMMTM16 Peel Hall outputs in December 2019, a Technical Note was provided to the Council (1901/TN/14) Development Impact Summary, dated January 2020 (contained at **Appendix 5**).

- 1.26 This was discussed at a progress meeting with the Council on 14 January 2020, and from this a list of junctions were agreed to be taken forward for further modelling. An agreed note of the meeting is contained at **Appendix 6** and from this it should be noted that the highway officer's approach to mitigation would not be solely based on accommodating development traffic, but would be based on safety and local measures elsewhere that would support and enhance sustainable travel and capacity.
- 1.27 The list of junctions agreed with the Council to be taken forward for more detailed modelling following a review of the Peel Hall WMMTM16 data, aside from the site access junctions, are:
- i. Golborne Road/Myddleton Lane
 - ii. Delph Lane/Myddleton Lane
 - iii. A49 M62 Junction 9 roundabout*
 - iv. A50/Hilden Road roundabout and A50/Poplars Avenue
 - v. A50/Hallfields Road
 - vi. A49/A50/Hawleys Lane crossroads*
 - vii. A49/JunctionNINE Retail Park*
 - viii. Blackbrook Avenue roundabout with Enfield Park Road and Ballater Drive
 - ix. Blackbrook Avenue roundabout with Enfield Park Road and Capesthorpe Road
 - x. Poplars Avenue roundabout with Capesthorpe Road
 - xi. Cromwell Avenue/Calver Road linked with Sandy Lane West/A49 roundabout*
- 1.28 It should be noted that junctions listed in **paragraph 1.27** does not mean that impact in this location is significant, just that it is a list agreed for further investigation based on location and proximity to other junctions.
- 1.29 It was also agreed that going forward, those junctions on the A49 corridor(*) would be modelled in VISSIM rather than as stand-alone models, in order to assess knock-on impacts of queuing and delay.

Transport Assessment Addendum

- 1.30 As set out at **paragraph 1.1**, this report forms an Addendum to the Transport Assessment that supported the appeal scheme and as such does not seek to duplicate the contents of that report, but to add a detailed account of the follow-on modelling. The sections of this Addendum report can be summarised as follows:

Section 2.0 – Policy (updated NPPF and information contained in draft Local Plan)

Section 3.0 – A description of the proposed bus measures

Section 4.0 – Walking and Cycling Audit (WCHAR)

Section 5.0 – WMMTM16

Section 6.0 – Future Year Scenarios (including flow diagrams)

Section 7.0 – A summary of the site access junction capacity assessments

Section 8.0 – A summary of the off-site junction capacity assessments

Section 9.0 – A summary of the VISSIM assessments

Section 10.0 – A review of the recent accident records

Section 11.0 – This section sets out the proposed mitigation works

Section 12.0 – This section summarises testing for Access Strategy Option B

Section 13.0 – Phasing of Development and Construction Traffic

Section 14.0 – A summary of the highway-related Section 106 heads of terms

Mitigation

1.31 The proposed mitigation can be summarised as:

- i. A full and comprehensive Travel Plan supported by extensive travel plan measures, to enhance and support sustainable travel of future residents
- ii. An effective bus mitigation strategy based on extending two existing bus services into the site, in the east and south
- iii. A50 Orford Green/Poplars Avenue – development impact at this junction was previously addressed through proposed engineering measures to increase the circulatory to two lanes (as built). However, this capacity restriction was part of a highway safety scheme and as such, instead of mitigation measures at the junction it is proposed to provide a contribution towards traffic calming measures within the area to the immediate south of the development site (see point iv)
- iv. Provision of funding for traffic calming measures on the area to the immediate south of the Peel Hall development such as Poplars Avenue, Cleveland Road, Statham Avenue, Howson Road and Capesthorne Road. This is likely to involve, for example, replacement of measures along Capesthorne Road with more appropriate traffic calming and additional traffic calming and traffic management measures in the wider area
- v. Provide funding for an extended 20mph speed limit through Poplars Avenue and Capesthorne Road
- vi. Provision of uncontrolled dropped kerb pedestrian crossing points with tactile paving across arms of all roads intersecting with Poplars Avenue and upgrade existing locations for pedestrians to cross Poplars Avenue to promote attractive pedestrian routes, enhance highway safety and assist pedestrians with crossing movements
- vii. Provision of cycle-friendly measures on Poplars Avenue such as painting cycle markings on carriageway near junctions to warn motorists of cycles. Also, the provision of cycle warning signing where suitable poles for doing so at key areas such as the approaches to the Poplars Avenue/Capesthorne Road roundabout
- viii. Provision of funding for parking spaces to be created within the highway verges at locations along Poplars Avenue and Capesthorne Road

- ix. A49/A50/Hawleys Lane signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- x. A50/Hallfields Road signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- xi. A49 Newton Road/Golbourne Road – provide a scheme of widening and a ghost right turn lane if not provided by other committed schemes
- xii. Golbourne Road/Myddleton Lane - proposed provision of Keep Clear markings on the southbound A49 arm across the Golbourne Road arm to improve junction performance by removing obstructions to the A46 right-turning movement
- xiii. Myddleton Lane/Delph Lane – proposed signal junction
- xiv. Birch Ave/A49 – proposed provision of Keep Clear markings on the A49 nearside southbound lane across the Birch Avenue junction

Summary

- 1.32 This Transport Assessment Addendum concludes that the appeal proposals should not be resisted on highways grounds as there is not an unacceptable impact on highway safety created by the proposals and the residual cumulative impacts on the road network are not severe. The proposals therefore comply with NPPF paragraph 109.

2.0 POLICY

- 2.1 This section of the Addendum is provided to take account of the updated National Planning Policy Framework (February 2019) and Warrington's Emerging Local Plan 2017-2037 (March 2019) and Fourth Local Transport Plan (December 2019) since the 2018 inquiry.

National Policy

- 2.2 The National Planning Policy Framework (NPPF) introduced March 2012 and most recently updated in February 2019 sets out the Government's guidance on planning policy. The primary aim of the NPPF is to promote sustainable development and sets out that local authorities should presume in favour of sustainable development.

- 2.3 Paragraph 109 sets out that:

"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe".

- 2.4 Paragraph 110 sets out that applications for development should:

- a) *"give priority first for pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
- b) *address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- c) *create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
- d) *allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
- e) *be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*

- 2.5 Paragraph 111 sets out that:

"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."

- 2.6 While the proposed development will generate a significant amount of movement, it will be supported by a comprehensive travel plan, bus measures that are of high quality and are well thought-out (supported by Warrington's Own Buses), access junction arrangements that incorporate pedestrian and cycle movements, additional pedestrian access measures and an overarching consideration of movement by other users. This is in accordance with national policy.
- 2.7 It will be demonstrated that the local and wider highway network can accommodate this development in highway safety and capacity terms, even though the existing network can be congested at peak times and sensitive to variations in traffic flows.

Warrington Draft Local Plan

- 2.8 The Local Plan is provided to set out the framework for the delivery of 18,900 new homes and support the ongoing economic growth of Warrington through the provision of employment land.
- 2.9 It is noted that the Warrington Local Plan allocates the Peel Hall site as developable for a scheme similar to this appeal proposal and that the Local Plan modelling tested for 1,200 houses on the development site in the WMMTM16 using Access Strategy Option A for loading of development trips.
- 2.10 The pertinent points in the draft Local Plan for this Addendum Transport Assessment are contained in Objective W4 (Section 7), which can be summarised as:

"To provide new infrastructure and services to support Warrington's growth; address congestion; promote safer and more sustainable travel; and encourage active and healthy lifestyles."

i. Policy INF1 – Sustainable Travel and Transport

Improve walking and cycling facilities (active travel) including:

- High priority to the needs and safety of pedestrians and cyclists in new developments that integrate with the existing network
- Enhance and develop integrated well-designed, continuous, attractive and safe networks such as Public Rights of Way and the Greenway Network
- Give priority to routes linking residential areas with employment, transport interchanges and hubs, schools and other local services and facilities
- Secure improvements to public transport infrastructure and services and ensure development has access to highway quality and regular public transport services

ii. Policy INF5 – Delivering Infrastructure

- Development will be required to provide or contribute towards the provision of the infrastructure to support it

- Where new infrastructure is needed to support development, the infrastructure must be operational no later than the appropriate phase of development for which it is needed
- Obligations will be negotiated on a site-by-site basis and will only be sought where these are:
 - Necessary to make the development acceptable in planning terms
 - Directly related to the development
 - Fairly and reasonably related in scale and kind to the development

2.11 In terms of the Peel Hall development, it has been important to enhance connectivity and reduce development impact and provide pedestrian, cycle and public transport measures to encourage sustainable travel.

Warrington Fourth Local Transport Plan (December 2019)

2.12 The Fourth Local Transport Plan was adopted in December 2019 and sets out how the Council will maintain and improve transport and travel in Warrington.

2.13 The Council's vision is to transform the way that people travel around the borough by increasing the journeys made by walking, cycling and public transport, in order to reduce problems arising from congestion and high car dependency. The vision is supported by a programme of major transport investments such as infrastructure improvements i.e. the Western Link (new bridge across the Manchester Ship Canal).

2.14 The nine key challenges set out in the Local Transport Plan are:

- i. Addressing car dependency and congestion*
- ii. Growing bus patronage*
- iii. Continuing the upward trend in rail usage*
- iv. Improving the walking and cycling offer*
- v. Improving air quality and reducing transport noise*
- vi. Addressing transport inequalities*
- vii. Making Warrington a more disabled friendly place*
- viii. Supporting growth*
- ix. Reflecting public and stakeholder views*

2.15 The Council's aim is to, "*increase the usage of sustainable modes of travel*", through the following 11 objectives:

- i. Provide people with a choice about how they travel for each journey*
- ii. Encourage a culture change that reduces the need for people to travel by car*
- iii. Improve access to the town centre for all sustainable modes*
- iv. Develop a resilient and efficient transport network that supports the town's growth*
- v. Reduce traffic congestion*
- vi. Reduce both exhaust and non-exhaust emissions from transport*
- vii. Maintain and improve all transport infrastructure*
- viii. Encourage healthier lifestyles by increasing day-to-day activity*
- ix. day activity*

- x. Improve safety for all highway users*
 - xi. Make Warrington a more disabled friendly place*
- 2.16 In terms of the Peel Hall development, it is clear that providing a development that offers modal choice and connectivity such as walking to nearby facilities; cycling to the town centre or Birchwood Park for work or leisure and cycling to secondary/further education establishments; to reduce impact on the highway network and local air quality.
- 2.17 Furthermore, the development can provide a Greenway Network link through the site, further enhancing sustainable travel for work/education or leisure to the wider network.
- 2.18 Additionally, the site benefits from proximity to a number of bus services on the local network and the bus operator has confirmed in a Memorandum of Understanding (**Appendix 7**) that they will extend their route 25 into the site from the east and also their highway quality service route 20 into the site from the south, linking the site to the town centre in the south and Birchwood in the east. This will provide modal choice from early occupation and is considered to be beneficial in reducing car travel from the outset.

3.0 PROPOSED BUS MEASURES

- 3.1 Since the 2018 inquiry, discussions have been held between the appellant and the Managing Director at Warrington's Own Buses to develop the previously proposed bus measures to support the Peel Hall development.
- 3.2 A Memorandum of Understanding was drawn up and signed (June 2019) and this is contained in **Appendix 7**, complete with draft timetables, and can be summarised as:
- i. Warrington's Own Buses intend to divert their existing 25 and 20 routes into the proposed Peel Hall development, subject to funding agreement between the parties.
 - ii. It is assumed that the development will be carried out in phases, with service 25 first (i.e. the easterly part of the site from Blackbrook Avenue), followed by service 20 from the south (i.e. the southern and western areas of the site from Poplars Avenue).
 - iii. Service 25 is assumed to operate Monday to Saturday every 30 minutes.
 - iv. Service 20 is assumed to operate up to every 10 minutes Monday to Friday and every 12-13 minutes on Saturday, with a reduced service on Sundays.
 - v. If for some reason the routes listed above are not operational at the time of the development, Warrington's Own Buses are willing to provide costs for the funding of an entirely new service.
- 3.3 It is agreed that these services will offer Peel Hall residents regular bus connections for Warrington Town Centre, Warrington Central Railway Station and Bus Interchange/Shopping Centre, Birchwood Rail Station and Business Park/Shopping, Warrington Vale Royal & Priestley Colleges as well as the Orford Jubilee Hub and Winwick Road retail parks.

Costings

- 3.4 On the basis of the above, the costs will be £106,000 per annum for service 25 and £117,000 per annum for service 20 provided on a gap-funding basis. These costings are based on 2019 prices and it is agreed that they are index linked.
- 3.5 On the basis of developer funding, it is agreed that these services would run for a period of five years (with a three-year break clause for Warrington's Own Buses).
- 3.6 Since this time, HTP have also contacted the Council's public transport team to discuss with their Specialist Transport Services Manager, during a conference call held 6 February 2020, how the site could be best served by public transport. Following discussion between the Council and Warrington's Own Buses, it was agreed that this would be along the lines set out in the Memorandum of Understanding, with the obligation secured by means of a Section 106 Agreement with the Council.

4.0 WALKING AND CYCLING AUDIT

- 4.1 A review of the existing pedestrian and cycle facilities on Poplars Avenue and the immediate area has been carried out to determine the availability of existing infrastructure for non-motorised users and barriers to movements, further to the comments of the original Inspector regarding impact on the area to the south and that the, *"level of increase in flow of traffic along them (roads in the area to the south of the development), whether technically appropriate or not, would, inevitably, make them less pleasant routes along which to walk (or cycle) and, indeed to drive. They would be busier, noisier and potentially, more difficult to cross for certain residents"* {IR13.50}.
- 4.2 However, it is also noted at IR.13.48 that, *"most vehicles do not appear to travel at speed, streets are straightforward to cross, and it is a pleasant area through which to walk (although this situation changes on some streets during the peak hours)"*.
- 4.3 A site visit was carried out to assess the existing infrastructure for pedestrians and cyclists within the Poplars Avenue area to the south of the Peel Hall site.

Pedestrian Movements – Poplars Avenue

- 4.4 From the audit it was evident that improving crossing points over the minor arms of side roads from Poplars Avenue would be beneficial; such as the ensuring all junctions have dropped kerb crossings with tactile paving to facilitate pedestrian movements across the side road(s). There were also observed to be a number of locations (circa 20) along Poplars Avenue where a paved area from the footway leads to the carriageway edge, but with no dropped kerb (tactile paving) or in some instances even a landing point in the verge on the opposite side of Poplars Avenue. This should be improved and rationalised where crossing points do not align, to ensure the area is permeable for all pedestrians.
- 4.5 It was also noted during the site visit that vehicles park on the footpath around the shops off the Capesthorpe Road/Poplars Avenue roundabout, obstructing pedestrian movements and resulting in pedestrians entering the carriageway. This is an existing situation that will require better enforcement to prevent illegal parking.
- 4.6 It was also observed that Poplars Avenue would benefit from additional uncontrolled dropped kerb pedestrian crossing near bus stops such as near the junction with the A50; in the mid-section of Poplars Avenue between Capesthorpe Road and the A50; immediately south of the roundabout junction with Capesthorpe Road; south of Howson Road; and north of Newhaven Road.

Cycle Movements – Poplars Avenue

- 4.7 Poplars Avenue is considered to be a relatively attractive road to cycle, but that the presence of on-street parking results in cyclists having to change from primary (middle of lane) to secondary (near kerb) position within Poplars Avenue frequently to avoid the parked cars and oncoming vehicles. This is one of the most dangerous situations for cyclists as it is when approaching motorists will often try and squeeze past especially when there's an oncoming vehicle. As such, the provision of formalised parking in the highway verges will improve free flow of vehicles and increase the attractiveness and safety of cycle travel.
- 4.8 The improved provision of dropped kerbs for pedestrian crossings in this area will also allow cyclists to safely enter and exit the carriageway near their homes/destinations.
- 4.9 Another measure that is considered beneficial would be to provide painted cycle markings on the carriageway, especially near junctions, to warn motorists of cycles. Furthermore, consideration could be given to the provision of a cycle warning sign on the approach to, for example, the roundabout junction with Capesthorpe Road, to increase driver awareness of cycles. This would be best on existing highway infrastructure to ensure sign clutter is kept to a minimum.
- 4.10 Such measures would be planned with verge parking works (see **Sections 6.0** and **11.0**) and could form a planning condition.

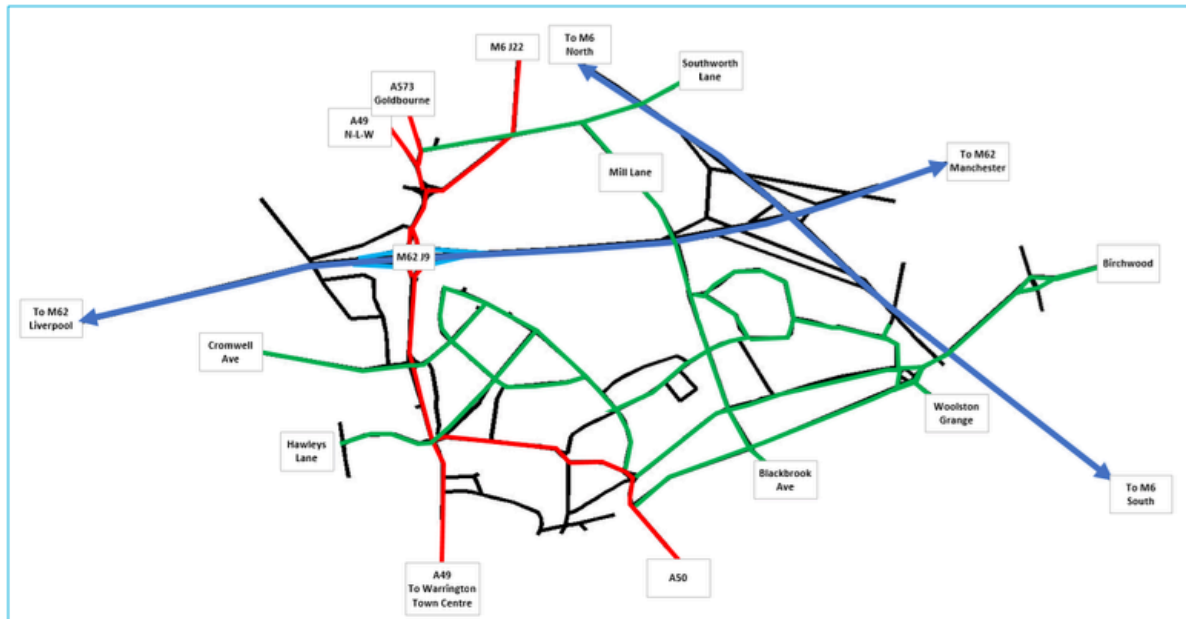
Summary

- 4.11 It can be noted that the previous Inspector had concerns regarding the potential presence of the proposed employment land use and the resultant increase (albeit limited) in the number of HGVs on the streets to the south of the Peel Hall site {IR13.52}. This concern is now considered to be somewhat negated through the removal of the employment land use in agreement with the Council (see **paragraph 1.7**). However, the improvements described above will benefit existing and future residents in improving safety and attractiveness of non-car modes, also boosting health and well-being.

5.0 WMMTM16

- 5.1 When the transport analysis to support the planning application began in 2016, the modelling information available at that time led to a bespoke transport model covering the study area around the Peel Hall development being created (the Peel Hall SATURN model) in agreement with the Council and Highways England. This formed the basis of the appellant's evidence to the 2018 inquiry.
- 5.2 In the immediate run up to the inquiry the Council's area wide Warrington SATURN model (WMMTM16), created to assess the impact of Local Plan and new infrastructure schemes, was starting to become available (2018). This large strategic model is based on newer Origin-Destination data (2016) than was available for use within the Peel Hall model (which was based on the Origin-Designation data taken from the Council's VISUM with 2014 and 2016 traffic surveys, as agreed with the Council and Highways England prior to the beginning of the modelling process).
- 5.3 Following the 2018 inquiry, the appellant has commissioned the use of WMMTM16 following the approach suggested by the Council, to assess the impact of the appeal scheme going forward.
- 5.4 A proforma and scoping report for the use of WMMTM16 was submitted to the Council in April 2019 who in-turn provided this to their consultants, AECOM. The proforma (**Appendix 8**) was agreed in June 2019 with the Council and AECOM, including the highway officer and their consultant following a meeting on 17 June 2019.
- 5.5 The Peel Hall Use of WMMTM16 Scoping Note, TN/03, is provided at **Appendix 3**. This set out the confirmed development profile, access arrangements, access strategies, vehicle trips and discounting, years of assessment, study area, growth and the following committed developments explicitly modelled:
- J9 Retail Park (2016/29425)
 - Parkside Phase 1 (2018/32247)
 - Birchwood Park (2015/26044)
- 5.6 The modelling roles stages diagram was provided by the Council on 4 April 2019 setting out the roles of all parties and stages of the modelling process for the use of WMMTM16. This is provided in **Appendix 9** for reference.
- 5.7 During the time from June to September 2019, a number of conference calls were held between the Council, their highway consultant (WSP), AECOM, and HTp, and working versions of a Peel Hall Farm SATURN Modelling Technical Note were provided by AECOM throughout this time during the development of the base model. The final note (provided February 2020) is provided at **Appendix 10** for reference.
- 5.8 The cordoned SATURN network for the Peel Hall WMMTM16 is illustrated in **Figure 5.1** (see also report at **Appendix 10**).

Figure 5.1 – Peel Hall WMTM16 Study Area



- 5.9 The Peel Hall WMMTM16 SATURN output data was provided in excel spreadsheets and as SATURN screen shots by AECOM in September 2019. This was reviewed by HTP and also the Council's highway consultants WSP. There was an iterative period from September to December 2019, between the Council's AECOM team and HTP, with regard to data queries and model re-runs.
- 5.10 The data was completed in December 2019, with final adjustments to add in 'lost' bus movements finalised in January 2020.
- 5.11 The base flow diagrams for 2018 (AM and PM – previously required for Air Quality assessment) are contained in **Appendix 11**. These are Do Minimum (no development) only.

6.0 FUTURE YEAR SCENARIOS

Years of Assessment

- 6.1 The agreed future years of assessment with WMMTM16 are as follows (all AM and PM peak hours):

2022 - Opening Year

- a. Do Minimum (no development)
- b. Do Something (120 dwellings – to test actual impact forecast for year of opening)
- c. Do Something (full development - to define mitigation for HE)

2027 - Five Years After Opening

- a. Do Minimum (no development)
- b. Do Something (part development - 600 dwellings and Local Centre)

2032 - 10 years After Opening

- a. Do Minimum (no development)
- b. Do Something (full development)

- 6.2 These flow diagrams are provided at **Appendix 12**. Development-only flow diagrams are contained at **Appendix 13**.

- 6.3 Further to the Scoping Note (TN/03) provided in **Appendix 3**, it was later agreed that no interpeak modelling was required as the Air Quality and Noise AADT24 and AADT18 factors (respectively) were to be taken from traffic surveys (see TN/08 and correspondence contained in **Appendix 14**).

- 6.4 Further to a review of the Do Minimum compared to Do Something, a Technical Note was provided to the Council (TN/14) Development Impact Summary, dated January 2020 (contained at **Appendix 5**). This was discussed at a progress meeting with the Council on 14 January, and from this a list of junctions were agreed to be taken forward for further modelling (see **Appendix 6**).

- 6.5 The list of junctions agreed with the Council to be taken forward for more detailed modelling following a review of the Peel Hall WMMTM16 data, aside from the site access junctions, are:

- i. Golborne Road/Myddleton Lane
- ii. Delph Lane/Myddleton Lane
- iii. A49 M62 Junction 9 roundabout*
- iv. A50/Hilden Road roundabout and A50/Poplars Avenue
- v. A50/Hallfields Road
- vi. A49/A50/Hawleys Lane crossroads*
- vii. A49/JunctionNINE Retail Park*
- viii. Blackbrook Avenue roundabout with Enfield Park Road and Ballater Drive
- ix. Blackbrook Avenue roundabout with Enfield Park Road and Capesthorne Road

- x. Poplars Avenue roundabout with Capesthorpe Road
 - xi. Cromwell Avenue/Calver Road linked with Sandy Lane West/A49 roundabout*
- 6.6 It was also agreed that going forward, those junctions on the A49 corridor(*) would be modelled in VISSIM rather than as stand-alone models, in order to assess knock-on impacts of queuing and delay.

Growth

- 6.7 It is predicted in Table 3 of TN/03 (**Appendix 3**) that the level of vehicular trips generated at each access when fully operational will result in the order of 1,027 vehicle movements per hour external to the site during the weekday morning peak hour and 1,055 vehicle movements during the weekday evening peak hour.
- 6.8 Without the development there will be fluctuations and increases in traffic flow generally on the highway network due to natural growth even where the network is constrained; leading to increases in journey times. The flow diagrams indicate that background growth forecast will be notable over the years from 2022 to 2032 across the network i.e. from 2,179/2,029 AM/PM respectively at A49/Golbourne Road in 2022 to 2,433/2325 in 2032; from 1,492/1,460 at Myddleton Lane/Delph Lane in 2022 to 1,677/1,611 in 2032; from 3,906/4,478 at A49/A50 in 2022 to 4,227/4,840 in 2032 (all Do Minimum scenarios).
- 6.9 The link capacity of roads within the immediate area is reviewed in Technical Note TN/09 (**Appendix 15**). It can be seen from the flow information that the busier links in the area to the south of the development account for use by general through-traffic. As set out by the previous Inspector [IR 13.49] peak hour flows along streets within the area to the south will increase significantly.
- 6.10 A comparison between the 2022 and 2032 Do Minimum SATURN results demonstrate that the flows through the area to the south are expected to substantially increase over time on the majority of links even without Peel Hall development traffic i.e. 200vph (or around 2,000vpd). These increases through the area to the south is rat-running traffic rather than local traffic.
- 6.11 The development will give rise to an overall increase in travel demand in the local area increasing traffic flows on the surrounding highway network and pushing the rat-running traffic elsewhere. The development will also increase demand for public transport and the use of walking and cycling routes.
- 6.12 The data set out in TN/09 sets out that the development traffic impact is very low on Sandy Lane and Howson Road (one vehicle every two to four minutes), with low increases of around 40 to 80vph on Cotswold Road, Greenwood Crescent and Statham Avenue i.e. around one vehicle per minute.
- 6.13 Larger impacts are forecast on Cleveland Road and Sandy Lane West of around 110 to 170vph (two to three vehicles per minute) increasing to between 250 to 450vph Capesthorpe Road and Poplars Avenue i.e. four to seven vehicles per minute.

- 6.14 It can be noted from the previous Inspector's report [IR 13.53] that, "*change does not necessarily equate to harm*".
- 6.15 As set out in TN/09, the recommendation within Manual for Streets is that the capacity threshold figure is at least 10,000vpd (for a 30mph road) and it can be seen that the AADT24 figures are generally below this guideline on all roads except for Sandy Lane West, Poplars Avenue and Capesthorpe Road, which form the main established through-traffic route. Therefore, from the Manual for Streets guidelines it is considered that the figures forecast are acceptable. Additionally, this 10,000vpd minimum threshold could increase with a reduction in speed limit.
- 6.16 TA 79/99 states in paragraph 3.6 that, "...effective parking restrictions can lead to higher flows" and it is considered that mitigation measures such as the provision of parking bays within the grass verges of these road links, to formalise what occurs at present and to create further off-street parking capacity to improve through-flow, will be beneficial (see HTP Technical Note TN/10 dated January 2020 - **Appendix 16**). Furthermore, the provision of developer funding to extend the 20mph speed restriction along the entire length of Poplars Avenue and also into Capesthorpe Road (between Poplars Avenue and Blackbrook Avenue) would be a beneficial highway safety improvement.
- 6.17 Whilst inevitably there will be an impact from development traffic on the amenity of the residents in the properties either side of the new accesses onto Poplars Avenue, both Poplars Avenue and the proposed access roads are designed to the appropriate standards i.e. Poplars Avenue is currently a 7.3 metre wide UAP3 road and will remain so apart from local widening to accommodate the access junction. The new access road will also be a road type UAP3.
- 6.18 Therefore, in highway terms although the percentage increase in traffic is high on some links the impact of the development traffic particularly on the area to the south, combined with the measures set out in HTP Technical Note TN/10 should be considered acceptable.

7.0 CAPACITY ASSESSMENTS - SITE ACCESS JUNCTIONS

7.1 The site access junctions have been assessed using the WMMTM16 flow data for 2022, 2027, and 2032 years of assessment under the Option A access strategy, for the Do Something scenarios as follows:

- i. 2022 part-development (120 dwellings)
- ii. 2022 full development
- iii. 2027 part-development (600 dwellings and local centre)
- iv. 2032 full development

7.2 The site access junctions modelled (modelling reports contained in the following appendices) are:

- i. Mill Lane/Blackbrook Avenue – **Appendix 17**
- ii. Poplars Avenue (central) – **Appendix 18**
- iii. Poplars Avenue (west) – **Appendix 19**
- iv. Mill Lane/Delph Lane – **Appendix 20**
- v. Birch Avenue/A49 Winwick Road – See **Section 9.0**, VISSIM

7.3 LINSIG has been used for modelling signalised junctions and Junctions 9 comprise the ARCADY and PICADY software suites, which have been used to model roundabout and priority junctions.

7.4 The modelling results are summarised in terms of capacity, queue lengths and delay.

Mill Lane/Blackbrook Avenue New Roundabout

7.5 The modelling results for the Mill Lane/Blackbrook Avenue new site access roundabout are provided in **Table 7.1** below.

Table 7.1 – Mill Lane/Blackbrook Avenue New Roundabout Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Something (part)	38%	1	4	31%	1	4
Do Something (full)	50%	1	5	40%	1	5
2027						
Do Something (part)	47%	2	5	38%	1	4
2032						
Do Something (full)	57%	2	7	43%	1	5

- 7.6 From the above **Table 7.1** it can be seen that the proposed roundabout from Mill Lane/Blackbrook Avenue to the east of the site will operate well within capacity within the future year scenarios.

Poplars Avenue (central) New Priority Junction

- 7.7 The modelling results for the new Poplars Avenue (central) site access priority junction are provided in **Table 7.2** below.

Table 7.2 – Poplars Avenue (central) Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Something (part)	6%	1	8	7%	1	8
Do Something (full)	14%	1	9	18%	1	10
2027						
Do Something (part)	17%	1	10	37%	1	14
2032						
Do Something (full)	15%	1	10	20%	1	11

- 7.8 From the above **Table 7.2** it can be seen that the proposed ghost right turn priority junction from Poplars Avenue to the south of the site will operate well within capacity within the future year scenarios.
- 7.9 The supporting spreadsheet for this junction modelling is also contained in **Appendix 18**. The pass by trips (as set out in TN/03, **Appendix 3**) were removed from the Poplars Avenue mainline movements and added on to the development arrival and departure flows.

Poplars Avenue (western) New Priority Junction

- 7.10 The modelling output for the new Poplars Avenue (western) site access priority junction is provided in **Table 7.3** below.
- 7.11 Due to phasing of the development (see **Section 13.0**), there is no development traffic turning to/from this junction in 2022 under the part development (scenario 120 dwellings), hence no opposed traffic streams. The network is tested for 2022 with full development and therefore this junction is modelled to test capacity.

Table 7.3 – Poplars Avenue (western) Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Something (part)	-	-	-	-	-	-
Do Something (full)	16%	1	9	10%	1	8
2027						
Do Something (part)	8%	1	8	5%	1	8
2032						
Do Something (full)	16%	1	9	10%	1	8

- 7.12 From the above **Table 7.3** it can be seen that the proposed priority junction from Poplars Avenue (west) to the south of the site will operate well within capacity within the future year scenarios with the addition of the development traffic.

Mill Lane/Delph Lane Priority Junction

- 7.13 The modelling results for the Mill Lane/Delph Lane priority junction are provided in **Table 7.4** below. As this is an existing junction, the Do Minimum results are provided as well as the Do Something results for reference.
- 7.14 This junction uses the 2019 MCC survey data (see **Appendix 21** for reference) to provide the base flows for the existing Mill Lane western arm in the Do Minimum scenarios i.e. the turning movements to and from the minor arm. These flows are added to the WMMTM16 mainline flows. The relevant development traffic is then added to this data for the Do Something scenarios.

Table 7.4 – Mill Lane/Delph Lane Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	5%	1	11	7%	1	11
Do Something (part)	13%	1	12	12%	1	12
Do Something (full)	27%	1	15	20%	1	14
2027						
Do Minimum	6%	1	12	7%	1	12
Do Something (part)	27%	1	15	21%	1	14
2032						
Do Minimum	6%	1	12	8%	1	12
Do Something (full)	30%	1	16	22%	1	15

- 7.15 From the above **Table 7.4** it can be seen that the existing Mill Lane priority junction will operate well within capacity in the future year scenarios with the addition of the development traffic.

Birch Avenue

- 7.16 The Birch Avenue junction is modelled as part of the VISSIM corridor, see **Section 9.0**. Capacity at this junction with the addition of the development traffic (circa 20 dwellings) was not shown to raise highway capacity issues at the previous inquiry.
- 7.17 However, it is apparent that blocking back does occur on the A49 past the Birch Avenue junction. Therefore, Keep Clear markings on the nearside lane of the A49 are still proposed in this location in order to improve access to the A49 dual carriageway (southbound) at the Birch Avenue junction. See drawing contained at **Appendix 22**.

Summary

- 7.18 From the above modelling results it can be seen that the proposed site access junctions will all operate well within capacity as a result of the development scheme in all future year scenarios.
- 7.19 From a review of the site access capacity analysis using the WMMTM16 and the previous Peel Hall SATURN, it can be seen that the results for the two main access junctions are generally consistent.

8.0 CAPACITY ASSESSMENTS - OFF-SITE JUNCTIONS

8.1 As set out in **paragraph 1.27**, the off-site junctions to be considered for further detailed modelling following review of the Peel Hall WMMTM16 outputs and a meeting with the Council, are:

- i. Golborne Road/Myddleton Lane
- ii. Delph Lane/Myddleton Lane
- iii. A49 M62 Junction 9 roundabout*
- iv. A50/Hilden Road roundabout and A50/Poplars Avenue
- v. A50/Hallfields Road
- vi. A49/A50/Hawleys Lane crossroads*
- vii. A49/JunctionNINE Retail Park*
- viii. Blackbrook Avenue roundabout with Enfield Park Road and Ballater Drive
- ix. Blackbrook Avenue roundabout with Enfield Park Road and Capesthorne Road
- x. Poplars Avenue roundabout with Capesthorne Road
- xi. Cromwell Avenue/Calver Road linked with Sandy Lane West/A49 roundabout*

8.2 The junctions above with asterisks are modelled within the VISSIM as agreed with the Council's highway officer.

8.3 The analysis for the other seven junctions has been carried out using the Junctions 9 package (ARCADY and PICADY) and LinSig. The results are summarised in turn below for Access Strategy Option A.

Golbourne Road/Myddleton Lane

8.4 The Golbourne Road priority junction with Middleton Lane is located to the north west of the development site and is already a very congested junction at peak hours with much queuing on Golbourne Road northbound for right-turning traffic, blocking ahead traffic, and also queuing on Myddleton Lane.

8.5 The model was run as a flat profile and the modelling output files are contained in **Appendix 23** and summarised in **Table 8.1**.

Table 8.1 – Golbourne Road/Myddleton Lane Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	106%	54	287	92%	12	58
Do Something (part)	106%	55	292	92%	13	59
<i>DS (part) – DM</i>	<i>0</i>	<i>1</i>	<i>5</i>	<i>0</i>	<i>1</i>	<i>1</i>
Do Something (full)	109%	66	349	96%	19	90
<i>DS (full) – DM</i>	<i>3%</i>	<i>12</i>	<i>62</i>	<i>4%</i>	<i>7</i>	<i>32</i>
2027						
Do Minimum	110%	71	372	91%	12	72
Do Something	111%	78	408	92%	13	104
<i>DS - DM</i>	<i>1%</i>	<i>7</i>	<i>36</i>	<i>1%</i>	<i>1</i>	<i>32</i>
2032						
Do Minimum	112%	83	433	98%	18	164
Do Something	115%	103	536	106%	30	271
<i>DS - DM</i>	<i>3%</i>	<i>20</i>	<i>104</i>	<i>8%</i>	<i>12</i>	<i>107</i>

- 8.6 From the above **Table 8.1** it can be seen that in the Do Minimum scenario the junction is shown to be operating at or above capacity in the modelling, with the main issue on arm C (Golbourne Road northbound) as shown in **Appendix 24** until the later years from 2027 Do Something when in the PM it is the minor arm also that starts to experience the larger queues and delays (albeit contained on the link).
- 8.7 It can be noted that, in 2022, 105 development trips are forecast to travel through this junction in the AM peak hour and 68 in the PM peak hour. This reduces to around 79 and 63 development trips in 2032 respectively i.e. from around seven development vehicle tips every four minutes in 2022 to around one development vehicle trip per minute in 2032. As such this impact is not considered to be significant.
- 8.8 Furthermore, it can be seen that the differences between the Do Minimum and Do Something are very minor i.e. between 3% and 8% RFC increases in the AM and PM respectively. The increase in queuing vehicles is up to around an additional 20 vehicles in the busiest peak hour and up to an additional 107 seconds of delay. However, it is considered that the queues are not realistic given that the model is not able to demonstrate the effects of traffic on the southbound Golbourne Road arm giving way to northbound right-turning traffic i.e. letting those vehicles clear the junction and as such the data should be treated with caution as an indication of impact only.
- 8.9 Therefore, it is proposed to provide Keep Clear markings to assist with the operation of the junction to clear right-turning traffic from Golbourne Road northbound (**Appendix 25**). This mitigation measure cannot be modelled but is considered to be beneficial to reduce delay and queues through this junction.

Myddleton Lane/Delph Lane

- 8.10 The Myddleton Lane priority junction with Delph Lane is located to the north east of the appeal site, above the M62. During the peak hours the junction is observed to operate well.
- 8.11 The model was run as a flat profile and the modelling output files are contained in **Appendix 24** and summarised in **Table 8.2**.

Table 8.2 – Myddleton Lane/Delph Lane Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	100%	18	172	75%	3	27
Do Something (part)	102%	21	204	75%	4	28
<i>DS (part) – DM</i>	<i>2%</i>	<i>3</i>	<i>32</i>	<i>0%</i>	<i>1</i>	<i>1</i>
Do Something (full)	122%	75	645	81%	5	36
<i>DS (full)– DM</i>	<i>22%</i>	<i>57</i>	<i>473</i>	<i>6%</i>	<i>2</i>	<i>9</i>
2027						
Do Minimum	116%	50	466	87%	7	53
Do Something	127%	81	745	97%	15	120
<i>DS - DM</i>	<i>11%</i>	<i>31</i>	<i>279</i>	<i>10%</i>	<i>8</i>	<i>67</i>
2032						
Do Minimum	148%	103	1120	98%	17	133
Do Something	187%	164	2012	105%	35	256
<i>DS - DM</i>	<i>39%</i>	<i>61</i>	<i>892</i>	<i>7%</i>	<i>18</i>	<i>123</i>

- 8.12 From the above **Table 8.2** it can be seen that in the AM peak hour the junction is shown to be operating at or above capacity in the Do Minimum models, and at or over capacity in the PM peak hour from 2027 (Do Minimum) onwards.
- 8.13 This junction was not previously suggested for further review in the Peel Hall SATURN modelling. The development impact was previously forecast in the Peel Hall SATURN model (Do Something minus Do Minimum) to be 67 vehicles in the AM peak hour and 72 in the PM (2025). From a review of the development trips (**Appendix 13**), it can be seen that WMMTM16 assigns around 122 development trips in the AM peak hour and 86 development trips in the PM peak hour through this junction. This is up to around two development trips every minute in the AM peak hour and up to double the development trips previously assigned.

- 8.14 It can be seen from a review of the WMMTM16 Do Something flow diagrams (**Appendix 12**) that there is a difference in base traffic through this junction, particularly in the AM peak hour when compared to the previous (Peel Hall SATURN) modelling. For example, around a 150 vehicle increase in the WMMTM16 AM model in Do Minimum in the relatively comparative year of 2032 compared to the Peel Hall SATURN 2030 scenario i.e. an increase of over two additional vehicle movements every minute through the junction as a result of the WMMTM16 assignment across the wider area.
- 8.15 When a junction becomes over capacity in a stand-alone model such as PICADY, e.g. the operation of the model in the AM peak hour, it cannot adequately forecast queueing and delay and as such the results should be treated with caution.
- 8.16 However, whilst it is not considered for our development to fix all the existing network problems, and certainly not issues in a Do Minimum network scenario for 12 years into the future, the provision of a signal junction has been tested and the results set out in **Table 8.3**. The LinSig modelling output files are also contained in **Appendix 24**.

Table 8.3 – Myddleton Lane/Delph Lane Signal Modelling Results

Scenario	AM Peak Hour			PM Peak Hour		
	Highest Lane DoS (%)	Queue (pcu)	Junction Delay (pcuHr)	Highest Lane DoS (%)	Queue (pcu)	Junction Delay (pcuHr)
2022 DM	82.3%	25	15	78.1%	19	15
2022 DS	82.7%	26	15	78.7%	19	16
2022 DS (Full)	91.1%	32	21	84.6%	22	18
2027 DM	88.4%	30	18	83.8%	21	18
2027 DS	91.3%	33	22	90.3%	23	22
2032 DM	93.6%	36	23	92.0%	24	23
2032 DS (Full)	99.4%	45	36	99.5%	31	36

- 8.17 From **Table 8.3** it can be seen that the signalisation of this junction would significantly improve the operation of the junction to below 2022 Do Minimum levels shown with the priority modelling in the AM peak hour. As such, this mitigation is proposed (**Section 11.0**) to offset the impact of the Peel Hall development on the local highway network.

A50/Hilden Road Roundabout and A50/Poplars Avenue

- 8.18 The A50/Hilden Road roundabout junction is located to the south of the development site. This junction was previously subject to mitigation proposals that removed the Council's highway safety scheme and increase capacity through the junction.
- 8.19 The modelling output files are contained in **Appendix 25** and the stand-alone A50/Hilden Road roundabout modelling results are summarised in **Table 8.4**, with the linked Poplars Avenue/A50 and Hilden Road roundabout results summarised in **Table 8.5**.

Table 8.4 – A50/Hilden Road Roundabout Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	82%	5	19	90%	8	32
Do Something (part)	86%	6	24	92%	10	37
<i>DS (part) – DM</i>	<i>4%</i>	<i>1</i>	<i>5</i>	<i>2%</i>	<i>2</i>	<i>5</i>
Do Something (full)	96%	14	52	100%	24	80
<i>DS (full)– DM</i>	<i>14%</i>	<i>9</i>	<i>33</i>	<i>10%</i>	<i>16</i>	<i>48</i>
2027						
Do Minimum	88%	7	27	95%	13	47
Do Something	99%	21	70	104%	35	109
<i>DS - DM</i>	<i>11%</i>	<i>14</i>	<i>43</i>	<i>9%</i>	<i>22</i>	<i>62</i>
2032						
Do Minimum	93%	11	42	100%	23	76
Do Something	106%	44	130	110%	64	180
<i>DS - DM</i>	<i>9%</i>	<i>33</i>	<i>88</i>	<i>10%</i>	<i>42</i>	<i>104</i>

- 8.20 From the above **Table 8.4** it can be seen that in 2022 if the full development traffic profile is added, the junction would begin to operate at capacity (it can be noted that the junction is shown to already be at capacity in the 2022 PM peak hour Do Minimum). Development traffic appears to increase RFC values by around 10%.
- 8.21 The linked modelling results set out in **Table 8.5**, but it should be noted that the lane simulation mode in Junctions 9 is provided only as an investigative tool and as such judgement should be applied to interpretation of the results. From experience, this tool is known to underestimate capacity and hence overestimate queues.

Table 8.5 – A50/Hilden Road Roundabout and A50/Poplars Avenue Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	-	6	32	-	24	78
Do Something (part)	-	8	46	-	31	97
<i>DS (part) – DM</i>	-	2	14	-	7	19
Do Something (full)	-	21	84	-	55	161
<i>DS (full)– DM</i>	-	15	52	-	31	83
2027						
Do Minimum	-	9	61	-	37	113
Do Something	-	27	133	-	78	235
<i>DS - DM</i>	-	18	72	-	41	122
2032						
Do Minimum	-	16	101	-	53	158
Do Something	-	49	148	-	94	293
<i>DS - DM</i>	-	33	47	-	41	135

- 8.22 From the above **Table 8.5** it can be seen that the development traffic may increase the largest queues by up to around 40 vehicles (Orford Road arm), with some delays increase by up to around two minutes.
- 8.23 From the results in **Appendix 25** it can be seen that the arms experiencing the most queueing and delay are the Orford Road arm (northbound into the junction), with the linked model forecasting a queue of 24 vehicles in the Do Minimum 2022 PM peak hour, and 55 in the Do Something scenario. The Poplars Avenue arm queue in 2027 Do Something has a queue of 22 vehicles in the AM peak hour and 26 in the 2032 scenario (compared to 8 and 16 for the respective Do Minimum scenarios).
- 8.24 In summary, further to officer discussion, it is proposed to offer contributions to mitigation elsewhere i.e. traffic calming measures in the area to the immediate south of the site as set out in **Section 11.0**.

A50/Hallfields Road

- 8.25 The A50/Hallfields Road signal junction is located to the south of the development site and has been assessed using Linsig. The junction was operated on a 120 second cycle time with an all red pedestrian phase called on every cycle. In reality the pedestrian all red phase will not be called every cycle. The modelling output files are contained in **Appendix 26** and summarised in **Table 8.6**.

Table 8.6 – A50/Hallfields Road Modelling Results

Scenario	AM Peak Hour			PM Peak Hour		
	Highest Lane DoS (%)	Queue (pcu)	Junction Delay (pcuHr)	Highest Lane DoS (%)	Queue (pcu)	Junction Delay (pcuHr)
2022 DM	63.0%	13	12	70.9%	15	16
2022 DS	64.7%	13	13	70.9%	15	16
2022 DS (Full)	77.3%	16	17	75.8%	16	18
2027 DM	68.4%	14	14	78.0%	17	18
2027 DS	79.1%	16	18	85.8%	20	21
2032 DM	74.5%	16	16	85.2%	19	21
2032 DS (Full)	97.2%	24	34	91.4%	21	25

8.26 From the above **Table 8.6** it can be seen that the results indicate the proposed development will have a moderate impact on the operation of the A50/Hallfields Road signal junction, with very minimal increases in queues and delay in 2022 (full development). Furthermore, when considering that an all red phase will not be called every cycle then it is expected that the junction will operate satisfactorily in all future design years.

8.27 However, given the result in the forecast year of 2032, it is proposed to provide a contribution to upgrade the MOVA to modern specifications and refresh the road markings.

Blackbrook Avenue/Enfield Park Road/Ballater Drive Roundabout

8.28 The Blackbrook Avenue roundabout junction with Enfield Park Road and Ballater Drive is located to the east of the development site.

8.29 The modelling output files are contained in **Appendix 27** and summarised in **Table 8.7**.

Table 8.7 – Blackbrook Avenue/Enfield Park Road/Ballater Drive Roundabout Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	32%	1	3	27%	1	3
Do Something (part)	34%	1	3	28%	1	3
<i>DS (part) – DM</i>	2%	0	0	1%	0	0
Do Something (full)	56%	2	5	42%	1	4
<i>DS (full)– DM</i>	24%	1	2	15%	0	1
2027						
Do Minimum	35%	1	3	29%	1	3
Do Something	46%	1	4	36%	1	4
<i>DS - DM</i>	11%	0	1	7%	0	1
2032						
Do Minimum	38%	1	4	31%	1	3
Do Something	62%	2	6	47%	1	4
<i>DS - DM</i>	26%	1	2	16%	0	1

- 8.30 From the above **Table 8.7** it can be seen that the junction will continue to operate well within capacity with the addition of the development traffic in all future years with negligible impact on queueing or delay.

Blackbrook Avenue/Enfield Park Road/Capesthorpe Road Roundabout

- 8.31 The Blackbrook Avenue roundabout junction with Enfield Park Road and Capesthorpe Road is located to the east of the development site. The modelling output files are contained in **Appendix 27** and summarised in **Table 8.8**.

Table 8.8 – Blackbrook Avenue/Enfield Park Road/Capesthorpe Road Roundabout Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	35%	1	5	30%	1	6
Do Something (part)	36%	1	5	30%	1	6
<i>DS (part) – DM</i>	<i>1%</i>	<i>0</i>	<i>0</i>	<i>0%</i>	<i>0</i>	<i>0</i>
Do Something (full)	59%	2	6	52%	2	7
<i>DS (full)– DM</i>	<i>24%</i>	<i>1</i>	<i>1</i>	<i>22%</i>	<i>1</i>	<i>1</i>
2027						
Do Minimum	38%	1	6	32%	1	6
Do Something	51%	1	6	49%	1	7
<i>DS - DM</i>	<i>13%</i>	<i>0</i>	<i>0</i>	<i>17%</i>	<i>0</i>	<i>1</i>
2032						
Do Minimum	42%	1	6	35%	1	6
Do Something	82%	5	16	62%	2	8
<i>DS - DM</i>	<i>40%</i>	<i>4</i>	<i>10</i>	<i>27%</i>	<i>1</i>	<i>2</i>

- 8.32 From the above **Table 8.8** it can be seen that the junction will continue to operate within capacity with the addition of the development traffic in all future years, with negligible impact on queueing or delay.

Poplars Avenue/Capesthorpe Road Roundabout

- 8.33 The poplars Avenue roundabout junction with Capesthorpe Road is located to the south east of the development site. The modelling output files are contained in **Appendix 29** and summarised in **Table 8.9**.

Table 8.9 – Poplars Avenue/Capesthorpe Road Roundabout Modelling Results

Junction	AM Peak Hour			PM Peak Hour		
	Max RFC	Queue Length (Veh)	Delay (sec.)	Max RFC	Queue Length (Veh)	Delay (sec.)
2022						
Do Minimum	40%	1	7	45%	1	7
Do Something (part)	44%	1	8	46%	1	7
<i>DS (part) – DM</i>	<i>4%</i>	<i>0</i>	<i>1</i>	<i>1%</i>	<i>0</i>	<i>0</i>
Do Something (full)	60%	2	11	60%	2	11
<i>DS (full)– DM</i>	<i>20%</i>	<i>1</i>	<i>4</i>	<i>15%</i>	<i>1</i>	<i>4</i>
2027						
Do Minimum	45%	1	7	47%	1	8
Do Something	62%	2	11	64%	2	13
Do Something – Do Minimum	<i>17%</i>	<i>1</i>	<i>4</i>	<i>17%</i>	<i>1</i>	<i>5</i>
2032						
Do Minimum	51%	1	9	50%	1	8
Do Something	79%	4	22	68%	2	15
Do Something – Do Minimum	<i>28%</i>	<i>3</i>	<i>13</i>	<i>18%</i>	<i>1</i>	<i>7</i>

- 8.34 From the above **Table 8.9** it can be seen that the junction will continue to operate within capacity with the addition of the development traffic in all future years, with negligible impact on queueing or delay.

Impact on M62 Junction 9

- 8.35 A review of the development impact on the M62 Junction 9 has been carried out. The previous Peel Hall SATURN model forecast around 47 development trips on the M62 Junction 9 in the AM peak hour and around 120 in the PM peak hour.
- 8.36 The Peel Hall WMMTM16 forecasts around 86 development trips in the AM peak hour and 35 in the PM peak hour (**Appendix 13**). From the original review of the origin-destination data there was observed to be a difference between the two models in this location. It can be seen that the peaks are reversed and that the Peel Hall SATURN had higher trips overall.
- 8.37 Previously, it was proposed to provide funding for widening of the A49 southbound entry radius and circulatory to the eastbound on-slip, creating a two-lane slip road (as per the westbound on-slip) prior to the lane gain, and also for widening of the westbound off-slip entry to the roundabout from two to three lanes.
- 8.38 From the VISSIM model, using WMMTM16 data, it can be seen that the development traffic impact at the M62 Junction 9 does not require mitigation as a result of development impact. This is explained in **paragraphs 9.12 to 9.19**.

Summary

- 8.39 A review of the stand-alone modelling result for the data from the two Peel Hall models has been carried out. From this it can be seen that there are similarities and differences in the development impact between Peel Hall SATURN and the WMMTM16.
- 8.40 Both the Mill Lane/Blackbrook Avenue/Enfield Park Road roundabout and the Capesthorpe Road/Blackbrook Avenue/Enfield Park Road roundabout are demonstrated to operate well within capacity in the future year. Therefore, there is no obvious difference shown between the SATURN model outputs.
- 8.41 The Poplars Avenue/Capesthorpe Road roundabout is shown to require no mitigation when running the Peel Hall WMMTM16 dataset, with modelling results in the AM peak hour the same between both datasets for the 10 years after opening scenario (at 0.79 RFC) but a lower PM peak hour result of 0.68 with the Peel Hall WMMTM16. It is acknowledged that the previous mitigation on this junction was minimal.
- 8.42 The M62 Junction 9 has now been shown to not require mitigation and it is considered that mitigation contributions for the A50/Hilden Road roundabout should be put towards traffic calming and/or pedestrian and cycle measures in the area to the immediate south of the Peel Hall site.
- 8.43 The two Myddleton Lane junctions modelled are shown to experience significant increases in background traffic. Keep Clear road markings are proposed on the Golbourne Road arm of the western junction to prevent queueing traffic southbound blocking the minor arm for northbound right-turning vehicles, and a signal junction is proposed at the Delph Lane junction in the east.
- 8.44 A contribution towards upgraded MOVA control at the A50/Hallfields Road junction is also proposed.
- 8.45 It is considered that with supporting travel plan measures that are attractive such as vouchers for bus travel, improved pedestrian connectivity and attract cycle routes, a modal-shift from the private car to sustainable modal choices could result in circa 10% reduction in car travel from the Peel Hall site. This would further reduce the cumulative traffic impact on the junctions modelled above. This is compatible with paragraph 7.1.11 of the emerging Local Plan, which sets out that, "*A Travel Plan is essentially an action plan designed to help organisations implement measures to reduce the need for travel and to facilitate and encourage the remainder to travel more sustainably. It should help to reduce local traffic congestion, car parking problems and help to promote healthy lifestyles, economic growth and environmental improvements.*" This paragraph forms the basis of Policy INF1(7).

9.0 VISSIM

- 9.1 Following the engagement with the Council's WMMTM16, it was requested that we carry out additional modelling of the A49 corridor using VISSIM microsimulation modelling. A VISSIM Methodology Report was provided in November 2019 (**Appendix 30**) to the Council and Highways England to agree the way forward.
- 9.2 The modelling was carried out as agreed using the previously validated (in 2017) VISSIM as a base. A base modelling report was then provided to Highways England and the Council in January 2020, and comments were received January 2020 and February 2019 respectively (see **Appendix 31**). These comments are addressed in the modelling, with an updated base model and report and responses to both sets of comments provided in **Appendix 32**.
- 9.3 The following scenarios have been tested in VISSIM:
- i. 2022 Do Minimum (Reference Case)
 - ii. 2022 Do Something (Full Development Scenario)
 - iii. 2027 Do Minimum (Reference Case)
 - iv. 2027 Do Something (Part Development Scenario)
 - v. 2032 Do Minimum (Reference Case)
 - vi. 2032 Do Something (Full Development Scenario)
- 9.4 The Access Strategy Option A data has been run through the VISSIM base model. The initial report (February 2020) is provided in **Appendix 33** and demonstrates that there are some relatively minor, steady increases to delay and queue lengths as a result of the growth in background traffic and also in terms of specific development related traffic.
- 9.5 As a result of levels of queueing and delay found during the development of future year models, some links have been extended in an attempt to ensure that all demand is able to enter the model. An exercise to optimise signal timings has also been carried out, along with a more responsive signal controller added to the A50/A49 junction to reflect improvements in signal operation that would result from MOVA installation.
- 9.6 Furthermore, local widening and a ghost right turn lane have been added in at the A49 Newton Road junction with Golbourne Road at the very top of the model, to assist with network operation at the very top of the study area. This mitigation was previously proposed as part of the Parkside package of works, but not included for in the first round of VISSIM forecast modelling. It is considered that, if these mitigation works are not already in place by the 600th dwelling of the Peel Hall site, the developer will implement these works. The March 2020 Option A Forecasting report is also provided at **Appendix 33**.

- 9.7 To the south of the M62 Junction 9, the largest impacts in 2032 (AM peak) are seen on the Sandy Lane West and A49 southbound approaches to the A49 Winwick Road/ A574 Cromwell Avenue/ Sandy Lane West roundabout. The Sandy Lane West maximum queue reaches 295 metres in the Do Something scenario (compared to 123 metres in the Do Minimum scenario). This queue length is approximately the distance back to the Cotswold Road/ Cleveland Road/ Sandy Lane/ Sandy lane West roundabout. It can be noted that average queues are forecast to be 205 metres in 2032 Do Something, so there is a large difference between average and maximum queue lengths forecast.
- 9.8 The southbound movement on the A49 has the largest traffic volume and is very sensitive to any increase in delay – even tiny changes to signal timings can quickly lead to queue lengths reaching back to, and beyond, M62 Junction 9. As a result, Sandy Lane West and Cromwell Avenue can get a disproportionate penalisation as a result of being the movements directly competing for green time with southbound traffic on the A49.
- 9.9 As a result of these issues, the signal controller has been optimised at the A49 Winwick Road/ A574 Cromwell Avenue/ Sandy Lane West roundabout in order to ‘double-cycle’ the timings. This meant have one cycle which prioritised the side road movements, followed by one cycle which prioritised the main road movements. This allowed all movements enough time to clear the roundabout’s limited internal storage, without overall affecting the conflicting flows.
- 9.10 In the PM, to the south of M62 Junction 9, there are also increases to average and maximum queue lengths on the Sandy Lane West arm of the A49 Winwick Road / A574 Cromwell Avenue / Sandy Lane West roundabout. In much the same way as is found with the AM peak models, the level of congestion and need to give the A49 priority at this junction make it very difficult to assign enough time to the side arms, leading to the potential for high levels of queuing. As with the AM peak though, it was found that double cycling the signal timings provided considerable benefit in the PM peak at this roundabout too.
- 9.11 Further south, there are increases to average and maximum queue lengths for northbound traffic on the A49 at the A49 Winwick Road / Hawleys Lane / A50 Long Lane junction, although the queuing here does clear within the peak, as can be seen from the lack of any latent demand at the southernmost end of the model.

M62 Junction 9

- 9.12 In the AM, the results show that there are increases to maximum queue lengths for traffic on the eastbound off-slip from the M62 at junction 9 in 2032 i.e. opening plus ten years after.
- 9.13 Up to 2032, the queueing vehicles are always contained within the link stacking capacity of approximately 315 metres within the model, with maximum queue lengths at 314 metres in the 2027 Do Something scenario. Although the average queue lengths are just over 90 metres, showing the maximum queue lengths to be unusual.

- 9.14 However, in the 2032 AM Do Something scenario, there is blocking from the northbound A49 exit arm during the last half of the peak hour, which is entirely the result of the delays caused by the A49 Newton Road/ Golborne Road junction.
- 9.15 It can be noted that in 2022 (Do Something i.e. full development profile), queue lengths in the AM peak hour are shown to be 22 metres long (average) to 164 metres long (maximum). This is well within the stacking capacity of this link.
- 9.16 It is considered that as this impact is shown on the motorway in 2032, rather than 2022 with full development traffic (which is the test set out in Circular 02/2013), that sets out, *"Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, further capacity mitigation will not be sought."*
- 9.17 In much the same way as in the AM peak hour models, there are some more notable increases to maximum queue lengths for traffic on the eastbound off-slip from the M62 in the PM peak hour which are reasonably consistent in all scenarios.
- 9.18 However, the average queue length increases are much lower than in the AM peak, and both are well contained within the link stacking capacity. The largest maximum queue being 268m in 2032, with a stacking capacity of 315m for the link. Although all average queue measurements are considerably lower (84m), and it is not considered that this maximum queue occurs often in the VISSIM as previously set out.
- 9.19 It is therefore considered that these results indicate that the development would not, *"significantly erode the safe operation of the SRN"*. In any event, the impact and effects of a Travel Plan and increases in modal shift (more local trips made by public transport, walking or cycling) is not modelled for within this assessment and as such this should be taken into account.

Summary

- 9.20 In summary, further to optimisation of the signals through the corridor, the provision of localised widening and a ghost right turn lane at the junction of the A49 with Golbourne Road to the north of the model extents, and a vehicle actuation controller system on the A49/A50 junction, the results, particularly in the AM peak, demonstrate that queue lengths remain largely unchanged, despite the increased traffic levels associated with the development.
- 9.21 It is clear that for both northbound and southbound traffic travelling on the A49, there is not any sort of statistically noticeable impact (other than a reduction of almost one minute for the southbound section approaching the A49/ Sandy Lane West/ Cromwell Avenue roundabout in 2022 AM peak, likely as a result of improvements to the signal timings at this junction) until 2032. Those impacts are almost exclusively the result of the junction of A49 Newton Road and Golborne Road, where the level of forecast right-turning traffic from WMMTM16 is high for a priority junction off a single two-way carriageway.

- 9.22 In the PM peak, it is clear that the development has no real negative impact on travel times along the A49.
- 9.23 As such, it is proposed to provide the following measures on the A49 corridor to ensure that the development traffic impact is mitigated for:
- i. A49/A50/Hawleys Lane signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing
 - ii. A49 Newton Road/Golbourne Road – provide a scheme of widening and a ghost right turn lane if not provided by other committed schemes

10.0 ACCIDENT DATA REVIEW

10.1 This Section of the report provides a review of the accident data for the whole study area using the most recent up to date records from the Council for the five-year period between October 2014 and September 2019. The raw data is provided on disk as **Appendix 34**.

10.2 In total, there were 312 reported Personal Injury Accidents (PIA) on the highway network across the study area in north Warrington. These were recorded as:

- i. 3 'fatal'
- ii. 47 'serious'
- iii. 247 'slight'

10.3 The three fatal PIA are detailed as follows:

- i. 2017, Birchwood Way between (underneath) the M62 and Birchwood Park Avenue roundabout
- ii. 2018, A49 dual carriageway near Poplars Avenue (involving a pedestrian)
- iii. 2019, Birchwood Way between A50 Orford Road and Blackbook Avenue

10.4 Of the 47 'serious' PIA, the casualties included the following:

- i. 10 pedestrians
- ii. 16 cyclists
- iii. 13 motorcyclists

10.5 Of the 247 'slight' PIA, the casualties included the following:

- i. 32 pedestrians
- ii. 61 cyclists
- iii. 32 motorcyclists

10.6 The following accident review concerns carriageway links surrounding the development. The number reference provided (#) cross references the relevant PIA in the report published by Warrington Borough Council (CS734 North Warrington Area 5yrs PIAs to Sept 2019 F-Print (Full print) Crash Report).

Poplars Avenue

10.7 In total, there were 10 reported PIA on Poplars Avenue, between Cotswold Road and the A50 Orford Green in the 5-year study period. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 9 'slight'

10.8 Of the reported PIA, two of these involved a pedestrian and were classified as 'slight'; three of these involved a cycle (one classified as 'serious' and two 'slight'). None of the reported PIA involved a motorcyclist.

- 10.9 The 'serious' accident (#143) involved a car and cycle in 2017 on the section of Poplars Avenue parallel to Buttermere Crescent. It was daylight, the road surface was dry, and the weather was fine. The impact was reported as the front of the car and the offside of the cycle.

Sandy Lane and Sandy Lane West

- 10.10 The Sandy Lane and Sandy Lane West links includes reported PIA at the Sandy Lane West/Cotswold Road/Cleveland Road roundabout and Sandy Lane/Howson Road/Northway roundabout, detailed later in this section.
- 10.11 In total, there were 11 reported PIA on Sandy Lane and Sandy Lane West link. These can be summarised as:
- i. 0 'fatal'
 - ii. 1 'serious'
 - iii. 10 'slight'
- 10.12 Of the reported PIA, one of these involved a pedestrian (classified as 'slight'), which occurred at the Sandy Lane/Howson Road/Northway roundabout; four PIA involved a cycle (one classified as 'serious' and three as 'slight'); two PIA involved a motorcycle (both classified as 'slight').
- 10.13 The 'serious' PIA (#47) involved a car and a cycle and occurred in 2015 on Sandy Lane West on the approach to the A49/Cromwell Avenue roundabout. It was daylight, the road surface was dry, and the weather was fine.

Cleveland Road

- 10.14 Two 'slight' PIA were recorded on Cleveland Road. One involved a motorcycle and one a cycle.

Cotswold Road

- 10.15 One 'slight' PIA was recorded on Cotswold Road, which involved a pedestrian.

Howson Road

- 10.16 In total, there were two reported PIA on Howson Road. Both were classified as 'slight'; one of which involved a cycle.

Statham Avenue

- 10.17 In total, there were three reported PIA on Statham Avenue. These can be summarised as:
- i. 0 'fatal'
 - ii. 1 'serious'
 - iii. 2 'slight'

- 10.18 Of the reported PIA on Statham Avenue, one of these involved a pedestrian (classified as 'slight'); one involved a cycle (also classified as 'slight').
- 10.19 The 'serious' PIA (#131) involved two cars and a bus/coach, which occurred in 2015 on the approach to the priority junction with Sandy Lane. It was daylight, the road surface was wet, and the weather was foggy and misty. The collision occurred when one of the cars collided with the bus/coach, which was stopping. The other car was parked.

Delph Lane/Blackbrook Avenue corridor

- 10.20 The Delph Lane/Blackbrook Avenue corridor link includes reported PIA at the Myddleton Lane junction, Enfield Park Road/Ballater Drive roundabout, Capesthorne Road roundabout and Birchwood Way roundabout, detailed later in this section.
- 10.21 In total, there were 27 reported PIA on the Delph Lane/Blackbrook Avenue corridor, between Myddleton Lane and Birchwood Way. These can be summarised as:
- i. 0 'fatal'
 - ii. 7 'serious' (*referenced as accident 1-7 below*)
 - iii. 20 'slight'
- 10.22 Of the reported PIA on this corridor, five of these involved a pedestrian (one classified as 'serious' and four as 'slight'); five involved a cycle (two classified as 'serious' and three as 'slight'); eight involved a motorcycle (three classified as 'serious' and five as 'slight').
- 10.23 The 'serious' accident involving a pedestrian (Accident 1) (#233) also involved a car. It occurred in 2017 on the section of Blackbrook Avenue over the subway parallel to Lancaster Close. It was daylight, the road surface was dry, and the weather was fine. The pedestrian was in the carriageway crossing from the driver's nearside and the car was going ahead.
- 10.24 Accident 2 (#161) involved two cars and occurred in 2018 around 150 metres south of the junction between Delph Lane and Myddleton Lane. It was daylight, the road surface was dry, and the weather was fine. The PIA was recorded as a head-on collision around a bend.
- 10.25 Accident 3 (#219) involved a car and a motorcycle and occurred in 2017 at the junction between Mill Lane and the Mill Lane turn off which leads to Radley Lane. It was dark, with streetlights present, the road surface was dry, and the weather was fine. The collision occurred between the car turning right from the Mill Lane turn off and the motorcycle travelling northbound towards Delph Lane.
- 10.26 Accident 4 (#228) involved a goods vehicle and a cycle and occurred in 2017 at the Enfield Park Road/Capesthorne Road roundabout. It was daylight, the road surface was wet, and the weather was fine. The nearside of the goods vehicle collided with the offside of the cycle, and both vehicles were travelling ahead.

- 10.27 Accident 5 (#235) involved a car and a motorcycle and occurred in 2017 at the Hilden Road/Insall Road crossroad junction. It was dark but there were streetlights, the road surface was wet, and it was raining. The front of the motorcycle collided and the offside of the car collided; and both vehicles were going ahead.
- 10.28 Accident 6 (#240) involved a car and a motorcycle and occurred in 2014 between the Birchwood Way roundabout and the Hilden Road/Insall Road crossroad junction. It was daylight, the road surface was dry, and the weather was fine. The front of the motorcycle collided with the back of a parked car.
- 10.29 Accident 7 (#250) involved a car and a cycle and occurred in 2019 on the Birchwood Way roundabout. It was daylight, the road surface was dry, and the weather was fine. The collision occurred between the offside of the car and the front of the cycle. The car was entering the roundabout and the cyclist was turning right.

A50 Long Lane to Orford Green

- 10.30 The A50 Long Lane to Orford Green link includes reported PIA at the Northway/A50 junction and Hilden Road/Smith Drive roundabout, detailed later in this section.
- 10.31 In total, there were 34 reported PIA on the A50 Long Lane to Orford Green link. These can be summarised as:
- i. 0 'fatal'
 - ii. 7 'serious' (Accidents 1 to 7)
 - iii. 27 'slight'
- 10.32 Of the reported PIA on, six of these involved a pedestrian (two classified as 'serious' and four as 'slight'); 13 of these involved a cycle (one classified as 'serious' and six as 'slight'); seven of these involved a motorcycle (five classified as 'serious' and two as 'slight').
- 10.33 The first 'serious' accident involved a pedestrian (Accident 1) (#104) also involved one car and occurred in 2015, east of the Northway junction. It was daylight, the road surface was dry, and the weather was fine. The collision occurred between the car (travelling ahead) and a stationary pedestrian in the carriageway.
- 10.34 The second 'serious' accident (Accident 2) (#116) occurred between a motorcycle (travelling ahead) and a pedestrian crossing at an uncontrolled crossing from the driver's offside (2018), west of the Fisher Avenue junction. It was daylight, the road surface was dry, and the weather was fine.
- 10.35 Accident 3 (#100) involved a car and a motorcycle and occurred in 2016 at the Northway junction. It was daylight, the road surface was dry, and the weather was fine. This was recorded as a shunt-type accident.

- 10.36 Accident 4 (#120) involved a car and a motorcycle and occurred in 2017 close to the Fisher Avenue junction, at a private drive or entrance. It was dark, streetlights were present, the road surface was wet, and the weather was fine. The car was turning right and the motorcycle was going ahead and the collision was recorded as occurring between the nearside of the car and the front of the motorcycle.
- 10.37 Accident 5 (#172) involved a car and a motorcycle and occurred in 2018 between Bruce Avenue and Poplars Avenue. It was dark, streetlights were present, the road surface was wet, and the weather was fine. The motorcycle was travelling ahead and the car was waiting to turn right.
- 10.38 Accident 6 (#177) involved a car and a motorcycle and occurred in 2019 at the Poplars Avenue junction. It was daylight, the road surface was dry, and the weather was fine. The car was turning right onto Poplars Avenue and the motorcycle was going ahead towards the Hilden Road/Smith Drive roundabout. The collision occurred between the front of the car and the offside of the motorcycle.
- 10.39 Accident 7 (#183) involved a car and a cycle and occurred in 2017 at the Hilden Road/Smith Drive roundabout. It was daylight, the road surface was dry, and the weather was fine. Both the car and cyclist were travelling ahead around the circulatory and the collision occurred between the front of the car and the back of the cycle.

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.

Junction Analysis

- 10.41 The accident data has also been reviewed in terms of stand-alone junction, as set out below.

A49 Newton Road/Golborne Road

- 10.42 In total, there were four reported PIA at the A49 Newton Road/Golborne Road junction. These can be summarised as:
- i. 0 'fatal'
 - ii. 1 'serious'
 - iii. 3 'slight'
- 10.43 Of the reported PIA two involved a cycle (one classified as 'serious' and one as 'slight').
- 10.44 The 'serious' accident (#41) involved two cars and occurred in 2019. It was dark, streetlights were present, the road surface was wet, and it was raining. The PIA was recorded as a head-on type collision, involving a u-turning manoeuvre.

Golborne Road/Myddleton Lane

- 10.45 In total, there were two reported 'slight' PIA at the Golborne Road/Myddleton Lane junction, one of which involved a cycle.

Myddleton Lane/Delph Lane

- 10.46 In total, there were four reported 'slight' PIA at the Myddleton Lane/Delph Lane junction, one of which involved a motorcycle.

A49/M62 Junction 9 roundabout

- 10.47 In total, there were two reported 'slight' PIA at the A49/M62 Junction 9 roundabout.

A49/Delph Lane Retail Park

- 10.48 In total, there were three reported 'slight' PIA at the A49/Delph Lane retail park junction, one of which involved a cycle.

A49/Winwick Link Road/Winwick Park Avenue Roundabout

- 10.49 In total, there were eight reported 'slight' PIA at the A49/Winwick Link Road/Winwick Park Avenue roundabout; one of which involved a cycle; and one of which involved a motorcycle.

A49/Sandy Lane West/Cromwell Avenue Roundabout

- 10.50 In total, there were 15 reported PIA at the A49/Sandy Lane West/Cromwell Avenue roundabout. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 14 'slight'

- 10.51 Of the reported PIA, two involved a cycle (one classified as 'serious' and one as 'slight'); one involved a motorcycle (classified as 'slight').

- 10.52 The 'serious' accident (#30) involved a car and a cycle and occurred in 2016 on the A49 southbound. It was daylight, the road surface was dry, and the weather was fine. The report states that the cyclist was changing lane and the nearside of the car and offside of the cycle collided.

A49/A50/Hawleys Lane

- 10.53 In total, there were 15 reported 'slight' PIA at the A49/A50/Hawleys Lane crossroads, one of which involved a pedestrian; three involved a cycle; and one involved a motorcycle.

Poplars Avenue/Greenwood Crescent

- 10.54 There was one reported 'slight' PIA at the Poplars Avenue/Greenwood Crescent junction; which involved a cycle.

Poplars Avenue/Capesthorpe Road Roundabout

- 10.55 In total, there were two reported PIA at the Poplars Avenue/Capesthorpe Road roundabout. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 1 'slight'

- 10.56 Of the reported PIA, one involved a pedestrian (classified as 'serious').

- 10.57 The 'serious' accident (#175) involved a goods vehicle and occurred in 2017 on the eastern arm of the roundabout as previously described. It was daylight, the road surface was dry, and the weather was fine.

Poplars Avenue/A50 Orford Green

- 10.58 In total, there were three reported PIA at the Poplars Avenue/A50 Orford Green junction. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 2 'slight'

- 10.59 Of the reported PIA, one involved a cycle (classified as 'slight'); and one involved a motorcycle (classified as 'serious').

- 10.60 The 'serious' accident (#177, described previously) involved a car and a motorcycle (2019). It was daylight, the road surface was dry, and the weather was fine. The report states that the car was turning right onto Poplars Avenue and the motorcycle was going ahead towards the Hilden Road/Smith Drive roundabout and the collision occurred between the front of the car and the offside of the motorcycle.

A50/Hilden Road/Smith Drive roundabout

- 10.61 In total, there were eight reported PIA at the A50/Hilden Road/Smith Drive roundabout. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 7 'slight'

- 10.62 Of the reported PIA one involved a pedestrian (classified as 'slight'); five involved a cycle (one classified as 'serious' and four as 'slight').

- 10.63 The 'serious' accident (#183, described previously) involved a car and a cycle (2017), on the section between the A50 (southbound) arm and the Smith Drive arm. It was daylight, the road surface was dry, and the weather was fine. The report states that both the car and cycle were travelling ahead on the circulatory and the collision was between the front of the car and the back of the cycle.

A50/Birchwood Way

- 10.64 In total, there were 14 reported PIA at the A50/Birchwood Way junction. These can be summarised as:
- i. 0 'fatal'
 - ii. 3 'serious' (Accidents 1 to 3)
 - iii. 11 'slight'
- 10.65 Of the reported PIA, one involved a cycle (classified as 'serious' (Accident 1)); and two involved a motorcycle (both classified as 'slight').
- 10.66 Accident 1 (#196) involved a car and a cycle and occurred in 2018. It was dark, streetlights were present, the road surface was wet, and the weather was fine. The report stated that the car was turning right onto Birchwood Way and the cycle was travelling southbound on the A50.
- 10.67 Accidents 2 and 3 (#190 and #198) each involved two cars and both occurred in 2018. It was daylight, the road surface was dry, and the weather was unknown. The report states head-on collisions between ahead and turning vehicles.

A50/Fisher Avenue

- 10.68 In total, there were two reported PIA at the A50/Fisher Avenue junction. These can be summarised as:
- i. 0 'fatal'
 - ii. 1 'serious'
 - iii. 1 'slight'
- 10.69 Of the reported PIA, one involved a pedestrian (classified as 'slight') and one involved a motorcycle (classified as 'serious').
- 10.70 The 'serious' accident (#120, described previously) involved a car and a motorcycle, and occurred in 2017 at a private drive or entrance.

A50/Northway/Densham Avenue

- 10.71 In total, there were eight reported PIA at A50/Northway/Densham Avenue junction. These can be summarised as:
- i. 0 'fatal'
 - ii. 1 'serious'
 - iii. 7 'slight'

10.72 Of the reported PIA three of these involved a cycle (all classified as 'slight'); two involved a motorcycle (one classified as 'serious' and one as 'slight').

10.73 The 'serious' accident (#100, described previously) involved a car and a motorcycle, and occurred in 2016, which was recorded as a shunt-type accident.

Sandy Lane/Cleveland Road/Cotswold Road roundabout

10.74 In total, there were two reported 'slight' PIA at the Sandy Lane/Cleveland Road/Cotswold Road roundabout; one of which involved a cycle.

Sandy Lane/Northway/Howson Road Roundabout

10.75 In total, there were three reported PIA at the Sandy Lane/Northway/Howson Road roundabout; one of these involved a pedestrian; one involved a cycle; and one involved a motorcycle.

Mill Lane/Mill Lane

10.76 In total, there was one reported 'serious' PIA at the Mill Lane/Mill Lane turn off roundabout, which involved a motorcycle.

10.77 The 'serious' accident (#219, described previously) involved a car and a motorcycle (2017).

Enfield Park Road/Cinnamon Lane

10.78 In total, there was one reported 'slight' PIA at the Enfield Park Road/Cinnamon Lane junction.

Enfield Park Road/Blackbrook Avenue/Capesthorpe Road Roundabout

10.79 In total, there were six reported PIA at the Enfield Park Road/Blackbrook Avenue/Capesthorpe Road roundabout during the five-year study period. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 5 'slight'

10.80 Of the reported PIA, two of these involved a cycle (one classified as 'serious' and one as 'slight'); two involved a motorcycle (classified as 'slight'); one involved a mobility scooter (classified as 'slight').

10.81 The 'serious' accident (#228, described previously) involved a goods vehicle and a cycle (2017).

Blackbrook Avenue/Insall Road/Hilden Road

10.82 In total, there were three reported PIA at the Blackbrook Avenue/Insall Road/Hilden Road crossroads. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 2 'slight'

10.83 Of the reported PIA, two involved a pedestrian (both classified as 'slight'); one involved a motorcycle (classified as 'serious').

10.84 The 'serious' accident (#235, described previously) involved a car and a motorcycle (2017).

Blackbrook Avenue/Birchwood Way

10.85 In total, there were eight reported PIA at the Blackbrook Avenue/Birchwood Way junction. These can be summarised as:

- i. 0 'fatal'
- ii. 1 'serious'
- iii. 7 'slight'

10.86 Of the reported PIA, two involved a cycle (one classified as 'serious' and one as 'slight'); and three involved a motorcycle (classified as 'slight').

10.87 The 'serious' accident (#250, described previously) involved a car and a cycle (2019)

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.

11.0 PROPOSED MITIGATION MEASURES

- 11.1 There is no expectation in planning policy that development should mitigate for existing transport problems and the test in paragraph 109 of the NPPF sets out that, *"development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe"*. Therefore, the approach that has been taken is to mitigate for development impact arising from the Peel Hall development, with mitigation measures proposed fairly and reasonably related in scale and kind to the development.
- 11.2 At the previous inquiry a range of mitigation measures were proposed as part of the Peel Hall development comprising highway mitigation measures, a new and high quality bus route serving the site between Warrington town centre and Birchwood and an umbrella Framework Travel Plan. The highway works included:
- i. A49/Sandy Lane West – Widening of the Sandy Lane West approach to three lanes and other minor kerb realignments and associated adjustments to road markings
 - ii. A50 Orford Green/Poplars Avenue – Widening of the Poplars Avenue priority junction to two-lane entry (left only), removal of build out of the Orford Green entry arm to the roundabout, widening the Orford Road approach to two lanes (entry and exit) and creating a two-lane circulatory. Adjustments to cycle facilities where required
 - iii. Capesthorpe Road/Poplars Avenue – Widening on the Capesthorpe eastern arm to two lane entry and reduction in the central island diameter
 - iv. Enfield Park Road/Crab Lane – A three-arm single lane approach signalised junction with controlled pedestrian facility over the Crab Lane arm
 - v. M62 Junction 9 eastbound on-slip – Widening of the A49 southbound entry radius and circulatory to the eastbound on-slip, creating a two-lane slip road (as per the westbound on-slip) prior to the lane gain, and widening of the westbound off-slip entry to the roundabout from two to three lanes
 - vi. Birch Avenue/A49 – Provision of Keep Clear markings on the A49 nearside southbound lane across the Birch Avenue junction
- 11.3 From the above list, engineering measures (i) and (iii) to (v) are now longer proposed, because the modelling shows that there will be no significant development impact at these junctions. Furthermore, at the January 2020 meeting with the Council's highway officer it was suggested that the mitigation at the A50 Orford Green roundabout junction (ii) would be undesirable given that capacity was throttled at this junction to improve road safety; as such it is proposed to provide funding for traffic calming in the area to the immediate south of the peel Hall development i.e. Poplars Avenue, Capesthorpe Road, Greenwood Crescent.

11.4 Further to the results from the modelling using the Council's WMMTM16 SATURN model, including the VISSIM (**Section 9.0**) and protection of the area to the south, the following mitigation measures are proposed (**Appendix 22**):

- i. A full and comprehensive Travel Plan supported by extensive travel plan measures, to enhance and support sustainable travel of future residents
- ii. An effective bus mitigation strategy based on extending two existing bus services into the site, in the east and south
- iii. A50 Orford Green/Poplars Avenue – instead of engineering measures at this junction it is proposed to provide a contribution towards traffic calming measures within the area to the immediate south of the development site (see point iv)
- iv. Provision of funding for traffic calming measures on the area to the immediate south of the Peel Hall development such as Poplars Avenue, Cleveland Road, Statham Avenue, Howson Road and Capesthorpe Road. This is likely to involve, for example, replacement of measures along Capesthorpe Road with more appropriate traffic calming and additional traffic calming and traffic management measures in the wider area
- v. Provide funding for an extended 20mph speed limit through Poplars Avenue and Capesthorpe Road
- vi. Provision of uncontrolled dropped kerb pedestrian crossing points with tactile paving across arms of all roads intersecting with Poplars Avenue and upgrade existing locations for pedestrians to cross Poplars Avenue to promote attractive pedestrian routes, enhance highway safety and assist pedestrians with crossing movements
- vii. Provision of cycle-friendly measures on Poplars Avenue such as painting cycle markings on carriageway near junctions to warn motorists of cycles. Also, the provision of cycle warning signing where suitable poles for doing so at key areas such as the approaches to the Poplars Avenue/Capesthorpe Road roundabout
- viii. Provision of funding for parking spaces to be created within the highway verges at locations along Poplars Avenue and Capesthorpe Road
- ix. A49/A50/Hawleys Lane signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- x. A50/Hallfields Road signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- xi. A49 Newton Road/Golbourne Road – provide a scheme of widening and a ghost right turn lane if not provided by other committed schemes
- xii. Golbourne Road/Myddleton Lane - proposed provision of Keep Clear markings on the southbound A49 arm across the Golbourne Road arm to improve junction performance by removing obstructions to the A46 right-turning movement
- xiii. Myddleton Lane/Delph Lane – proposed signal junction
- xiv. Birch Ave/A49 – proposed provision of Keep Clear markings on the A49 nearside southbound lane across the Birch Avenue junction

- 11.5 Given the modelling results, it is considered reasonable for junction engineering mitigation works and MOVA contributions be in place upon occupation of the 600th dwelling; with travel plan measures, proposed lining works (Birch Avenue/A49 and Golbourne Road/Myddleton Lane), and pedestrian and cycle improvements to be in place by first occupation of the development and the bus measures to be put in place in agreement with the Council's passenger transport team and bus operator as soon as possible after first occupation i.e. 120th dwelling occupied.
- 11.6 Should the suggested 20mph speed limit measures, or the verge parking and traffic calming not be supported or included in an eventual approval of this scheme, our overall conclusions regarding the appropriateness of the area to adequately cope with the flows from this development are not affected.

12.0 ACCESS STRATEGY OPTION B

- 12.1 Access Strategy Option B has been modelled using WMMTM16 at the request of the highway officer and the data from WMMTM16 has been provided to the Council.
- 12.2 Option B was previously prepared as an alternative access scenario for the 2018 Inquiry and is a through-route created through the site between the A49 in the west and Blackbrook Avenue in the east.
- 12.3 This strategy is not being promoted as part of this application. **Appendix 35** sets out the difficulties with such an access strategy. It was therefore decided that there was no value in completing the additional future year testing at this stage.
- 12.4 Nevertheless, it should be noted that Access Strategy Option A does not preclude Option B coming forward in the future.

13.0 PHASING OF DEVELOPMENT AND CONSTRUCTION TRAFFIC

- 13.1 The proposed phasing of the Peel Hall development for 2022 and 2032 has been reviewed.
- 13.2 It is anticipated that the development will come forward in 10 phases over a 10 year period with typically around 120 residential units being constructed each year; with the relocated sports pitches in year one, the local centre and care home opening at the end of year two, and the primary school by the end of year eight. **Table 13.1** below illustrates how the development may be phased in highway terms and the accompanying indicative phasing plan is contained in **Appendix 36**.

Table 13.1 – Indicative Phasing

Year End	Number of Residential Units off Each Access									Indicative Phasing (number of properties sold at year end)
	Distributor Road Blackbrook Ave		Poplars Ave		Mill Lane		Birch Ave		Cumulative Total	
	New	Cum.	New	Cum.	New	Cum.	New	Cum.		
1	0	0	60	60	60	60	0	0	120	1a 60 1b 60 Relocated sports pitches
2	50	50	50	110	20	80	0	0	240	2a 20 2b 50 2c 50 Need first part of distributor road from east and turning area for bus service Local Centre and Care Home off Poplars Ave
3	50	100	45	155	25	105	20	20	380	3a 25 3b 30 3c 20 3d 30 3e 7 3f 13 3g 15

Year End	Number of Residential Units off Each Access									Indicative Highways Build Out (number of properties sold at year end)
	Distributor Road Blackbrook Ave		Poplars Ave		Mill Lane		Birch Ave		Cumulative Total	
	New	Cum.	New	Cum.	New	Cum.	New	Cum.		
4	55	155	40	195	25	130	0	20	500	4a 25 4b 35 4c 20 4d 20 4e 20 Temporary emergency link through to Radley Lane
5	60	215	40	235	20	150	0	20	620	5a 20 5b 30 5c 30 5d 20 5e 20 Potential for initial bus link through Local Centre and connecting to eastern distributor road Emergency link through Local Centre created Provision of emergency access through to Poplars Avenue (west) from distributor road
6	95	310	25	260	0	150	0	20	740	6a 10 6b 30 6c 55 6d 25

Year End	Number of Residential Units off Each Access									Indicative Highways Build Out (number of properties sold at year end)
	Distributor Road Blackbrook Ave		Poplars Ave		Mill Lane		Birch Ave		Cumulative Total	
	New	Cum.	New	Cum.	New	Cum.	New	Cum.		
7	90	400	30	290	0	150	0	20	860	7a 40 7b 50 7c 30
8	100	500	20	310	0	150	0	20	980	8a 30 8b 70 8c 20 Primary School Completion of distributor road
9	110	610	10	320	0	150	0	20	1,100	9a 10 9b 100 9c 10
10	90	700	10	330	0	150	0	20	1,200	10a 90 10b 10 Provision of final emergency access through to employment distributor road

14.0 SECTION 106 HEADS

14.1 The Section 106 heads and obligations comprise:

- i. The bus measures set out in **Section 6.0** i.e. diverting existing routes 25 and 20 into the proposed development, maintaining existing levels of service (frequencies etc) on the basis of developer funding (£106,000 per annum for service 25 and £117,000 per annum for service 20) provided on a gap-funding basis for a period of five years
- ii. The provision of sustainable travel vouchers to residents upon first occupation to the value of £250, which can be used towards the purchase of public transport tickets and/or cycle/cycle accessories, as set out in TA/01/A
- iii. An umbrella Framework Travel Plan to secure Travel Plans/Travel Plan Statements for each land use (residential, employment, retail, school and care home) as set out in TA/01/A
- iv. Highway mitigation works as set out in **Section 11.0**
- v. Construction Management Plan as set out in TA/01/A
- vi. Funding of a package of traffic calming measure to the south of the appeal site including extending the existing 20mph speed restriction and parking in the highway verge

14.2 A Section 278 Agreement would be entered into between the appellant and the Council for the construction and delivery of the site access junctions.

14.3 The off-site junction obligations are anticipated to be a mixture of Section 278 works and financial contributions depending on location.

15.0 SUMMARY AND CONCLUSION

- 15.1 Highgate Transportation Limited (HTp) have been commissioned by Satnam Millennium Limited to provide this Addendum to the previously submitted Transport Assessment (HTp/1107/01/A dated January 2018), in support of the proposals for a new residential neighbourhood on land at Peel Hall to be considered at a forthcoming reopened inquiry.
- 15.2 For the purposes of this assessment the development is assumed to comprise up to 1,200 residential dwellings, a local centre with food store, a care home, a two-form entry primary school and the relocation and upgrading of existing sports pitches with ancillary facilities.
- 15.3 It is proposed that the main vehicular accesses to the development will be provided from the Mill Lane arm of the Blackbrook Avenue/Ballater Drive/Mill Lane/Enfield Park Road roundabout junction and from Poplars Avenue. Additional access is provided from Mill Lane, Birch Avenue and a second access on Poplars Avenue. Access to the improved sports pitches will be from the existing access on Grasmere Avenue.
- 15.4 A high level of connectivity for pedestrians and cyclists will be provided through the site and connections will be made to the existing pedestrian routes around the site and enhanced by the additional accesses at Poplars Avenue and Mill Lane/Blackbrook Avenue.
- 15.5 The assessment work is based on the Council's WMMTM16, cordoned for the Peel Hall study area; the data from which has been analysed and then used to model individual junctions to further test the impact of the development as well as provide a VISSIM corridor model for the A49.
- 15.6 The stand-alone modelling has been based on the data set for Access Strategy A, with no through-route created through the site but a bus gate provided to facilitate bus movements.
- 15.7 A Memorandum of Understanding has been agreed between the developer and Warrington's Own Buses regarding how best to serve the Peel Hall site by bus through diverting the existing 25 and 20 routes into the proposed development. During the construction phase it is proposed that first existing service 25 would be extended into the easterly part of the site from Blackbrook Avenue, followed by service 20 from Poplars Avenue to the south. These services will offer Peel Hall residents regular bus connections for Warrington Town centre, Warrington Central Railway Station and Bus Interchange/Shopping Centre, Birchwood Rail Station and Business Park/Shopping, Warrington Vale Royal and Priestley College as well as the Orford Jubilee Hub and Winwick Road retail parks. The developer will provide funding for the first five years to establish the services. Given these existing services it is expected that these route extensions will be profitable.

15.8 Mitigation is proposed as:

- i. A full and comprehensive Travel Plan supported by extensive travel plan measures, to enhance and support sustainable travel of future residents
- ii. An effective bus mitigation strategy based on extending two existing bus services into the site, in the east and south
- iii. A50 Orford Green/Poplars Avenue – instead of engineering measures at this junction it is proposed to provide a contribution towards traffic calming measures within the area to the immediate south of the development site (see point iv)
- iv. Provision of funding for traffic calming measures on the area to the immediate south of the Peel Hall development such as Poplars Avenue, Cleveland Road, Statham Avenue, Howson Road and Capesthorpe Road. This is likely to involve, for example, replacement of measures along Capesthorpe Road with more appropriate traffic calming and additional traffic calming and traffic management measures in the wider area
- v. Provide funding for an extended 20mph speed limit through Poplars Avenue and Capesthorpe Road
- vi. Provision of uncontrolled dropped kerb pedestrian crossing points with tactile paving across arms of all roads intersecting with Poplars Avenue and upgrade existing locations for pedestrians to cross Poplars Avenue to promote attractive pedestrian routes, enhance highway safety and assist pedestrians with crossing movements
- vii. Provision of cycle-friendly measures on Poplars Avenue such as painting cycle markings on carriageway near junctions to warn motorists of cycles. Also, the provision of cycle warning signing where suitable poles for doing so at key areas such as the approaches to the Poplars Avenue/Capesthorpe Road roundabout
- viii. Provision of funding for parking spaces to be created within the highway verges at locations along Poplars Avenue and Capesthorpe Road
- ix. A49/A50/Hawleys Lane signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- x. A50/Hallfields Road signal junction – provide a contribution to upgrade the signal junction to MOVA operation (to cover controller, additional loops and testing)
- xi. A49 Newton Road/Golbourne Road – provide a scheme of widening and a ghost right turn lane if not provided by other committed schemes
- xii. Golbourne Road/Myddleton Lane - proposed provision of Keep Clear markings on the southbound A49 arm across the Golbourne Road arm to improve junction performance by removing obstructions to the A46 right-turning movement
- xiii. Myddleton Lane/Delph Lane – proposed signal junction
- xiv. Birch Ave/A49 – proposed provision of Keep Clear markings on the A49 nearside southbound lane across the Birch Avenue junction

15.9 A full updated accident review has been carried out and all road users considered in this assessment. It is considered that the previous independent Stage 1 Road Safety Audits set out in the Transport Assessment (1107/TA/01/A) for the Inquiry in 2018 remain valid.

- 15.10 In terms of transport related planning policy, a review of the NPPF, the emerging Local Plan and the Fourth Local Transport Plan has been carried out, which shows that the appeal proposals are policy compliant.
- 15.11 A sensitivity test for Access Strategy Option B was carried out but it became quickly apparent that the impact of the junction in such close proximity to the M62 Junction 9 was creating widespread queueing and delay. As such this does not form part of this application.

Conclusions

- 15.12 It has been demonstrated that the local and wider highway network can accommodate this development in highway safety and capacity terms, even though the existing network can be congested at peak times and sensitive to variations in traffic flows.
- 15.13 This report concludes that the proposals represent sustainable development in transport terms, and that in accordance with national and local policy improvements can be undertaken within the transport network that effectively limit the significance of impact arising from the development of the Peel Hall site.
- 15.14 This Transport Assessment finally concludes that the proposed development at Peel Hall is acceptable in highway and transport terms.