

9. Transport and Access

9.1. Introduction

- 9.1.1. This Technical Chapter has been prepared by Astute Transport Planning and assesses the environmental effects of the Proposed Development outlined in Chapter 4 in terms of transport and access issues.
- 9.1.2. This Chapter has been prepared by Adam Smith, a Director at Astute Transport Planning. Adam has 28 years of transport planning consultancy experience, advising a wide range of clients in relation to development projects across the United Kingdom. Adam has a Ba (Hons) in Planning Studies and a Diploma in Town Planning from Oxford Brookes University. He is a Fellow of the Chartered Institution of Highways and Transportation.
- 9.1.3. Adam has extensive experience of preparing input into Environmental Statements.
- 9.1.4. This chapter is supported by the following appendices:
- A Transport Assessment (TA) and Travel Plan (TP) prepared by Astute Transport Planning at **Appendix 9.1 and Appendix 9.2 respectively**;
 - Baseline plus cumulative and operational traffic data found at **Appendix 9.3**; and
 - Construction traffic data found at **Appendix 9.4**.
- 9.1.5. This Chapter, and its associated appendices, is intended to be read as part of the wider Environmental Statement (ES) with particular reference to the introductory chapters (Chapter 1 to Chapter 4).

9.2. Assessment Approach

Methodology

- 9.2.1. A TA and TP have been prepared alongside this Chapter as part of the Planning Application. These documents have been prepared in accordance with the National Planning Policy Framework and Planning Practice Guidance for Travel Plans, Transport Assessments and Statements¹. Pre-application discussions with Knowsley Metropolitan Borough Council (KBMC) (as the Local Planning and Highway Authority) and National Highways (responsible for the operation of the Strategic Road Network) have been undertaken in order that the scope of assessment has been agreed.
- 9.2.2. It should be noted that the traffic assessment included within the Transport Assessment, and used to assess environmental effects, has assumed a development of up to 750 dwellings rather than the 700 dwellings now proposed. Therefore, the traffic assessment is considered to be robust.

¹ Ministry of Housing, Communities and Local Government (March 2014), Guidance for Travel Plans, Transport Assessments and Statements

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- 9.2.3. The assessment methodology is based on the Institute of Environmental Management (IEMA) guidelines².
- 9.2.4. The IEMA guidelines identify a number of effects that may arise from changes in traffic flows associated with development proposals and set out the broad principles of how to assess the magnitude of effect for each.
- 9.2.5. Transport conditions in a future 'baseline' year must be compared against the conditions with the Proposed Development in place on a comparative basis, to assess the change and potential effects on the transport network. Baseline plus cumulative traffic data and Operational or With Development traffic data is provided at **Appendix 9.3**.
- 9.2.6. Following the assessment of the potential effects, additional transport measures are identified to mitigate potential adverse effects of the Proposed Development, where necessary. An assessment of the residual effects following the implementation of the mitigation measures is then undertaken.
- 9.2.7. At this stage of the planning process, the specific construction method and programme is not known. Consequently, it has been necessary to make some high-level assumptions which are outlined in **Appendix 9.4**. This assumes that construction of the Proposed Development would be over an 11-year period, assuming a delivery rate of 70 dwellings per annum.
- 9.2.8. Taking the above into account, the following scenarios are considered within this Chapter:
- 2028 Opening Year Do Nothing – reflecting a future baseline situation in the year that the development is first occupied but provides a scenario when the Proposed Development is not brought forward. As discussed with representatives of KMBC and National Highways through the pre-application process, background traffic growth is considered for the road network, alongside predicted traffic flows associated with relevant known committed developments. Full details of these assumptions are provided in the TA at **Appendix 9.1**.
 - 2028 Opening Year With Development – representing a scenario assuming full occupation of the Proposed Development at the time at which it is first occupied. This adds development-related traffic to the Do Nothing Scenario.
- 9.2.9. The IEMA guidance states that in scoping out the extent of the assessment 'two broad rules of thumb' can be used to delimit the scale and extent of the assessment.
- 9.2.10. These Rules are:
- Rule 1 – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
 - Rule 2 – Include any other specifically sensitive areas where traffic flows will increase by 10% or more.
- 9.2.11. The guidance makes it clear that *"a critical feature of environmental assessment is determining whether a given impact is significant"*. Further, *"for many effects, there are no simple rules or formulae that define appropriate assessment thresholds and therefore there is a need for interpretation and judgement on the part of the competent traffic and movement expert,*

² IEMA (July 2023) Environmental Assessment of Traffic and Movement

backed up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing an impact and the sensitivity of those people ...".

Assessment of Significance

9.2.12. An environmental impact can arise through the extra vehicle trips that might be generated as a result of new development and from new transport infrastructure. The potential implications that may arise from additional traffic have been described in the IEMA guidelines and include:

- Severance of communities;
- Road vehicle driver and passenger delay;
- Non-motorised user delay;
- Non-motorised amenity;
- Fear and intimidation on and by road users;
- Road user and pedestrian safety; and
- Hazardous/large loads.

9.2.13. The assessment of the above factors has been undertaken for both the construction and operational phases of the Proposed Development.

9.2.14. The IEMA guidelines set out the broad principles of how to assess the magnitude of the effect of development on each category, as outlined below:

- Severance of communities – The guidance states that *"severance is the perceived division that can occur within a community when it becomes separated by major transport infrastructure"*. Further, *"Changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively"*. However, the guidance acknowledges that the measurement and prediction of severance is extremely difficult and particular attention should be paid to situations where baseline traffic flows are low, meaning a high increase in traffic may still not result in severance effects.
- Road vehicle driver and passenger delay – such delays *"... are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system"*. For the purposes of this assessment, reference is made to junction capacity assessments that have been undertaken using the Junctions 11 and LinSig computer programs for priority or roundabout junctions and signal-controlled junctions, respectively.
- Non-motorised user delay – *"Changes in the volume, composition or speed of the traffic may affect the ability of people to cross roads"*. The guidance suggests that assessors *"... use their judgement to determine whether pedestrian delay constitutes a significant effect"*. The assessment of pedestrian delay also serves as a proxy for other active travel modes.

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- Non-motorised amenity – broadly defined as the relative pleasantness of a journey, it is affected by traffic flow, traffic composition and pavement width/separation from traffic. The guidance suggests a tentative threshold for judging the significance of changes in amenity to where traffic flow (or its lorry component) is halved or doubled.
- Fear and intimidation on and by road users – the impact of this is dependent upon the volume of traffic, its HGV composition, vehicle speeds, its proximity of traffic to people or the lack of protection caused by design factors or constraints. The guidance states that there are no commonly agreed thresholds for estimating this from known traffic and physical conditions, but it does nevertheless suggest some thresholds which could be used, based on previous research, and as calculated using **Table 9.1** and **Table 9.2**. The assessment considers whether the Proposed Development will result in sensitive receptors being located such that the level of fear and intimidation materially increases.

Table 9.1 Fear and Intimidation Degree of Hazard

Average traffic flow over 18-hour day- all vehicle /hour 2-way (a)	Total 18-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
+1,800	+3,000	>40	30
1,200-1,800	2,000-3,000	30-40	20
600-1200	1,000-2,000	20-30	10
<600	<1,000	>20	0

Table 9.2 Levels of fear and intimidation

Level of fear and intimidation	Total hazard score (a) + (b) + (c)
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

- Road user and pedestrian safety – There are a number of ways in which road safety can be measured. However, any assessment should use historic crash data and then consider how the baseline road safety level will change as a result of increasing the movement of people or by adding infrastructure such as the creation of additional junctions. A full assessment of accident data covering a 5 year period is provided in the TA at **Appendix 9.1**.
- Hazardous/large loads – the assessment needs to clearly outline the estimated number and composition of vehicles carrying dangerous or hazardous loads. It should include

vehicles required during the construction and decommissioning stages of the development as well as the operational phase.

- 9.2.15. The significance of potential traffic and transport effects has been determined using criteria developed from best practice techniques. The effect of significance is derived from measures of the magnitude (or scale) of the change and the sensitivity (or importance) of the receptors affected. Categories of sensitivity and magnitude are defined and assessed to determine the significance of the effect.

Magnitude of Impacts

- 9.2.16. The magnitude of potential impact (both positive and negative) on environmental baseline conditions have been identified in this Technical Chapter taking the following into account:

- Relevant legislation, policy or guidelines;
- The degree to which the environment is potentially affected. For example, whether the quality is enhanced or impaired;
- The scale or degree of change from baseline conditions as a result of the Proposed Development;
- The duration of the effect for example, whether it is temporary or permanent; and
- The reversibility of the effect.

- 9.2.17. The magnitude of impact has been assessed based on the following scale:

- Substantial – Considerable effects (by extent, duration or magnitude) of more than local significance or breaching identified standards of policy;
- Moderate – Limited impact (by extent, duration or magnitude) which may nonetheless be considered significant in the context of the site and / or surrounding area which may be considered significant;
- Minor – Slight, very short term or highly localised impact of no significant consequence; and
- Negligible – An impact on a resource / receptor of insufficient magnitude to affect the use / integrity.

Sensitivity of Receptors

- 9.2.18. The IEMA Guidelines discuss sensitive areas to changes in traffic conditions or transport infrastructure. They include:

- People at home.
- People at work.
- Sensitive and/or vulnerable groups (including young age, older age, income, health status, social disadvantage, and access and geographic factors).

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- Locations with concentrations of vulnerable users e.g. hospitals, places of worship, schools.
- Retail areas.
- Recreational areas.
- Tourist attractions.
- Collision clusters and routes with road safety concerns.
- Junctions and highway links at (or over) capacity.
- Groups or locations which may be sensitive to changes in traffic conditions.
- The identification of links or locations where it is felt that specific environmental problems may occur. Such locations could include collision black spots, conservation areas, hospitals, links with high pedestrian flows etc.

9.2.19. **Table 9.3** summarises the receptor sensitivity criteria that is proposed to be used for this assessment.

Table 9.3 Receptor Sensitivity

Receptor Sensitivity	Receptor Type
Substantial	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident black spots, retirement homes, roads without footways that are used by pedestrians.
Moderate	Traffic flow sensitivity receptors: congested junctions, doctors' surgeries, hospitals, shopping area with roadside frontage, roads with narrow footways, recreation facilities.
Minor	Receptors with some sensitivity to traffic flow: places of worship, public open space, listed buildings, tourist attractions and residential areas with adequate footway provision.
Negligible	Receptors with low sensitivity to traffic flows.

9.2.20. The significance of the effect is judged on the relationship of the magnitude of impact to the assessed sensitivity of receptor. **Table 9.4** provides a matrix of significance.

Table 9.4 Significance of Effects

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	Minor	Moderate	Substantial
Negligible	Negligible	Negligible	Negligible	Minor
Minor	Negligible	Negligible	Minor	Moderate
Moderate	Negligible	Minor	Moderate	Major
Substantial	Minor	Moderate	Major	Major

9.2.21. The following terms have been used to define the significance of the effects identified:

- Major Adverse or Beneficial Effect – where the Proposed Development could be expected to have a very significant effect (either positive or negative) on the existing environment;
- Moderate Adverse or Beneficial Effect – where the Proposed Development could be expected to have a noticeable effect (either positive or negative) on the existing environment;
- Minor Adverse or Beneficial Effect – where the Proposed Development could be expected to result in a small, barely noticeable effect (either positive or negative) on the existing environment; and
- Negligible Effect – where no discernible effect is expected as a result of the Proposed Development on the existing environment.

9.2.22. **‘Major’ and ‘moderate’** effects are considered to be ‘Significant’ in terms of EIA Regulations. All other effects are considered to be ‘Not Significant’

9.2.23. The duration of effects has also been considered, and described as short, medium, long-term, or permanent, as follows:

- Short Term – Less than 2 years;
- Medium-Term – Between 3 to 10 years;
- Long-Term – More than 10 years; and
- Permanent – Effects that are considered to be ‘irreversible’ or extremely long lasting.

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Legislative and Policy Framework

National Planning Policy

- 9.2.24. The National Planning Policy Framework (NPPF), originally published in March 2012 and most recently updated as of December 2024, sets out the government's planning policies for England and how these are expected to be applied. At the heart of the Framework is a presumption in favour of sustainable development.
- 9.2.25. As part of promoting sustainable transport, paragraph 115 of the updated NPPF states that in assessing applications for development, it should be ensured that:
- 'sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;*
- safe and suitable access to the site can be achieved for all users;*
- the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach'.*
- 9.2.26. Paragraph 116 goes on to state 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, taking into account all reasonable future scenarios'.*

Knowsley Local Plan Core Strategy

- 9.2.27. Knowsley Metropolitan Borough Council (KMBC) adopted the Local Plan Core Strategy in January 2016, it sets out the vision, objectives and policies which will guide future developments within Knowsley up to the year 2028.
- 9.2.28. The Core Strategy lists Saved Policies from the Knowsley Replacement Unitary Development Plan dated June 2006. Relevant Saved Policies include a number of transport-related policies as outlined below.
- 9.2.29. Policy T5: Location of Major Traffic Generating New Development requires major developments to be located no more than 400 metres from a bus stop and/or 800 metres from a rail station. Developments that generate significant movement should be located close to rail networks or the Strategic Road Network. Where needed, development should provide transport infrastructure improvements to ensure accessibility for all.
- 9.2.30. Policy T7: New Development and Walking & Cycling Routes should preserve and enhance active travel routes.
- 9.2.31. Policy T8: Transport Assessments outlines when a Transport Assessment is required and confirms that mitigation measures should be provided where development would prejudice the operation of the highway network.

- 9.2.32. Policy T9: Travel Plans confirms that documents will be required for development that generates significant volumes of vehicular traffic, particularly close to an Air Quality Management Area, or where traffic problems would be exacerbated.
- 9.2.33. Policy T10: Access for the Less Mobile confirms that all development must provide adequate access for the less mobile or those with sensory impairments.
- 9.2.34. Policy CS2 of the 2016 Knowsley Local Plan Core Strategy outlines the Development Principles which underpins any and all new development in Knowsley. It provides a framework to ensure that all development contributes positively to creating sustainable, inclusive, and well-connected communities. In relation to accessibility by sustainable modes of transport Principle 3 of Policy CS2 states:

"Principle 3: Reduce the need to travel and increase accessibility by:

- a) Selecting locations that reduce the need to travel, especially by car, and enable people as far as possible to meet their needs locally;*
- b) Assisting the Council in achieving a shift towards more sustainable modes of transport for people, goods and freight;*
- c) Encouraging safe and sustainable access for all, particularly by promoting the use of public transport, walking and cycling between homes and employment; and*
- d) Supporting the provision and retention of shared space, community facilities and other local services (such as local shops, health facilities, education provision, meeting places, sports venues, cultural buildings, public houses and places of worship)."*

- 9.2.35. The development principles in Policy CS2 seek to deliver sustainable communities and create healthy environments in Knowsley, in line with national policy. Policy CS2 indicates that the Council will support development in accessible locations that aim to reduce reliance on private cars, promote public transport, and encourage walking and cycling.

- 9.2.36. **Policy CS7** of the Knowsley Local Plan Core Strategy concerns Transport Networks, and the policy addresses the overall transport strategy for the area, the requirements for new development and strategic transport schemes and programmes. In relation to the overall transport strategy, Policy CS7 states that:

"Planning powers and other interventions will be used to support a sustainable and integrated transport system that will:

- a) Support the economy by facilitating efficient movement of people and goods within the borough and linking to Liverpool City Centre, the Port of Liverpool, Liverpool John Lennon Airport and other destinations in the surrounding area;*
- b) Help meet the development needs of the borough through to 2028;*
- c) Ensure people can get to where they need to by a choice of walking, cycling and public transport;*
- d) Enhance road safety;*
- e) Seek to reduce carbon emissions; and*

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f) Improve the health and wellbeing of local people”.

9.2.37. In relation to requirements for new development, **Policy CS7** states that:

“New development will be required to be:

- a) Located and designed to prioritise accessibility and sustainable modes of travel through a choice of walking, cycling, public transport, and incorporate access for private vehicles. Where deficiencies are identified, developer contributions will be required to improve the accessibility of the location;*
- b) Located and designed to ensure that larger scale proposals (attracting a lot of visitors, customers and/or employees) are located in the most accessible locations;*
- c) Where subject to a planning application, accompanied (except in the case of smaller scale proposals) by Transport Assessments and/or Travel Plans;*
- d) In compliance with adopted cycle, car, disabled and service vehicle parking standards for different types and scales of new development;*
- e) Inclusive of measures that will mitigate carbon emissions and improve air quality where appropriate; and*
- f) Consistent with safeguarding arrangements that secure the operational integrity and safety of Liverpool John Lennon Airport”.*

9.2.38. With regard to strategic transport schemes, Policy CS7 states that the Council will collaborate with partners to implement schemes which that align with the priorities of the Local Transport Plan. These include improvements to local bus services and infrastructure, such as upgraded bus stations, stops, and laybys, as well as expanded walking and cycling routes integrated into the Green Infrastructure network, and the deployment of infrastructure to support low-emission vehicles.

9.2.39. **Policy SUE1** of the Knowsley Local Plan Core Strategy covers the Sustainable Urban Extensions – Development Principles for the borough. The policy outlines sites that have been removed from Green Belt, and those that have been allocated to meet development requirements. Land at Knowsley Village, the location of the Proposed Development is land safeguarded for residential development.

EIA Scoping Process

9.2.40. As discussed in Chapter 2, a request for a Scoping Opinion was submitted on behalf of the Applicant to KMBC on 26th March 2025, which set out the proposed scope of assessment for the project (**see Appendix 2.1**). KMBC issued their Scoping Opinion on 21st May 2025 and is summarised in **Chapter 2** and included in full at **Appendix 2.2**.

9.2.41. With regards to Transport and Access matters, relevant responses were received from the consultees including National Highways and KMBC as Highways Authority and comments have been addressed accordingly, as follows in **Table 9.5** below.

Table 9.5: Relevant EIA Scoping Consultation Comments

Consultee	Summary of Comment	Response or location within the ES where comments are addressed
National Highways	▪ Up-to-date policy section to be provided, which includes DfT Circular 01/2022 and Planning for the future documents. ▪ Baseline traffic conditions to include current traffic flows, queue length survey data of the SRN junctions and existing operation of the SRN. ▪ Up to date collision data analysis to be provided including the SRN using STATS 19 data. ▪ TRICS assessment to be updated. ▪ Evidence to be provided for the routing assignment of the trip distribution and include M57 Junction 3. ▪ Confirmation of committed developments to be included, through liaison with the Local Planning Authority. ▪ Confirmation of opening year of development, which should be used in the assessment and include full build out of the proposal. ▪ Merge-Diverge Assessment to be undertaken of SRN Junctions M57 Junctions 4 and 2. ▪ How the Local Planning Authority will review and assess the site in light of the land being allocated as 'Safeguarded Land' and not allocated for development before 2028.	Refer to Transport Assessment in Appendix 9.1 .
KMBC Highways	▪ Satisfied with the identified scope	n/a

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Limitations to the Assessment

- 9.2.42. The prediction of the environmental impacts of traffic are based on sound assumptions using data from similar developments making use of the TRICS database and journey to work data from the 2011 census. The 2011 census is considered to be more representative taking into account the impact that the COVID restrictions placed on the findings of the 2021 census.
- 9.2.43. Peak hour traffic flow data, collected on Thursday 13th February and Tuesday 1th March 2025, is representative of average traffic conditions and has been used to consider peak hour network operation and has been growthed to provide Average Annual Daily Traffic (AADT) traffic and Average Annual Weekday Traffic (AAWT) flows for the wider use within this ES including the Air Quality assessment at **Chapter 10** and the Noise and Vibration assessment at **Chapter 11**.

9.3. Baseline Conditions

Site Description and Context

- 9.3.1. A full description of the Site and surrounding area from a transport perspective is provided within the TA at **Appendix 9.1**. This includes existing transport infrastructure including public transport services and an analysis of accident data across the local and strategic road networks.
- 9.3.2. A summary of this information is provided below.

Accessibility by Sustainable Modes of Transport

- 9.3.3. Full details of the accessibility of the Proposed Development by sustainable modes of transport can be found in the supporting TA. This document includes supporting mapping to assist in illustrating the Sites proximity to various amenities, education and employment opportunities.
- 9.3.4. The headline findings of the TA in respect of the Site's accessibility are reproduced below:

Walking Accessibility

- 9.3.5. The Site is well located in relation to local facilities within a convenient walk time based on existing infrastructure, such that future residents and users of the Site will have the opportunity to access key services via active travel modes. It is quite likely that Knowsley Village will attract walking trips to and from the proposed Site due to the local amenities and destinations such as:
- The Knowsley Village Primary School, and a local village centre on Sugar Lane circa 500m north of the centre of the Site. The local village centre includes a post office, off licence, bakery, fish and chips shop, pharmacy, salon, barbers, and a convenience store.
 - The Knowsley Medical Centre on Fredrick Lunt Avenue circa 650m north of the centre of the Site.
 - The Saint John Fisher Catholic Primary School and Knowsley Lane Recreation Ground on Shop Road circa 1.1km north of the centre of the Site.
- 9.3.6. The majority of Knowsley village is within a short walking distance of the proposed Site, which encompasses a range of residential areas and local amenities.
- 9.3.7. In addition to the adopted footpath network, the Site is situated in close proximity to KMBC 's Public Rights of Way (PRoW) network, further supporting pedestrian movements for residents

and users of the Site. In particular, the Site benefits from footpaths KN/3/1, KN/3/2, KN/2/1, KN/8/2 which run from Knowsley Lane to School Lane offering a low traffic route toward Knowsley Business Park.

9.3.8. The Proposed Development also benefits from access to bridleways KN/5/1 and KN/1/1 that run from the western side of Knowsley Lane opposite the Site and travel across the M57 providing links to Stockbridge Village as well as continuing north parallel to the M57 towards the Knowsley Business Park.

9.3.9. On the basis of the above review, walking is considered a viable mode for residents and users of the Site. The existing pedestrian network would also support those using walking as part of a multi-modal journey that includes the use of public transport.

Cycling Accessibility

9.3.10. An alternative mode of travel to the Site would be achieved by bicycle. Cycling is increasingly being recognised as a viable alternative to the car and there has been sustained growth in cycling as both a mode of travel and leisure activity.

9.3.11. Areas including Knowsley, Stockbridge Village, Croxteth, Page Moss, and parts of Knowsley Industrial Park, Huyton, and Prescot are all within cycling distance of the Site.

9.3.12. National Cycle Network (NCN) Route 862 lies in close proximity to the Site, as shown within Appendix 9.2 TP, Figure 3.3. The route is approximately 360m west of the Site, adjacent to the western side of the M57. The route provides a mostly traffic free connection between Kirkby and Stockbridge Village.

9.3.13. The Site is situated in close proximity to a bridleway connection that runs from the western side of Knowsley Lane, opposite the Site, across the M57 providing links to the off-road cycle tracks within Stockbridge Village. This bridleway also continues north parallel to the M57 and joins with an off-road cycle track to the east to link with the on-road signed cycle route through Knowsley Business Park. From Knowsley Business Park an on-road signed cycle route continues northwest and connects with the off-road cycle tracks either side of East Lancashire Road as well as continues into Kirkby.

Bus Accessibility

9.3.14. The nearest bus stop (Knowsley Park, opposite Home Farm Road) heading northbound is located approximately 400m from the centre of the Site along Knowsley Lane circa 50m to the north of Knowsley Lane and Home Farm Road T-junction. The nearest bus stop (Knowsley Lane / Sugar Lane) heading southbound is located further north along Knowsley Lane, approximately 450m from the centre of the Site.

9.3.15. There are additional bus stops located south along Knowsley Lane, approximately 550m from the centre of the Site; within approximately 70m to the south of the B5202 Knowsley Lane and Shannons Lane T-junction.

9.3.16. The Site is well connected to the local bus network and the regular services provide access to a variety of key employment, leisure and retail destinations including Bootle, Huyton, Kirkby, St Helens, Grange Park, Whiston Hospital, Prescot, and Knowsley Industrial Park

9.3.17. On the basis of the above, and the relatively short walking distances between the Site and the nearby bus stops, the Site is considered to be accessible by bus.

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Rail Accessibility

- 9.3.18. Huyton is the nearest major railway station to the Site, located approximately 4km to the south of the Site.
- 9.3.19. The station is on the Liverpool to Wigan Line and Stephenson's Liverpool to Manchester Line. The station has regular services of approximately 20–30 minutes to Liverpool, Manchester and Wigan. The 217 bus services provide a direction connection from the Site to Huyton station, taking approximately 15 minutes.
- 9.3.20. The Site is accessible by rail for site users using rail as part of a multi-modal journey.

Study Network and Baseline Survey Information

- 9.3.21. The adoption of this study area for the assessment of the Site has been agreed with KMBC and NH as part of the pre-application process.
- 9.3.22. Traffic survey data was collected by an independent survey company on Thursday 13th February and Tuesday 15th March 2025. Data was collected at the following junctions with full details included within the TA at **Appendix 9.1**:

- Knowsley Lane/ School Lane – priority-controlled junction;
- M57 Junction 4 – grade-separated gyratory;
- School Lane/Kitling Road/Caddick Road – priority-controlled roundabout junction;
- School Lane/Knowsley Lane – priority-controlled junction;
- Knowsley Lane/Sugar Lane – priority-controlled junction;
- Knowsley Lane/Home Farm Road – priority-controlled junction;
- Knowsley Lane/ Stockbridge Lane – priority-controlled junction;
- Seth Powell Way/ Stockbridge Lane/ Waterpark Drive (M57 Junction 3) – priority-controlled roundabout;
- Knowsley Lane/ Primrose Drive/ George Hale Avenue – signal-controlled junction;
- Liverpool Road/ Knowsley Lane/ Kings Drive – M57 Junction 2 western roundabout; and
- Liverpool Road/ A58/ Huyton Lane – M57 Junction 2 eastern roundabout.

9.4. Assessment of Likely Significant Effects

Receptors

- 9.4.1. Following a review of the surrounding area within the context of the highway network and transport infrastructure, the receptors that are to be considered for assessment include:
- Residents of properties adjacent to the assessment study area;

- Pedestrians using local roads;
- Cyclists using local roads;
- Staff and pupils of Knowsley Village Primary School and Saint John Fisher Catholic Primary School;
- Drivers using the local road network; and
- Drivers using the strategic road network.

9.4.2. The potential environmental implications associated with the operation of the Proposed Development on identified receptors are set out in **Table 9.6**.

Table 9.6 Environmental Implications for Receptors

Receptor	Impact	Potential Effect
Residents	Road vehicle driver & passenger delay Non-motorised Delay Non-motorised Amenity Fear and Intimidation Severance of Communities Road Safety	Increased delay on the local highway network Increased delay crossing roads and junctions Poorer environment for pedestrians Traffic conditions at levels to cause impact Impact on key desire lines Increased risk of accidents
Pedestrians	Non-motorised Delay Non-motorised Amenity Fear and Intimidation Severance Accidents and Safety	Increased delay crossing roads and junctions Poorer environment for pedestrians Traffic conditions at levels to cause impact Impact on key desire lines Increased risk of accidents
Cyclists	Non-motorised Delay Fear and Intimidation Accidents and Safety	Increased Intimidation Increased risk to cycle users
School Staff and Pupils	Road vehicle driver & passenger delay Non-motorised Delay Non-motorised Amenity Fear and Intimidation Severance	Increased delay on the local highway network Increased delay crossing roads and junctions Poorer environment for pedestrians

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	Accidents and Safety	Traffic conditions at levels to cause impact Impact on key desire lines Increased risk of accidents
Local Road Network	Road vehicle driver & passenger delay Accidents and Safety	Increased delay on the local highway network Increased risk of accidents
Strategic Road Network	Road vehicle driver & passenger delay Accidents and Safety	Increased delay on the strategic highway network Increased risk of accidents

- 9.4.3. Noting that the proposals being assessed are for residential development, it is not predicted that there will be any effects associated with the movement of hazardous or large loads, either during the construction or operational periods.

Construction

- 9.4.4. During the construction phase of the Proposed Development, the primary factors that generate potential environmental traffic impacts will be:

- Transportation of construction materials to and from the Site;
- Travel to and from the Site by the construction workforce;
- Movement of construction materials and the construction workforce within the Site;
- Disruption and disturbance caused by construction traffic including heavy goods vehicles (HGVs) during the construction phase; and
- Increase in proportion of HGVs causing detrimental impact on residential amenity.

- 9.4.5. The environmental implications of construction traffic mainly relate to dust and dirt, hazardous loads, and non-motorised amenity, although there are also potential effects to driver delay and highway safety particularly if construction involves works to the road network.

- 9.4.6. For the purposes of this Chapter, the construction traffic estimates have been based on the delivery of 70 dwellings per year for a period of 11 years. Construction traffic has been estimated based on information provided by The Applicant for another similar site. The calculation used to estimate the level of construction traffic is provided in **Appendix 9.4**. The predicted volume of daily traffic is provided in **Table 9.7**.

Table 9.7 Environmental Implications for Receptors

Construction Activity		
	Daily Cars/LV's	Daily HGV's
General Construction	99	9
Import/Export of Materials	0	15
Total Vehicles	99	24

- 9.4.7. It is standard practice that prior to construction a Construction Environment Management Plan ('CEMP') will need to be agreed with the Local Planning Authority, which will include measures to minimise the environmental impact during this phase. This is anticipated to be conditioned to any planning permission, albeit potential measures are outlined below which will form embedded mitigation.
- 9.4.8. For the purpose of this ES, the maximum volume of construction traffic is estimated as 99 car/LV movements and 24 HGVs per day.
- 9.4.9. It is anticipated that the daily workforce (arriving in cars/LGVs) would arrive between 07:00 – 10:00 hours and depart between 15:00 – 18:00 hours. Approximately one third of the total car/LGV movements would occur during the AM and PM peak hours based on a uniform arrival and departure rate for these periods. This equates to circa 33 car/LV movements.
- 9.4.10. The HGV movements would occur throughout the working day. Based on 24 HGV movements per day and a 10-hour working day, the average number of HGV movements would be less than 3 per hour in each direction.
- 9.4.11. The total number of construction vehicles generated during the peak hours is thus 36 vehicles. The number of vehicular movements is likely to be less during other periods, outside of the weekday morning and evening peaks. This level of traffic is significantly less than the level of traffic that is predicted during the operational phase of the Proposed Development.
- 9.4.12. Construction traffic routing to the Site could be controlled via a number of routes, including the from Junction 2 of the M57 from the south, Junction 4 of the M57 via School Lane or from the A580 East Lancs Road via Knowsley Lane to the north.
- 9.4.13. Noting the existing levels of traffic that passes along these routes, it can be concluded that traffic-related environmental impacts associated with the Proposed Development during the construction phase will be lower than during the operational phase.
- 9.4.14. Taking into account measures likely to be implemented as part of a CEMP as embedded mitigation, the effects of construction traffic on the operation of the transport network in the vicinity of the Proposed Development are anticipated to be direct, medium term, temporary effects of Minor Adverse significance on receptors of all sensitivity across the study area. This is **not considered to be Significant**.

Operation

- 9.4.15. Detailed assessment of the transport impacts of the Proposed Development is presented in the TA (see **Appendix 9.1**). This Chapter assumes that there will be measures put in place that will

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help to reduce environmental impacts through embedded mitigation such as the creation of safe site access junctions, the provision of active travel infrastructure within the site and linking with the local community, and a Travel Plan which will assist in reducing car travel. Further discussion is provided in **Section 9.5** of this chapter.

9.4.16. As detailed in the TA, junction improvements are proposed to be implemented as part of the Proposed Development, including works at Knowsley Lane/ School Lane and Knowsley Lane/ Stockbridge Lane. Consequently, these are also treated as the embedded mitigation for the purposes of this assessment.

9.4.17. Based on the traffic modelling work undertaken as part of the TA, the environmental effects of the modelled changes in traffic flows are provided below.

9.4.18. A series of summary tables, showing predicted changes to traffic flows across the local and strategic road networks as a result of the operational phase of the Proposed Development, are provided at **Appendix 9.3**. These tables include calculations to assess the environmental effects of changes in traffic flow on the various factors outlined earlier in this section. The summary tables include:

- a simple comparison table highlighting the changes in two-way traffic link flows across the study area for the 2028 Opening Year 'Without Development' and the 2028 Opening Year 'With Development' scenarios. The table shows changes to the number and percentage of light vehicles and heavy vehicles between the scenarios.
- The results of the high level IEMA scoping assessment, confirming which road links would experience an increase in traffic of over 30%;
- The results of the secondary IEMA scoping assessment for sensitive receptors, confirming which road links would experience an increase in traffic of over 10%;
- An assessment of severance, considering which links would experience an increase in traffic flows of more than 30%;
- An assessment of the impact of traffic on non-motorised amenity, assessing links where there would be a doubling in traffic; and
- An assessment of the impact of traffic on fear and intimidation, using the scoring system outlined in **Tables 9.1** and **9.2**.

9.4.19. The IEMA scoping assessment compares the traffic flows for the 2028 'With' and 'Without' development scenarios, with both including suitable background growth and taking into account traffic associated with committed development in the area as outlined in the Transport Assessment. It is therefore a cumulative and combined assessment.

9.4.20. The purpose of this assessment was to determine the extent of the network that should be the focus of study.

9.4.21. The data in **Appendix 9.3** confirms that the only links on the road network that would experience a more than 30% increase in traffic, are the proposed site access junctions onto Knowsley Lane and the eastern end of School Lane close to the junction with Knowsley Lane.

9.4.22. Turning to areas where traffic increases of 10% could affect sensitive receptors, the data shows that the only road links experiencing a more than 10% increase are the proposed site access

junctions onto Knowsley Lane, itself to the north of the new junctions, and School Lane along its length from Knowsley Road to the gyratory that forms Junction 4 of the M57.

- 9.4.23. Taking the above into account, it is concluded that the area of study should only include the site access junctions, Knowsley Lane up to the junction with School Lane and then School Lane to Junction 4 of the M57.

Severance of Communities

- 9.4.24. Prior to any assessment of severance, it should be noted that active travel infrastructure has been embedded into the design of the site access junctions on Knowsley Lane, within the Framework Masterplan and along key pedestrians routes to the north of the site to Sugar Lane.
- 9.4.25. The IEMA guidelines indicate that changes in traffic flow of 30%, 60% and 90% produce 'slight (negligible)', 'moderate' and 'substantial' changes in severance, respectively.
- 9.4.26. The magnitude of changes in traffic flows and sensitivity of receptors varies across the study area. There are no roads on which an increase in traffic flows is modelled that would be significant in terms of the thresholds suggested by the IEMA guidelines.
- 9.4.27. Data in **Appendix 9.3** confirms that the maximum change in daily traffic flows is 30% on School Lane at the junction with Knowsley Lane, which is less than the thresholds of change suggested by the IEMA guidelines for measuring severance. All other roads would be subject to lower increases in modelled traffic flows.
- 9.4.28. Consequently, the effect of the Proposed Development on severance is considered **Negligible** on all receptors across the study area, and therefore **Not Significant** in EIA terms.

Road Vehicle Driver and Passenger Delay

- 9.4.29. The IEMA guidelines note that driver delay can occur at several points on the network, although the effects are only likely to be significant when the traffic on the highway network is predicted to be at, or close to, the capacity of the system.
- 9.4.30. Based on the traffic modelling undertaken, as presented in detail in the Transport Assessment at **Appendix 9.1**, the changes in traffic flows would be satisfactorily accommodated at the majority of key junctions on the local and strategic highway networks. However, there are two locations where mitigation is required to ensure that delays to vehicle drivers and passengers would not be severe or significant in environmental terms.
- 9.4.31. One of these locations is within the scoped area of particular interest, to the eastern end of School Lane at the School Lane/Knowsley Lane priority junction. The other is to the south of the focused ES study area, at the Knowsley Lane/Stockbridge Lane priority-controlled junction, which takes traffic towards Junction 3 of the M57.
- 9.4.32. In summary, the addition of development traffic results in material queuing on the eastbound exit from School Lane onto Knowsley Road during the weekday evening peak hour. Capacity is also exceeded at the Knowsley Lane/Stockbridge Lane priority junction during both the morning and evening peak periods.
- 9.4.33. The Transport Assessment proposes imbedded infrastructure improvements to both of these junctions, which are discussed in more detail in **Section 9.5** of this Chapter. This mitigation

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includes the signalisation of the School Lane exit onto Knowsley Lane and the addition of a right turn lane from Knowsley Lane into Stockbridge Lane.

- 9.4.34. The effect of the Proposed Development on driver and passenger delay in the study area, with these embedded mitigation measures in place, is considered to be **Minor adverse** and therefore **not significant** in EIA terms.

Non-Motorised user Delay

- 9.4.35. The IEMA guidelines note that a change in the volume, composition and/or speed of traffic may affect the ability of pedestrians or cyclists to cross a road. The guidelines do not set any thresholds for assessing pedestrian delay, recommending instead that assessors use their judgement to determine the significance of the effect; accordingly, modelled traffic flows on the key links within the core study area, including Knowsley Lane north of the Proposed Development and School Lane, have been considered to indicate potential changes to delay.

- 9.4.36. The traffic modelling work undertaken demonstrates that traffic flows will increase along this route as outlined below:

- Knowsley Lane north of Proposed Development site access junctions – AADT traffic flows are predicted to increase by 14%. However, the masterplan allows for active travel improvements that will link the Proposed Development with Knowsley Village, including a pedestrian refuge to assist people when crossing Knowsley Lane to access bus stops, a segregated pedestrian and cycle route running along the western boundary of the Application Site and linkages to quieter routes along Home Farm Road through to the school and retail facilities on Sugar Lane and beyond. Therefore, whilst this road is considered to be of minor sensitivity, any effect associated with pedestrian delay can be accommodated.
- School Lane close to the junction with Knowsley Lane – AADT traffic flows are predicted to increase by 30% on School Lane, close to the junction with Knowsley Lane. Whilst there are footways provided on the northern edge of School Lane, the footway terminates to the south approximately 100m from the junction with Knowsley Lane. Despite this being a residential area, there are no pedestrian crossing facilities provided. Therefore, this road link is considered to be of Moderate sensitivity and the development is predicted to result in a Moderate Diverse and permanent impact. However, it should be noted that highway capacity improvements are already proposed at this junction as part of the Proposed Development, which will incorporate pedestrian crossing improvements. These are discussed in more detail in **Section 9.5** of this Chapter.
- School Lane to the west and close to Junction 4 of the M57 – AADT traffic flows are predicted to increase by 11% in this location, close to Junction 4 of the M57. It should however be noted that this stretch of School Lane does not have any active travel infrastructure located along it and pedestrian and cycle movements are encouraged to take alternative routes. These routes will be enhanced by the current proposals that improve active travel infrastructure around Junction 4 of the M57, including improved provision across School Lane through the implementation of a formal crossing. As a result, the effect of delay is **Minor Adverse** and is **Not Significant** in EIA terms.

- 9.4.37. Additional pedestrian infrastructure is to be delivered as embedded mitigation for the Proposed Development including, a pedestrian refuge on Knowsley Lane at the site access, improved pedestrian crossing facilities at the Knowsley Lane/ School Lane junction and improvements to the pedestrian routes between Home Farm Road and Sugar Lane.

- 9.4.38. Consequently, the effect of the Proposed Development in relation to Non-Motorised User Delay with embedded mitigation is considered to be **Minor Adverse** and **not significant** in EIA terms.

Non-Motorised Amenity

- 9.4.39. Prior to any assessment of non-motorised mobility, it should be noted that active travel infrastructure has been embedded into the design of the site access junctions on Knowsley Lane, within the Framework Masterplan and along key pedestrians routes to the north of the site to Sugar Lane.

- 9.4.40. The IEMA guidelines suggest thresholds for judging the significance of a change in non-motorised amenity where the traffic flow or the HGV component is halved or doubled.

- 9.4.41. With reference to the data provided in **Appendix 9.3**, it can be seen that there will be no links on the highway network where traffic flows including HGV movements will be doubled.

- 9.4.42. Consequently, the effect of the Proposed Development on pedestrian amenity on the wider network is considered to be **Negligible**, and **Not Significant** in EIA terms.

Fear and Intimidation

- 9.4.43. The IEMA guidelines suggest thresholds for judging the significance of a change in fear and intimidation based on the volume of traffic, the HGV composition and the speed of vehicles. The results of this assessment are provided in **Appendix 9.3**, with the majority of highway links showing a Small to Moderate effect.

- 9.4.44. The only links that experience a Great effect from traffic in terms of Fear and Intimidation are those around Junction 4 of the M57 and between the two roundabout junctions that make up Junction 2 of the M57. However, this score exists for the 'Without' Development scenario and therefore the Proposed Development does not result in any material environmental effects.

- 9.4.45. The effect of the Proposed Development on fear and intimidation is therefore **Negligible** and is **Not Significant** in EIA terms.

Road User and Pedestrian Safety

- 9.4.46. A detailed assessment of road traffic accident data for a five-year period is presented in the Transport Assessment (see **Appendix 9.1**). There is no evidence of a specific existing issue in terms of the configuration of the existing highway network, nor a pattern of accidents that suggest a layout-related issue that would need to be addressed to safely accommodate the Proposed Development.

- 9.4.47. Consequently, the effect of the Proposed Development on road user and pedestrian safety is **Negligible** and **Not Significant** in EIA terms.

Hazardous/Large Loads

- 9.4.48. The Proposed Development is residential in nature and therefore will not result in any hazardous or large loads during the operational phase, other than vehicles that you would expect within a residential neighbourhood such as refuse and emergency vehicles. The effect of the Proposed Development on hazardous and large loads is therefore **Negligible** and is **Not Significant** in EIA terms.

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9.5. Mitigation, Enhancement and Residual Effects

During Construction

- 9.5.1. No further mitigation beyond the embedded mitigation in the form of a Construction Environment Management Plan (identified at **Section 9.4.14**) is considered to be required.

During Operation

- 9.5.2. No further mitigation beyond the embedded mitigation (identified at Sections 9.4.15 and 9.4.16) is considered to be required.
- 9.5.3. A summary of the mitigation required is summarised in **Table 9.8** below.

Table 9.8: Embedded Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By S.106	By Condition
1	Construction Environment Management Plan			X
2	Active travel routes within the site and links to neighbouring streets			X
3	Pedestrian crossing facilities across Knowsley Lane along the site frontage			X
4	Providing missing dropped-kerbs and/or tactile paving at a number of junctions between Home Farm Road and Sugar Lane			X
5	Signalisation of School Lane exit onto Knowsley Lane including pedestrian infrastructure			X
6	Provision of right turn lane into Stockbridge Lane from Knowsley Lane and the provision of pedestrian infrastructure			X

Enhancement

- 9.5.4. The primary enhancement as a result of the development of the Site is the creation of a network of additional active travel routes, running through the site, linking to neighbouring streets and providing key additional crossing points across Knowsley Lane.
- 9.5.5. These facilities will serve both the existing and future communities of Knowsley.

Residual Effects

During Construction

- 9.5.6. As further mitigation beyond the embedded mitigation measures is not considered to be required, the residual effects are as set out in **Section 9.4**.

During Operation

- 9.5.7. As further mitigation beyond the embedded mitigation measures is not considered to be required, the residual effects are as set out in **Section 9.4**.

9.6. Summary

Introduction

- 9.6.1. This Technical Chapter has been prepared by Astute Transport Planning and assesses the environmental effects of the Proposed Development in terms of transport and access issues. It uses data found within a Transport Assessment for the basis of its consideration of environmental effects.

Baseline Conditions

- 9.6.2. A review of baseline conditions has been completed, considering access to the site by active travel and public transport modes. A traffic assessment has also considered existing traffic conditions utilising a study network that has been discussed and agreed with National Highways and Knowsley Council as the Highway Authority. This traffic assessment has assumed an assessment year of 2028 and has considered scenarios with and without development as well as during the construction and operational phases.

Likely Significant Effects

- 9.6.3. A summary of the likely effects are provided in **Table 9.9**. This confirms that, allowing for embedded mitigation, that there would be no residual significant adverse transport-related effects.

Mitigation and Enhancement

- 9.6.4. **Table 9.8** summarises the embedded mitigation measures that are proposed.
- 9.6.5. During the construction phase, mitigation consists of a Construction Environment Management Plan.
- 9.6.6. During the operational phase, mitigation mainly consist of active travel improvements within the site, to neighbouring streets and at key points of the network where improvements to infrastructure are required.
- 9.6.7. Highway capacity improvements are proposed to the School Lane exit onto Knowsley Lane, in the form of a signalised junction, and the provision of a right turn lane from Knowsley Lane into Stockbridge Lane.

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Conclusion

- 9.6.8. **Table 9.9** provides a summary of effects, mitigation and residual effects.
- 9.6.9. It can be concluded that, allowing for embedded mitigation, that there are no environmental reasons why the development should not be granted planning consent.

Table 9.9: Summary of Effects, Mitigation and Residual Effects

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation Enhancement Measures	Residual Effects
Construction								
All	Increased traffic including HGV's on all assessment criteria	Direct, temporary in the medium term	Not applicable	Not applicable	Local	Minor adverse	CEMP	Minor adverse (not significant)
Operation								
Residents and pedestrians	Severance of Communities	Direct, permanent	Minor	Negligible	Local	Negligible	Crossing facilities at key locations	Negligible (not significant)
Residents, local roads and strategic roads	Road Vehicle & Driver & Passenger Delay	Direct, permanent	Moderate	Minor	Local & Regional	Minor	Capacity improvements to School Lane/Knowsley Lane junction and Knowsley Lane/Stockbridge Lane	Minor adverse (not significant)

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Residents, pedestrians and cyclists	Non-Motorised User Delay	Direct, permanent	Moderate	Minor	Local	Minor	Crossing facilities at key locations	Minor adverse (not significant)
Residents, pedestrians and cyclists	Non-Motorised Amenity	Direct, permanent	Moderate	Negligible	Local	Negligible	N/A	Negligible (not significant)
Residents, pedestrians and cyclists	Fear & Intimidation	Direct, permanent	Moderate	Negligible	Local	Negligible	Crossing facilities at key locations	Negligible (not significant)
Local roads and strategic roads, residents, pedestrians and cyclists	Road User & Pedestrian Safety	Moderate	Negligible	Negligible	Local & Regional	Negligible	Highway infrastructure design to relevant standards	Negligible (not significant)
N/A	Hazardous/Large Loads					Negligible		Negligible (not significant)