



THE
ENVIRONMENT
PARTNERSHIP

Halsnead Farm, Halsnead Garden Village

Environmental Statement

Prepared For: Onward Homes Ltd and Starship Build Ltd

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Glossary

Term	Definition
AADT	Annual Average Daily Traffic
AAWT	Annual Average Weekly Traffic
Alternatives	The range of options examined including alternative locations, layout, design and construction phasing.
AONB	Area of Outstanding Natural Beauty. Now known as National Landscapes. Nationally protected and valued landscapes.
AQLV	Air Quality Limit Value. Legally binding concentration limit for specific air pollutants.
AQMA	Air Quality Management Area. An area where air quality objectives are not being met and air quality is monitored.
AQS	Air Quality Strategy
ASR	Annual Status Report
BAP	Biodiversity Action Plan
Baseline	The existing environmental conditions of a site or area upon which impacts are predicted against.
Biodiversity	The variety of forms of life, including genetic diversity, species diversity and ecosystem diversity.
BNG	Biodiversity Net Gain. A requirement that development should lead to a net positive effect for biodiversity, measured using habitat gained and lost.
CEMP	Construction Environmental Management Plan. A document prepared to help manage impacts during the clearance and construction phase of a development.
CIEEM	Chartered Institute of Ecology and Environmental Management
Cumulative Effects	Effects which arise from a combination or interaction of impacts at a specific location.
dB	Decibel. Measurement of sound intensity.
DCLG	Department for Communities and Local Government
Defra	Department of Environment Food and Rural Affairs
EcIA	Ecological Impact Assessment
EIA Regulations	Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Term	Definition
Environmental Effect	The effect on the environment of a specific impact, for example the impact of removing trees may have an effect on local wildlife.
Environmental Impact	An identified impact (adverse or beneficial) on the environment arising from a certain action, process or activity.
Environmental Impact Assessment (EIA)	A systematic procedure required under the European Directive 2014/52/EU in which involves the identification, prediction, evaluation, mitigation and management of impacts from a proposed development and its alternatives.
Environmental Statement (ES)	The document in which the findings of an EIA are presented to decision-makers and the public.
EPS	European Protected Species
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, Third Edition. Professional guidance published by the Landscape Institute in 2013.
HDV	Heavy Duty Vehicle
HER	Historic Environment Record
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
ISEP	Institute of Sustainability and Environmental Professionals. Formerly known as IEMA (Institute of Environmental Management and Assessment).
KMBC	Knowsley Metropolitan Borough Council
LGV	Light Goods Vehicle
Listed Buildings	Listing gives a building statutory protection against unauthorised demolition, alteration and extension. Grade I: buildings of outstanding or national architectural or historic interest. Grade II*: particularly significant buildings of more than local interest. Grade II: buildings of special architectural or historic interest.
LNR	Local Nature Reserve
LVIA	Landscape and Visual Impact Assessment

Term	Definition
Magnitude	A combination of the scale, extent and duration of an effect.
MEAS	Merseyside Environmental Advisory Service
Mitigation Hierarchy	The order of preference for mitigation measures. Avoid → Reduce → Restore → Compensate
Mitigation Measures	Measures that are applied to avoid, reduce, remedy or compensate for identified significant adverse impacts.
NDHA	Non-designated Heritage Asset
NERC	Natural Environment and Rural Communities Act (2006)
NHLE	National Heritage List for England
NNR	National Nature Reserve
Non-Technical Summary (NTS)	A summary of the ES in non-specialist language so that a large group of the public can understand the main likely significant environmental impacts of a proposal.
NPPF	National Planning Policy Framework. Sets out national policies for planning development to guide local authorities.
NPSE	Noise Policy Statement for England
Operational Effects	The effects on the environment resulting from the operation of the Proposed Development.
PM ₁₀	Particulate Matter smaller than 10 micrometres, an air pollutant.
PPG	Planning Practice Guidance
PRoW	Public Right of Way. A legally protected footpath, bridleway or byway.
Qualitative Data	Data relying on reasons behind various aspects of behaviour.
Quantitative Data	The systematic scientific investigation of countable properties and phenomena and their relationships
Residual Impacts / Effects	Those impacts / effects that would remain following the implementation of mitigation measures
SAC	Special Area of Conservation
SBI	Sites of Biological Importance

Term	Definition
Scoping	The process of identifying the issues that are to be addresses as part of the EIA, it is method used to ensure that an EIA focuses on the important issues, it is usually done in consultation with the determining authority and statutory consultees.
Screening	The process of determining whether an EIA is required.
Screening Opinion	Opinion issued by an LPA on whether the proposals are considered to constitute EIA development.
SEA	Strategic Environmental Assessment. A process for evaluating potential environmental impacts of proposed policies and plans.
Section 106 Agreements (s106)	Section 106 of the Town and Country Planning Act 1990 (as amended) allows the drafting of agreements (known and planning obligations) between and Council and developers.
Sensitivity	The degree of response of a receiver or instrument to a signal or a change.
Significance	The extent to which something matters. Significance of impacts is defined as substantial, moderate, minor or negligible.
SPA	Special Protection Area
SPD	Supplementary Planning Document
SRN	Strategic Road Network. Major motorways and A-roads.
SSSI	Site of Special Scientific Interest – national ecological and geological designation
Statutory Consultees	Organisations that the relevant determining authority is required to consult with in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, for example the Environment Agency and Natural England.
TEMPro	Trip End Model Presentation Program. Used for traffic growth forecasting.
Transport Assessment (TA)	Document submitted as part of a planning application that assesses the potential impacts of the proposed development on traffic and transport.

Term	Definition
TRICS	Trip Rate Information Computer System. Used to analyse and predict the number of trips from developments.
UK BAP	The United Kingdom Biodiversity Action Plan 1992-2012, published in 1994.
Verified Photomontage	A visual representation of a proposed development. Survey-verified photography involves using a surveyor to capture camera locations and relevant target points, which are recreated in a 3D model (Source: LI, 2018).
Visual Receptors	People that experience views of the Site or who are likely to experience views of the Proposed Development.
ZTV	Zone of Theoretical Visibility. Computer program used to suggest where a development might be visible from.

1.0 Introduction

Background

- 1.1 This Environmental Statement accompanies an application by Onward Homes Ltd and Starship Build Ltd for planning permission for the following description of development:

"Demolition of existing buildings and construction of up to 95 affordable homes, creation of access from Fox's Bank Lane, construction of internal roads and footways, landscaping, works to trees and associated works."

- 1.2 The total site area is 3.42 hectares.
- 1.3 It has been determined that the Proposed Development represents Environmental Impact Assessment (EIA) Development for which an Environmental Statement (ES) is required under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('EIA Regulations').
- 1.4 The application seeks consent for up to 95 affordable homes which will be accessed from Fox's Bank Lane to the east. Existing buildings on the Site will be demolished and infrastructure will be constructed including roads and footways and landscaping works.
- 1.5 A plan showing the location of the Site is included in Figure 1.1. The Site layout is shown in Figure 1.2. A description of the Site, its surroundings and the Proposed Development is included in Chapter 3.
- 1.6 This ES sets out the likely significant effects of the Proposed Development, as required under Schedule 4 of the EIA Regulations.
- 1.7 A range of guidance documents has been used in the preparation of the ES, in particular, for Chapter 2, EIA Approach and Methodology, and each of the environmental topic chapters 4 to 9. Where guidance has been used to inform the assessments, references are provided in the chapter.
- 1.8 This chapter (Chapter 1) of the ES provides an overview of the relevant legislation, the approach to screening and scoping and the purpose of this ES.

Purpose of this Document

- 1.9 This document is an Environmental Statement (ES) which reports the findings of the Environmental Impact Assessment (EIA) process that has been undertaken to inform the determination of the planning application. The ES identifies and evaluates the likely significant environmental effects (whether beneficial or adverse) that may occur as a result of the Proposed Development. Where appropriate, it

identifies measures to avoid, reduce and compensate for predicted significant adverse effects on the environment and maximise the potential beneficial effects.

Requirement for Environmental Impact Assessment (EIA)

Legislation

- 1.10 Environmental Impact Assessment (EIA) is a procedure required under the terms of the European Union Directive 2014/52/EU (previously 85/337/EEC as amended by 97/11/EC) on the assessment of the effects of certain public and private projects on the environment. Article 2 of the Directive requires that:

'Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.'

- 1.11 The EIA Regulations transposed this directive into UK legislation.
- 1.12 The EIA Regulations include Schedule 1 developments for which an EIA is mandatory and Schedule 2 developments for which an EIA may be required depending upon criteria including the nature and scale of potential environmental effects and the sensitivity of the receiving environment as set out in Schedule 3 of the EIA Regulations.

EIA Screening

- 1.13 The EIA Regulations set thresholds for screening development to determine whether it should be subject to EIA.
- 1.14 The Proposed Development falls within Category 10 (b) 'Urban development projects' of Schedule 2 of the EIA Regulations. For this type of development, the relevant EIA screening thresholds are the development including more than 150 dwellings or the overall development area exceeding 5 hectares.
- 1.15 The Proposed Development falls below the thresholds for screening development for EIA, it would therefore ordinarily not require EIA. However, the Supplementary Planning Document (SPD) for Halsnead Garden Village, adopted by Knowsley Council in 2017, states under Chapter 8 (Implementation and Delivery: Planning Application Requirements) that "Each applicant will need to prepare a detailed EIA for their red line boundary."
- 1.16 An EIA Screening Opinion from the Local Authority has therefore not been sought as set out under Regulation 6 of the EIA Regulations. Although, discussions with the Local Planning Authority (LPA) have confirmed that the requirements of the

Halsnead Garden Village SPD are applicable for this development and subsequently the SPD have been relied on to justify undertaking EIA for the scheme.

EIA Scoping

- 1.17 A scoping opinion as described under Part 4, Regulation 15 of the EIA Regulations has not been sought. There have however been discussions with the LPA regarding the general scope and content of the EIA. EIA Scoping is considered good practice to achieve an appropriate and proportionate EIA, but the process is not mandatory.
- 1.18 Given the size of the development, it has been agreed that the Environmental Statement should be kept concise. Succinct ES chapters have been prepared, with detailed information contained within the standalone technical assessments which can be appended to the ES.

Structure of this Document

Format of the Environmental Statement

- 1.19 The ES comprises two volumes, together with a Non-Technical Summary (NTS), which provides a summary of the impact assessments:
- Non-Technical Summary - this is presented as a separate document, with the text also included within the main volume of the ES.
 - Volume 1 - Environmental Statement. This document. It provides the main text (including all the technical impact assessment chapters) and associated figures.
 - Volume 2 - Appendices. Contains the appendices and supporting information to the Environmental Statement.
- 1.20 All the ES documents can be made available in hard copy and electronic (pdf) formats.

Environmental Statement Contents

- 1.21 This ES has been co-ordinated and produced by The Environment Partnership (TEP) together with an experienced team of technical specialists who have undertaken the impact assessments as set out in Table 1.1.

Table 1.1: Environmental Statement Structure

Chapter and Number	Lead Author	Appendix
Chapter 1 - Introduction	TEP	A
Chapter 2 - EIA Approach and Methodology	TEP	B

Chapter and Number	Lead Author	Appendix
Chapter 3 - The Proposed Development	TEP	C
Chapter 4 - Landscape and Visual Impact Assessment	Layer Studio	D
Chapter 5 - Biodiversity	Amenity Tree	E
Chapter 6 - Cultural Heritage	Lanpro	F
Chapter 7 - Air Quality	Redmore Environmental	G
Chapter 8 - Noise and Vibration	Hepworth Acoustics	H
Chapter 9 - Transport and Access	Curtins	I
Chapter 10 - Socio-Economics	Wisher Consulting	J
Chapter 11 - Summary of Impacts and Mitigation	TEP	K

Environmental Statement Availability

- 1.22 Electronic copies of the Environmental Statement and other documents related to the planning application can be viewed and downloaded from the Knowsley Council website: <https://www.knowsley.gov.uk/planning-and-development/planning-permission/view-planning-application>
- 1.23 Comments on the ES should be sent through the above Knowsley Council planning portal.

Further Copies of the Environmental Statement and Non-Technical Summary

- 1.24 Electronic (PDF) copies of the accompanying Non-Technical Summary (NTS) are available free of charge.
- 1.25 Hard copies of the ES can be purchased for £60 and electronic versions on USB are £5. For a copy of either the ES or NTS please contact TEP on the details below:

Table 1.2: TEP Contact Details

Address	Contact
The Environment Partnership (TEP) Ltd 401 Faraday Street Birchwood Park Warrington WA3 6GA	01925 844004 tep@tep.uk.com

Competent Expert

- 1.26 Regulation 18 (5) of EIA Regulations requires that Environmental Statements are prepared by a competent expert. This ES has been prepared by suitably qualified persons. The competent experts who prepared this Environmental Statement are listed in the below table (Table 1.2).

Table 1.3: Competent experts involved in the production of this Environmental Statement

Chapter	Competent Expert
Overall Coordination	Juan Murray BSc (Hons), MSc, MRTPI, PISEP, FRGS, Associate Director (Planning and EIA) Gareth Piatt BA (Hons), MSc, PISEP, Environmental Consultant
Landscape and Visual Impact Assessment	Simon Tugby, Director of Landscape Cath Lester, Landscape Architect
Biodiversity	Simon Brain, Managing Director
Cultural Heritage	Michael Horner, Historic Environment Consultant
Air Quality	Francine Chan BSc AMIEnvSc Emily Macey, Senior Air Quality Consultant
Noise and Vibration	James Shaw BSc MIOA
Transport and Access	Danny Jones MPlan MCIHT MRTPI
Socio-Economics	Darren Wisher BA, MA

- 1.27 The EIA Practitioner preparing this Environment Statement is a Chartered Member of the Royal Town Planning Institute (MRTPI), a Practitioner of the Institute of Sustainability Professionals (PISEP) and a Fellow of the Royal Geographical Society (FRGS). He holds a BSc (Hons) and MSc and has over 18 years' experience in Environmental Impact Assessment.
- 1.28 The Environment Partnership (TEP) is a Corporate Member of the Institute of Sustainability and Environmental Professionals (ISEP, formerly IEMA) and is a registered EIA Quality Mark Consultancy. The EIA Quality Mark demonstrates a commitment to excellence in our EIA activities and that this commitment is independently reviewed.

2.0 Approach to EIA and Methodology

Introduction

- 2.1 The overall aim of this ES is to provide a systematic account of the significant environmental effects of the Proposed Development. This chapter of the Environmental Statement (ES) sets out the methodology used in the preparation of the ES. The methodology applied specifically to each of the technical impact assessments is set out in the third section of each technical chapter.
- 2.2 This ES has been prepared to comply with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations').
- 2.3 The preparation, co-ordination and completion of the ES has been undertaken with reference to Schedule 4 of the EIA Regulations and the following recognised good practice guidance:
- IEMA (2004) Guidelines for Environmental Impact Assessment;
 - DCLG (2006) Environmental Impact Assessment: A Guide to Good Practice and Procedures – a consultation paper;
 - Institute of Environmental Management and Assessment (IEMA) (2011) EIA;
 - IEMA (2016) EIA Guide to Delivering Quality Development;
 - Quality Mark ES Review Criteria;
 - IEMA (2017) Delivering Proportionate EIA; and
 - Planning Practice Guidance - Environmental Impact Assessment, Department for Levelling Up, Housing and Communities, last updated in May 2020.
- 2.4 Technical assessments have been undertaken in accordance with best practice guidelines published by relevant professional bodies and identified within the individual chapters.

Content of the Environmental Statement

- 2.5 Schedule 4 of the EIA Regulations presents a list of information required for inclusion in Environmental Statements. Regulation 2(1) defines an Environmental Statement as a statement:

That includes such of the information referred to in Part 1 of Schedule 4 as is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but

b) That includes at least the information referred to in Part 2 of Schedule 4.

- 2.6 In accordance with UK EIA best practice, the ES will aim to include the information requirements set out in Schedule 4 - Information for inclusion in Environmental Statements. Table 2.1 shows where these information requirements have been included or addressed in this ES.

Table 2.1: Information for inclusion in the Environmental Statement

Schedule 4 Requirement	Where addressed in the ES
A description of the development comprising information on the site, physical characteristics of the development during construction and operation and an estimate of expected residues and emissions.	Chapter 3 presents information on the Site and the indicative development. This includes details relating to construction phasing.
An outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice including a comparison of environmental effects.	This will be included in Chapter 3 of the ES but limited to scheme design rather than alternative sites, as the site is allocated in the Local Plan.
A description of relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution without implementation of the development.	Technical chapters (Chapters 4-10).
A description of the factors of the environment likely to be significantly affected by the development, including, in particular:	The ES includes an assessment of the potential significant effects of the indicative development on the listed aspects in the following chapters:
Population and Human Health	Chapter 8 - Noise and Vibration. Chapter 9 - Transport and Access. Chapter 10 - Socio-economics
Biodiversity	Chapter 5 - Biodiversity
Land	Scoped out
Soil	Scoped out
Water	Scoped out
Air	Chapter 7 - Air Quality
Climate	Technical chapters (Chapters 4-10)
Material assets	Chapter 6 - Culture and Heritage

Schedule 4 Requirement	Where addressed in the ES
Cultural Heritage	Chapter 6 - Culture and Heritage
Landscape	Chapter 4 - Landscape and Visual Impact Assessment
Interaction of the above factors	Technical chapters (Chapters 4-10)
A description of the likely significant effects of the development on the environment which should cover the direct effects and any indirect, secondary, cumulative, transboundary, short, medium and long-term, permanent and temporary, positive and negative effects.	Chapters 4-10 assess the potential significant effects of the Proposed Development.
A description of the measures used to identify and assess the significant effects on the environment including an outline of the difficulties encountered in compiling information.	Chapters 4-10 outline the assessment methods used in each respective topic chapter. General difficulties relating to the undertaking of the EIA are included in Chapter 2. Technical difficulties relating to the assessment of particular aspects of the developments are included in the technical chapters (Chapters 4-10).
An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information.	General difficulties relating to the undertaking of the EIA are included in Chapter 2. Technical difficulties relating to the assessment of particular aspects of the developments are included in the technical chapters (Chapters 4-10).
A description of the measures envisaged to avoid, prevent, reduce or, if possible offset any identified significant adverse effects on the environment and any proposed monitoring	Mitigation measures are presented in the fifth section of each of the technical chapters (Chapters 4-10).
A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents/and or disasters which are relevant to the project.	Risks of major accidents and/or disasters are included in each of the technical chapters (Chapters 4-10) where relevant.

Schedule 4 Requirement	Where addressed in the ES
A non-technical summary of the information provided under paragraphs 1 to 9.	A separate non-technical summary is provided.

Scope of the Environmental Impact Assessment

- 2.7 Scoping is not a mandatory requirement of the EIA Regulations but is seen as good practice. The purpose of scoping is to ensure that environmental studies undertaken during the preparation of the ES provide all the relevant information on the likely significant environmental effects of the project and the potentially significant impacts are 'scoped in' for consideration. Scoping ensures a proportionate approach to EIA.
- 2.8 A scoping opinion as described under Part 4, Regulation 15 of the EIA Regulations has not been sought. There have however been discussions with the Council regarding the general scope of the EIA and what topics the LPA deem appropriate for inclusion within the ES.
- 2.9 Given the size of the development, it has been agreed that the Environmental Statement should be kept concise. Succinct ES chapters have been prepared, with detailed information contained within the standalone technical assessments which can be appended to the ES.
- 2.10 The scope of the ES has been informed by the following:
- Discussion with the Local Planning Authority;
 - Schedule 4 of the EIA Regulations;
 - Further consultation undertaken as part of the EIA; and
 - Previous technical assessments of the Site.
- 2.11 A summary of the EIA technical scope is shown in Table 2.2. Further information regarding consultation and the scope of the technical assessment work is included in the technical chapters.

Table 2.2: Summary of EIA scope and ES content

ES Chapter	Summary of Scope	Lead Author
Chapter 1 - Introduction	■ Requirement for EIA and the purpose of the ES; ■ Application description; ■ Structure of the ES; ■ ES availability	TEP

ES Chapter	Summary of Scope	Lead Author
Chapter 2 – EIA Approach and Methodology	■ Content of the ESA; ■ Scope of the EIA; ■ Consultations; and ■ EIA methodology.	TEP
Chapter 3 – Proposed Development	■ The Site; ■ Site surroundings; ■ Outline of the main alternatives; ■ Description of the Proposed Development; and ■ Anticipated timescales for construction and operation.	TEP
Chapter 4 – Landscape and Visual Impact Assessment	■ Assessment of impacts on Landscape and Visual receptors	Layer Studio
Chapter 5 – Biodiversity	■ Assessment of impacts on ecological receptors	Amenity Tree
Chapter 6 – Cultural Heritage	■ Assessment of impacts on culture and heritage assets and archaeology.	Lanpro
Chapter 7 – Air Quality	■ Assessment of impacts on air quality.	Redmore Environmental
Chapter 8 – Noise and Vibration	■ Assessment of impacts on noise sensitive receptors.	Hepworth Acoustics
Chapter 9 – Transport and Access	■ Assessment of impacts on the local highway network.	Curtins
Chapter 10 – Socio-Economics	■ Assessment of the socio-economic impacts of the development.	Wisher Consulting
Chapter 11 – Summary of Impacts and Mitigation	■ Summary of Impacts; ■ Summary of Mitigation Measures; and ■ Delivery of Mitigation Measures.	TEP

Spatial Scope

- 2.12 The EIA directly covers the physical extent of the Site as defined in the red line boundary plans.
- 2.13 The geographical or spatial scope of the ES considers the following factors:
- The physical extent of the Proposed Development which is defined on the planning application boundary plans; and
 - The nature of the baseline environment.
- 2.14 It is important to note that the influence of predicted impacts can extend beyond the immediate site boundary so it is important to put the spatial extent of the predicted impacts into the context of the Site and the nature of their effects. The study area or spatial scope for each technical assessment is defined and stated in the methodology section of each chapter. For example, cultural heritage will be limited to the Site and the immediate surroundings whereas transport will assess impacts on the local highway network.
- 2.15 The study area or spatial scope for each technical assessment is defined and stated in the methodology section of each chapter, but due to the nature of the Site the spatial scope is generally restricted to Site and local level.

Temporal Scope

- 2.16 The EIA assesses the likely significant environmental effects during the site preparation, construction and operational phases of the Proposed Development.
- 2.17 Following the determination of the planning application, the development is expected to commence in April 2026. The construction period is expected to last 91 weeks. Measures to control construction impacts will be outlined in a Construction Environmental Management Plan (CEMP).
- 2.18 Anticipated timescales for each phase of works for the construction of the Proposed Development that have been used within this ES are shown in Table 2.3. Specific detail relating to the temporal scope for each technical assessment is defined and stated in the methodology section of each of the technical chapters.

Table 2.3 Development Timescales

Works	Duration
Construction	91 weeks from April 2026 - January 2028
Operation	January 2028 onwards. Long-term operation

Assessment of Effects

- 2.19 The evaluation of significance is usually undertaken by comparing the magnitude of the predicted impact with the sensitivity of the receiving environment. Specialist methods of assessment will be presented in the relevant assessment chapters. The general method for the presentation of environmental impacts across all specialist topic areas is outlined below.
- 2.20 Best practice guidance has been used for individual chapters where available and appropriate. A full method of approach is set out in each Chapter, however a general principle for the presentation of environmental impacts has been adopted to ensure consistency in the evaluation of significance across all specialist topic areas.

Determining the Significance of Environmental Impacts

- 2.21 The purpose of the ES is to identify and evaluate the environmental effects associated with the Proposed Development. These effects are then assessed based on the predicted magnitude of each effect (following mitigation) and the associated sensitivity of the receiving environment or environment. This determines the significance of their impact.
- 2.22 The magnitude of the impact and the sensitivity of the receptor vary by topic. Therefore, the criteria used to predict the significance of impacts arising are set out in the methodology section of each of the technical assessment chapters.
- 2.23 There is no statutory definition of significance. In this ES the following descriptive terms are used and these are accepted good practice:
- Substantial;
 - Moderate;
 - Minor;
 - Negligible.
- 2.24 The meanings of the terms in relation to magnitude and sensitivity are shown below (Table 2.4).
- 2.25 There may be some divergence from the below method and terms in individual technical chapters due to the differing recommendations of subject specific professional guidance. Where deviations from the below have been made, this is explained in the chapter methodology.

Table 2.4: Significance Matrix

		Sensitivity of receptor			
		Negligible	Low	Moderate	High

		Sensitivity of receptor			
Magnitude of impact	Negligible	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Minor	Minor to moderate	Moderate
	Moderate	Negligible	Minor to moderate	Moderate	Substantial
	High	Negligible	Moderate	Substantial	Substantial

2.26 A range of different factors will be included in the evaluation of the significance of each effect, including:

- The topic author/assessor's knowledge and experience of significance evaluation from previous assessments;
- Details of the development proposal, such as construction and operational activities, and the nature of the effect associated with such activity;
- Details about the environmental sensitivity of the area that will be affected;
- Feedback from scoping and consultation; and
- The wider legal and policy context.

Sensitivity of Receptor

2.27 During the determination of the baseline environment, 'receptors' are identified. The value or sensitivity of a receptor or resource is generally defined as a function of factors such as rarity, fragility, replaceability and importance (e.g. whether it is of national, regional or local importance) and its capacity to absorb change.

2.28 Criteria for the determination of sensitivity (very high, high, medium, or low) or of importance or value (international, national, regional or local) are established based on guidance, legislation, statutory designation and/or professional judgment.

2.29 The following criteria provide a general definition for determining the sensitivity of receptors and specific sensitivity criteria will be explained in each specialist topic chapter.

- High sensitivity - the receptor has little or no ability to absorb change without fundamentally altering its present character or is of very high environmental value or of international importance (e.g. special qualities of a Special Protection Area or National Park) or is of high environmental value or of national importance (e.g. special qualities of a Site of Special Scientific Interest or Area of Outstanding Natural Beauty (AONBs));

- Moderate sensitivity - the receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance e.g. special qualities of a regionally important geological site;
- Low sensitivity - the receptor is tolerant of change without detriment to its character, is of low environmental value, or local importance e.g. qualities of a hedgerow or industrial areas; and
- Negligible sensitivity - the receptor is resistant to change or is of little environmental value.

Magnitude of Effect

- 2.30 Magnitude is determined by predicting the scale of any potential change in the baseline conditions. The magnitude of potential effects (both beneficial and adverse) on the relevant receptor in the environmental baseline will be identified through consideration of the following:
- The degree to which the environment is potentially affected e.g. 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 e.g. whether it is temporary or permanent; and
 - The reversibility of the effect.
- 2.31 The following criteria provide a general definition for determining the magnitude of a particular effect:
- High magnitude - total loss or major alteration to key elements or features of the baseline conditions to the extent that post-development character or composition of baseline conditions will be fundamentally changed;
 - Moderate magnitude - loss or alteration to one or more key elements or features of the baseline conditions to the extent that post-development character or composition of the baseline conditions will be materially changed;
 - Low magnitude - minor shift away from baseline conditions. Changes arising will be detectable but not material; the underlying character or composition of the baseline conditions will be similar to the pre-development situation; and
 - Negligible magnitude - very little change from baseline conditions. Change is barely distinguishable, approximating to a 'no change' situation.

Mitigation of Environmental Impacts

- 2.32 The development of mitigation measures is an integral part of EIA. Mitigation measures seek to avoid, reduce or compensate adverse effects and reduce the

magnitude of potential impacts. These may include design changes, alteration of proposed methods, or other activities in addition to the core activities.

- 2.33 The level of effect significance is often used to determine the use and level of mitigation measures. Where a potential impact is assessed as 'moderate' or 'substantial' this is considered 'significant' in EIA terms, so as far as practicable, mitigation measures should be identified that reduce the potential magnitude or significance of effect.
- 2.34 In each technical chapter, the specialists undertaking the EIA have identified appropriate mitigation measures based on their assessment of potential significant impacts.

Residual Effects

- 2.35 The overall significance of effects will take into account the identified mitigation measures and consider the residual effects of the Proposed Development after any specific additional mitigation measures have been implemented and established.

Cumulative Impacts

- 2.36 Cumulative effects are those caused by combined effects of past, present or reasonably foreseeable activities and the Proposed Development itself. The EIA will consider other existing and planned development (currently within the planning system) potentially within influencing area of the Proposed Development and will consider the cumulative impacts associated with these developments.
- 2.37 These planned developments have been identified through a planning search of the area local to the Proposed Development.
- 2.38 Table 2.4 identifies the applications that have been considered as part of the cumulative assessment due to their potential to impact upon the Proposed Development. All the applications are for large developments within potentially influencing distance of the Application Site and have recently been approved or are currently within the planning system awaiting a decision.
- 2.39 Projects have been scoped out from further assessment where they are of insufficient scale and nature for them to contribute to significant cumulative effects. Cumulative impacts caused by different aspects of the development are assessed within the technical chapters.

Table 2.5: Cumulative Assessment

Reference	Address/Location	Description	Distance From Proposed Development	Status
25/00013/FUL	Halewood Wines and Spirits Factory Outlet, The Sovereign Distillery, Wilson Road, Huyton	Variation of conditions 2, 8 & 11 attached to planning permission 24/00218/FUL (variation of condition 2 attached to planning permission 22/00109/FUL (demolition of buildings and the erection of 2 no. industrial units together with the part demolition/part extension and remodelling of existing industrial building to form 7 no. units (use classes E (G)(ii) (iii), B2 and B8) with ancillary office space. Reconfiguration of car parking (including service and vehicular circulation areas) to allow for the extension of the existing service yard and car parking areas to the side and rear of unit G2. Amendments to the north elevation of the unit to relocate the fire exit door and add a larger operational door together with amendments to materials and landscaping and erection of 2.4m high paladin fencing and an additional section of 2m high acoustic fencing.	1.7km west	Approved (09/05/2025)

Reference	Address/Location	Description	Distance From Proposed Development	Status
24/00211/FUL	Fox's Bank, Halsnead Garden Village, Land West of Fox's Bank Lane and North of M62, Whiston, Knowsley, L35 3SS	Variation of conditions to allow new solar panels to the roof of a number of plots, changes and rebuilding of the boundary wall along Fox's Bank Lane, new fencing adjacent to snape gate barn and other minor alterations and changes to delivery timescales. Variation of the following conditions: 2 (approved plans), 3 (phasing plan), 4 (arboricultural statement), 5 (fox's clump method statement), 6 (CEMP), 7 (bat mitigation), 8 (noise attenuation), 9 (acoustic fence method statement), 10 (boundary treatments), 13 (suds), 14 (flood risk), 16 (management/maintenance), 17 (method statement), 20 (hard landscaping scheme), 21 (soft landscaping scheme), 23 (LEMP), 27 (ped/cycle link), 48 (pedestrian crossing) and 52 (road connections) of planning application 20/00417/FUL and removal of condition 30 (RSA) of planning application 20/00417/FUL - residential development comprising of the erection of 350 no. dwellings together with the construction of vehicular access off Fox's Bank Lane (comprising signalised junction), SuDS ponds, landscaping, boundary treatments and other associated works (including demolition of existing farm buildings).	0.1km north	Approved (19/08/2025)

Reference	Address/Location	Description	Distance From Proposed Development	Status
23/02782/FUL	Sovereign Industrial Park, Wilson Road, Huyton	Erection of 1no. retail unit (use class E(A)) with external display area and car parking and servicing arrangements. Partial demolition, reconfiguration and refurbishment of existing employment building to create 3no. industrial/warehouse buildings with ancillary offices (use classes E(G)(iii), B2 and B8) with servicing and car parking; retention and amendment of existing site accesses along with internal estate roads; 2no. substations; landscaping; and associated works.	1.6km west	Approved (31/07/2025)

Reference	Address/Location	Description	Distance From Proposed Development	Status
23/02755/FUL	Land to south of Lickers Lane, Windy Arbor Road, Halsnead Garden Village	Variation of conditions: 3 (approved plans condition); 13 (utility buildings and compounds condition); 15 (wildlife information pack condition); 17 (travel plan condition); 19 (EV charging points condition); 24 (east to west vehicular route provision, Lickers Lane Land Parcel); 25 (Eastern Highways Connection, Lickers Lane Land Parcel); 27 (highways connection condition, Windy Arbor Road Parcel) to allow the outline planning permission to be brought forward in two (or more) reserved matters applications rather than one reserved matters application for the whole site. This S73 varies planning application 20/00399/OUT (outline application for proposed residential development of up to 277 dwellings (use class C3) and an apartment development of up to 100 units for over 55s together with new vehicular access to Lickers Lane and Windy Arbor Road, landscaping and associated works, approval sought for access with all other matters reserved).	0.5km north	Approved (06/02/2024)
22/00587/FUL	Land to the north of Cronton Road and south of the M62, Cronton	Erection of 1 no. commercial unit (use class B8) with ancillary offices and outbuildings together with access works, landscaping, service yard, car parking, servicing and other associated works.	0.6km west	Approved (18/03/2025)

Reference	Address/Location	Description	Distance From Proposed Development	Status
22/00233/FUL	Dye House, Liverpool Road, Prescot	Demolition of existing building and redevelopment of land at Dye House, Prescot, to erect up to 45 residential units (to include a mix of houses and apartments) with associated infrastructure and landscaping (access to be taken from the existing development to the northeast).	3.5km north	Approved (04/10/2024)
22/00213/REM	Land north of M62 Motorway off Windy Arbor Road (Halsnead), Whiston, Knowsley, L35 1RB	Reserved matters application pursuant to planning permission 18/00283/HYB for the erection of 208 no. Dwellings and associated works - approval sought for appearance, landscaping, layout and scale.	0.9km north	Approved (10/05/2023)

Reference	Address/Location	Description	Distance From Proposed Development	Status
20/00494/HYB	Former Site of Cronton Colliery, Cronton Road, Halshead Garden Village, Knowsley, L35	Hybrid planning application comprising: full application for the development of 161,900 sq ft (15,041 sq m) (GIA) of storage and distribution floorspace (use class B8), including ancillary offices (use class B1), security gatehouse, site access road, engineering earthworks to form a part country park, public car park to serve country park, and associated works; and outline application with details of point of access (details of part-access, landscaping, appearance, scale and layout are reserved) for the development of up to 838,100 sq ft (77,862 sq m) (GIA) of storage and distribution floorspace (use class B8), with ancillary offices and light industrial (use class B1); engineering earthworks to form country park and drainage attenuation ponds; pedestrian/cycle/equestrian route connecting existing M62 footbridge with proposed country park; and associated works.	Adjacent to west	Approved (04/03/2022)
20/00329/FUL	Land at Windy Arbor Brow, Whiston	Erection of a residential development of 43 no. dwellings comprising 14 no. apartments and 29 no. houses together with access, car parking and associated development (demolition of existing barn).	1.1km west	Approved (08/12/2021)

EIA Assumptions and Limitations

- 2.40 The following key assumptions have been made in preparing the ES:
- This ES assumes that the Proposed Development would be constructed in accordance with industry standard techniques according to acceptable standards, assuming that suitable experienced contractors will be appointed to construct the Proposed Development
 - A Construction Environmental Management Plan (CEMP) would be prepared prior to commencement and would contain all the design and additional mitigation as identified and reported within this ES.

Difficulties in Compiling Information

- 2.41 Where relevant, each individual chapter identifies where difficulties or limitations in compiling or gathering data have been experienced.

3.0 Project Description

Introduction

3.1 This chapter provides a description of the existing site and the Proposed Development. In accordance with the requirements of Schedule 4 of the EIA Regulations (2017) and UK best practice guidance, the following information is provided:

- A description of the site and surroundings;
- An outline of the main alternatives to the Proposed Development, indicating the reasons for the choice, taking into account the environmental effects;
- The design and size of the Proposed Development during construction and operation and how this has been influenced through the EIA process; and
- Anticipated timescales for construction and operation.

The Site and Local Context

Site Surroundings

- 3.2 The Site is to the south of the M62, approximately 1km to the east of Junction 6. It is immediately to the west of Fox's Bank Lane.
- 3.3 The site is generally set within agricultural land between Widnes (2km to the south) and Whiston (1km north). Huyton, on the eastern edge of the Liverpool conurbation, is around 1.3km to the west.
- 3.4 Warehousing development is currently under construction immediately to the south of the Site, on the site of the former Cronton Colliery.
- 3.5 There are six Grade II Listed Buildings located within a 1km radius of the Site, the nearest is the Grade II Listed 'Old Halshead' which is around 50m from the western boundary of the Site, separated by a dense tree belt.
- 3.6 There are no nationally or internationally designated ecological or landscape sites within 5km of the Site.
- 3.7 There is Greenbelt land (Tarbock) to the east of the site and the neighbouring 'Fox's Bank Lane'.
- 3.8 Although immediately to the south of the M62, there are no Air Quality Management Areas (AQMAS) near the Site, the closest is approximately 3km to the west.

Description of the Site

- 3.9 The Site covers a 3.42 hectare area currently containing buildings associated with Halsnead Farm, including a large farmhouse (in the south-east) and agricultural sheds (in the north-east). There are areas of hardstanding surrounding the agricultural buildings.
- 3.10 A dense tree belt runs along the northern site boundary, screening the Site from the adjacent motorway. An access track runs along the southern edge of the tree belt. There is also dense woodland planting on the eastern, southern and western boundaries of the Site, ensuring limited visibility.
- 3.11 The remainder of the site comprises two agricultural fields divided by a single fence. The fields are in pastoral use.
- 3.12 An overhead electricity line runs along the northern edge of the Site, with two pylons situated in the site.
- 3.13 The site is classed as a sustainable urban extension, as an Employment and Country Park, with two policies connected to the site (LP-SUE2c and LP-SEU1).
- 3.14 The Environment Agency's Flood Map for Planning shows that the Site is in Flood Zone 1 and therefore at low risk of flooding from rivers and the sea. There is only a small area of surface water flood risk in the north-east of the Site, which corresponds to an area of hardstanding. There is an unnamed main river approximately 50m to the east of the Site.
- 3.15 There are no statutory designations in relation to biodiversity, landscape or the historic environment on the Site.
- 3.16 According to the Knowsley Council Local Plan Policies Map, the Site is within the 'Land South of M62' Core Strategy designation, which covers 77.28 hectares and is expected to deliver employment development and a country park. The Site is to be developed alongside the 'South of Whiston Sustainable Urban Extension', immediately to the north. Planning policy states that a Supplementary Planning Document will be adopted to identify the specific development and infrastructure requirements for this 'Halsnead Garden Village' Site.
- 3.17 The Halsnead Garden Village Masterplan Supplementary Planning Document (SPD) was adopted in June 2017. Although most housing at Halsnead Garden Village will be to the north of the M62, the Framework Masterplan presented in the SPD identifies an area of potential additional residential development to the south of the M62, corresponding to the proposed Site.
- 3.18 The Site is not currently subject to public access.

Project Need

- 3.19 The Proposed Development is intended to meet demand for affordable housing in Knowsley. The scheme would consist entirely of affordable housing. It is anticipated that the scheme would be roughly one third social rent, one third rent to buy and one third shared ownership, catering to a range of needs.
- 3.20 A mix of apartments and housings from one to four bedrooms would be delivered on the Site, ensuring a range of affordable housing options for a range of social groups.
- 3.21 The Proposed Development would be delivered as part of the wider Halsnead Garden Village development, which will provide a significant boost to housing and employment in the borough while also improving access to nature. The Proposed Development would contribute to Halsnead Garden Village's affordable housing provision, which has an overall target of 25% affordable housing.

Consultation

- 3.22 The Proposed Development has been discussed at length with neighbours directly affected. There have been discussions with Tritax, The Land Trust and National Highways, whose land would be used to access the Site.
- 3.23 Wider neighbour consultation has also taken place and there has been a presentation to local councillors.
- 3.24 A consultation leaflet was delivered to surrounding addresses. The leaflet explained the design vision, environmental considerations, access, construction, walking and cycling provision and public transport accessibility. The leaflet encouraged nearby residents to engage in the consultation process and submit their thoughts on the proposals during the two week consultation period (24th October - 7th November 2025).
- 3.25 Specific engagement has also taken place with the owner of the adjacent listed building to ensure that the landscape design provides sufficient screening to protect the setting of the building.

Alternatives

- 3.26 Paragraph 2 of Schedule 4 of the EIA Regulations requires the Applicant to provide details of the main alternatives considered. This chapter considers the following options:
- Alternative approaches and designs for the Proposed Development; and
 - The 'do nothing' alternative where the Proposed Development is not progressed.

- 3.27 Alternative locations have not been considered as the site is allocated for development in the local plan. The site has been shown to be viable and Strategic Environmental Assessment has been carried out.

Alternative Approaches and Designs

- 3.28 The design of the Proposed Development has evolved through several iterations to reach the most appropriate and environmentally sensitive development for the Site.
- 3.29 Initially, a scheme was considered for large executive homes; in this scheme the Site would have delivered approximately 35 dwellings. It was found that the market did not support this due to the location and Site constraints such as the nearby motorway and overhead lines.
- 3.30 Iterations of the design have been considered ranging from 80 to 91 homes. These iterations have had a detrimental impact through various factors. These have included: encroachment on root protection areas, overlooking, proximity to a nearby listed building and extending outside the development zone.
- 3.31 The design which has been taken forward seeks to strike a balance between economic viability, delivering a mix of housing and managing the many and varied constraints on the Site. The Proposed Development aims to deliver an environmentally and financially sustainable neighbourhood with low cost, low carbon, energy efficient housing. The Proposed Development delivers a viable scheme while ensuring that significant environmental effects are avoided and minimised through mitigation embedded in the design wherever possible.

The 'Do Nothing' Alternative

- 3.32 The Site is allocated for development in the adopted Knowsley Local Plan and will be developed during the plan period.
- 3.33 Under Policy CS3 (Housing Supply, Delivery and Distribution), the Knowsley Local Plan states that provision will be made for 8,100 new dwellings between 2010 and 2028, at an annual average of 450 dwellings per annum. This is a minimum net figure. The proposed Site forms part of Knowsley's housing provision for the plan period and housing must therefore be delivered for Knowsley Council to achieve its housing targets. The 'do nothing' alternative is therefore not appropriate.
- 3.34 The Proposed Development would deliver 100% affordable housing, helping to address the crisis in housing affordability.
- 3.35 The Site is deliverable with no major infrastructure requirements, such as major highway development works.

- 3.36 The design of the Proposed Development includes embedded mitigation measures including visual screening from the motorway and nearby heritage assets. The development can be delivered without causing significant environmental impacts.

Conclusions on Alternatives

- 3.37 As has been shown above, alternative options have been considered for the Proposed Development. The chosen location, design and approach have been determined to be the most appropriate way forward.
- 3.38 Alternatives have been considered throughout the design process. An iterative approach has been taken which seeks to take account of and respond to the potential environmental effects and nearby sensitive receptors while delivering a high quality and viable scheme.

Description of the Proposed Development

- 3.39 The Proposed Development is for up to 95 residential dwellings including 1- and 2-bed apartments and 2-, 3- and 4-bed houses. The development be laid out with several cul-de-sacs coming off one main arterial road running east to west through the centre of the Site.
- 3.40 Development would be set away from the M62 to the north, with tree planting along the northern edge of the development, further screening views. There would be a landscaped area between the dense tree belt to the north of the Site, screening the M62 and the northern developed edge. This would function as amenity open space, with pathways running through it.
- 3.41 Street trees would be planted along the southern edge of the main arterial road as well as to the front of dwellings.
- 3.42 Vehicle access to the site would be from Fox's Bank Lane, which runs along the eastern boundary.
- 3.43 The Proposed Development has been designed as in the form of a series of agricultural style must streets and courtyards. Dwellings along the main spine road are generally three storey semi-detached houses in red brick with areas of dark timber cladding. There are two storey dwellings elsewhere in the design, away from the spine road. The two-storey units in the courtyards are predominantly clad in black timber with varied expanses of brickwork.
- 3.44 Off-road parking would be available for all dwellings.

Parameters for the Proposed Development

- 3.45 Figure 1.1 illustrates the Site boundary for the purposes of the planning application, within which all development will take place at both the construction and operational phases.
- 3.46 The total site area is 3.42 hectares.
- 3.47 A maximum of 95 dwellings would be delivered on the Site, across a mixture of houses and apartments.
- 3.48 The maximum height would be three storeys.
- 3.49 It is anticipated that construction would commence in April 2026. The construction period is programmed to last 91 weeks, completing in January 2028.
- 3.50 The following chapters provide a detailed assessment of the effects of the preferred project design on the environment and the identification of mitigation measures which would minimise effects during construction and operation of the project.

4.0 Landscape and Visual Impact Assessment

Introduction

- 4.1 This chapter of the ES has been prepared by Layer.studio to assess the likely landscape and visual impacts of The Proposed Development upon the Site and surrounding area. This chapter also describes the methods used to assess these impacts, the existing baseline conditions, the proposed mitigation measures required to prevent, reduce or offset any significant negative impacts and the likely residual impacts after these methods have been adopted.
- 4.2 This Chapter is accompanied by the following appendices:
- Appendix D1: Methodology and Criteria Tables
 - Appendix D2: Viewpoints
 - Appendix D3: Figures
- 4.3 The authors of this chapter having the following qualifications and experience.

Table 4.1 Chapter Author Details

Details	Lead Author	Reviewer
Name	Cath Lester	Simon Tugby
Company	Layer.studio	Layer.studio
Qualifications/Accreditations relevant to technical area incl. IEMA	BA (Hons), PgDip Landscape Architecture. Chartered Member of the Landscape Institute	BA (Hons), PgDip Landscape Architecture. Chartered Member of the Landscape Institute
Years technical experience (in technical area)	20+ years	20+ years
Number of EIAs delivered to date	30+ TVIA/LVIAs, of which 5% were part of EIA	10+

Legislation, Policy and Guidance

- 4.4 Relevant legislation, policies and guidance have been reviewed to understand the context for development and establish the baseline landscape. An understanding of policy requirements supports the iterative design process and can feed into the evolution of strategies for mitigation, if required.

The European Landscape Convention

- 4.5 The European Landscape Convention provides a foundation for closer co-operation on landscape issues across Europe and was ratified in the UK on the 21st November 2006, and became binding on 1st March 2007. The convention identifies the need to recognise landscape in law; to develop and promote landscape policies dedicated to the protection, management and creation of landscapes; and to establish procedures for the participation of the general public and other stakeholders in the evolution and implementation of landscape policies. It also encourages the integration of landscape into all relevant areas of policy, including cultural, economic and social policies.
- 4.6 The ELC defines landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’. It recognises that landscape has important cultural, ecological, environmental and social dimensions and is a key element of achieving sustainable development. In paragraph 2.5 GLVIA3 notes that the definition above applies to “the landscape of villages, towns and cities (townscapes)”.

National Planning Policy Framework (2024)

- 4.7 The National Planning Policy Framework sets out the Government’s planning policies for England and how these should be applied. In ensuring the planning system contributes to achieving sustainable development paragraph 9 of the Framework states that “Planning policies and decisions should play an active role in guiding development towards sustainable solutions but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area”.

Halsnead Garden Village Masterplan (2017)

- 4.8 This supplementary planning document sets out the vision for the area and presents a masterplan based upon Garden Village principles and guides development, with a focus on the natural and historic assets of the site. The site is located in the southern half of the masterplan area.

Assessment Methodology

- 4.9 The following scenarios are tested in this report:
1. Baseline
 2. Baseline + Proposed Development
 3. Baseline + Proposed Development + Cumulative
- 4.10 The study area has been derived through data analysis involving:
- Review of existing landscape character studies and policy;

- Review of planning designations around The Site;
- Identification of transit corridors, cycling routes and public rights of way;
- Exploration into topography, settlement and environmental designations.

Source of Effect

- 4.11 The Proposed Development results in a change of land use from agricultural to residential. Although well documented by the approved Halsnead Garden Village Masterplan, this may have an impact on visual receptors (people) who observe the change, such as a resident or user of the highway and path network including pedestrians, cyclists or motorists.

Significance Criteria

- 4.12 As recognised by GLVIA3, the effects of The Proposed Development have been examined in terms of:
- Effects on the landscape: Meaning the assessment of the potential effects of development upon the physical nature and features of the landscape as well as landscape character and quality; and
 - Effects on visual amenity: Examined through a selection of representative viewpoints to demonstrate the experience of different types of visual receptor.
- 4.13 The assessment provides a series of tables setting out the criteria and definitions used to assist in assessing the landscape and visual effects and to make the process as transparent as possible. These can be found in Appendix D1 but for ease of reference, the Significance of Landscape or Visual Effects Matrix is extracted and included below as Table 4.2.

Table 4.2 Significance of Townscape or Visual Effects

		Sensitivity		
		Low	Medium	High
Magnitude	Negligible	Negligible/minor	Minor	Minor/moderate
	Minor	Minor	Minor/moderate	Moderate
	Moderate	Minor/moderate	Moderate	Moderate/major
	High	Moderate	Moderate/major	Major
	Substantial	Moderate/major	Major	Substantial

- 4.14 Ultimately, however, the assessment relies on professional judgement and the tables and matrices utilised are a tool to assist in this process. Through experience, Layer.studio have determined that the author should not consider the effects of a proposed development in isolation based solely on their own judgement, but instead debate the extent of effects as part of an open forum with colleagues. This

promotes well rounded decision making in terms of assessing the impact on landscape character and visual receptors.

- 4.15 The main objectives of the LVIA are to:
- Identify and describe the current landscape of the study area;
 - Determine the sensitivity of the landscape and identify potential effects;
 - Identify potential visual receptors to The Proposed Development;
 - Evaluate the degree of change and the sensitivity to the type of changes proposed;
 - Identify likely adverse or beneficial landscape and visual effects;
 - Identify likely significant landscape and visual effects distinguishing between those that are temporary or permanent, short, medium or long term;
 - Consider how any adverse effects may be mitigated; and
 - Consider any remaining residual effects
- 4.16 To achieve these objectives, the assessment is undertaken in three key stages consisting of:
- A thorough desktop study covering an overview of the relevant planning policy context from European, national to local level, plus a more detailed review of the topography and surrounding features to determine the potential visibility of The Proposed Development. The establishment of baseline landscape and visual conditions including any changes likely to occur independently of The Proposed Development, as well as determining the value attached to the different resources.
 - Initial desktop findings are then tested in the field to further understand the receiving landscape and to reassess the effect upon visual receptors from viewpoints.
 - The assessment is then undertaken to determine the potential landscape and visual effects of The Proposed Development. The assessment considers impacts during construction and on completion, once operational. Residual effects consider the effects post completion with mitigation in place.
- 4.17 The LVIA has been completed as part of an iterative design process with a team of multi-disciplinary professionals. This has included the consideration of mitigation measures to avoid and reduce where possible, any adverse landscape or visual effects resulting from The Proposed Development.
- 4.18 A comprehensive methodology is set out within Appendix D1.

Limitations and Assumptions

- 4.19 Photos are taken in November 2025 from publicly accessible locations. Additional photography was taken as part of a separate report considering views to and from the listed Old Halsnead.
- 4.20 Viewpoints are representative. They have been selected to represent the experience of different types of visual receptor as documenting every viewpoint is unfeasible.
- 4.21 Photography is taken in autumn when trees have dropped most of their leaves. The assessment commentary therefore describes how views may change throughout the seasons as the screening properties of vegetation fluctuates.
- 4.22 The assessment follows industry best practice guidance. Where subjective judgments are required, they are discussed between the author and other qualified professionals to cross check approach and outcome. This prevents working in isolation and makes for well-considered, robust reporting.

Baseline Conditions

- 4.23 This section describes receptors that could be impacted by The Proposed Development and should be read in conjunction with Appendix D1, where judgements on value and susceptibility are also noted.
- 4.24 The Site is broadly rectangular and is located between Knowsley and Widnes in an area that encompasses mixed land use including agricultural fields, woodland (often used for recreation), leisure uses such as Blundells Hill Golf Club, logistics warehouses and residential uses both long established and recently built. In terms of published landscape character, The Site is within National Character Area 56: Lancashire Coal Measures and historically identified in the Halsnead Estate Character Area by the Landscape Character Assessment of Knowsley Metropolitan Borough (2007).
- 4.25 More specifically, The Site comprises fields and structures associated with Halsnead Farm, bounded to the north by the M62 motorway, to the east by Fox's Bank Lane and to the south and west by a lane that serves Halsnead Villas and the listed Old Halsnead.
- 4.26 There are no ecological designations close to The Site.
- 4.27 From a heritage perspective the grade II listed Old Halsnead is located beyond the south west corner of The Site. There are three further listings to the north east of The Site, namely Barn at Snape Gate and North East Lodge (and gate piers) to Halsnead Park, however, the presence of the M62 means the setting of these assets is not influenced by The Site.

- 4.28 Landscape receptors for consideration through the LVIA are
- Mature vegetation. Some trees are remnant woodland of the former Halsnead Hall Estate. Importance is limited to the local context so value is low.
 - Agricultural fields, of low value
 - The setting of Grade II Listed Old Halsnead. Listing is of local importance only so value is low.

- 4.29 Given that these receptors are of local importance only, these receptors are all low value.

Visual amenity

- 4.30 Located in close proximity to The Site are residents of Fox's Bank Lane including the grade II listed Old Halsnead. The wider residential setting is evolving as Halsnead Garden Village is delivered, meaning that the former settlement edge of Knowsley has moved south. Within semi-rural areas between The Site and Widnes, isolated farmsteads and properties are commonplace.
- 4.31 There are limited public rights of way in the vicinity of The Site. To the east, route CR/1/1 meets Fox's Bank Lane close to the M62 motorway. Route CR/3/1 passes through fields further east.
- 4.32 The road network is dominated by the presence of the M62 motorway which passes alongside the northern boundary of The Site before it meets the M57 at an interchange junction further west. An important local A road is Cronton Road (A5080) which links this interchange to Widnes. Fox's Bank Road provides a north-south connection to Knowsley.
- 4.33 Visual receptors for consideration through the LVIA are residents of homes along Fox's Bank Lane including Old Halsnead, users of local footpaths and motorists on the local road network. As illustrated in Appendix D2, this report therefore includes four viewpoints that pick up these receptors. More distant viewpoints were discounted because they sit outside the Zone of Theoretical Visibility. This is predominantly because The Site is visually contained by mature vegetation.

Viewpoint 1: Fox's Bank Lane, below motorway bridge, looking south

- 4.34 Taken from below an M62 road bridge, this view looks south along Fox's Bank Lane. The foreground is dominated by the concrete columns and overhead planks of the bridge with the sun illuminating the road as it continues into the mid distance. From this position it is tricky to pick out detail within the mid distance but the entrance to Halsnead Farm is evidenced by a blue sign to the centre right of view. Beyond this, highway speed signage demarcates the approach to a cluster of residential properties and recreational sites along Fox's Bank Lane. The view is backdropped by mature trees, preventing a visual connection to the far distance.
-

- 4.35 Owing to the prominence of road bridge infrastructure as a detracting feature, the view is of low value.

Viewpoint 2: Footpath CR/1/1 looking west

- 4.36 Looking west from public right of way CR/1/1, this viewpoint is located at similar elevation to The Site. The track (Shaw Entry) and adjoining field are prominent features within the foreground, with the M62 coming into view on the far right. A line of mature trees prevents clear views of the motorway and a timber post and rail fence keep pedestrians on the path. Topography falls away from the camera to a low point when it reaches Fox's Bank Lane. Mature vegetation in the mid distance restricts visibility to the far distance but the upper corner of Yodel (Symmetry Park) can be seen above trees to the centre left of view. Centrally, tree cover is less dense meaning that the fields and buildings of Halsnead Farm are partially visible. A pylon rises above the farm and draws the eye.

- 4.37 The view has only local importance and includes detracting features such as the motorway and pylon. Value is low.

Viewpoint 3: Fox's Bank Lane, close to proposed site entrance, looking north

- 4.38 Positioned close to The Site access, this view looks north along Fox's Bank Lane. The Site flanks the left side of view, with a field and boundary fence to the far right. The mid distance is defined by the M62 which cuts across the view at elevated level as it crosses over Fox's Bank Lane. Trees planted along the motorway embankment filter views of passing vehicles and along with the landform, prevent views to the far distance.

- 4.39 The view has only local importance and includes detracting features such as the motorway and moving vehicles. Value is low.

Viewpoint 4: Fox's Bank Lane, from access to private road, looking north

- 4.40 Located further south than viewpoint 3, this view is also taken from Fox's Bank Lane. In the foreground, the gated access to the private road serving Old Halsnead and other properties is visible. This is backdropped by mature trees, which at this time of year are not in leaf and so filtered views of Halsnead Farm house are possible. The remainder of the view follows the vista down Fox's Bank Lane towards the M62 bridge.

- 4.41 The view is of only local importance and is therefore low value.

Assessment of Environmental Impacts

- 4.42 This section identifies the likely significant landscape and visual effects (adverse or beneficial) resulting from The Proposed Development. The effect on each receptor is described below and is based on the following expected activities:
- 4.43 During the construction phase:
- Site clearance and demolition
 - Erection of site hoardings to site perimeter
 - The coming and going of construction traffic
 - Lighting to enable work to continue after dark
 - Construction of new homes and infrastructure such as roads
- 4.44 Once development is complete and the site operational:
- Change of land use to residential

Landscape

Mature vegetation

- 4.45 Mature trees are located to the periphery of The Site, both inside and outside the applicant's ownership boundary. Trees to the north, south and west will not be impacted by Proposed Development but a group to the east will be felled to facilitate construction. Trees for removal are not part of the remnant woodland historically associated with Halsnead Hall Estate. The loss of green amenity fronting Fox's Bank Lane will be mitigated by the planting of new trees that better tie in with new homes. Across the wider site, new trees are planted to reinforce the buffer of vegetation with adjoining properties which subsequently strengthens and diversifies green infrastructure through the development.
- 4.46 Susceptibility is low as the majority of trees are not impacted by the proposal. Resulting sensitivity is low.
- 4.47 Magnitude of change is low as only a small number of mature trees are affected and new planting will mean that vegetation is reinstated along this boundary longer term. Resulting significance of effect is Minor and deemed positive as new green infrastructure will reinforce and complement existing.

Agricultural fields

- 4.48 Proposed Development will mean a wholesale change of land use to residential and the permanent loss of agricultural fields. Susceptibility is therefore high and the resulting sensitivity is medium.

- 4.49 Development is however in accordance with an approved masterplan for Halsnead Garden Village whereby residential use is proposed on this land. Magnitude of change against the baseline position is high and so resulting significance of effect of moderate - major. On the basis that use is advocated through planning policy, nature of effect is neutral

The setting of Grade II Listed Old Halsnead

- 4.50 The listed building is located approximately 50m from The Site, physically separated by mature trees belonging to Old Halsnead. This creates a sense of enclosure and means the setting of the building associates more greatly to the immediate garden, rather than the wider landscape that incorporates the fields of Halsnead Farm. Owing to proximity and change of land use, susceptibility to change is medium. The receptor has some ability to accommodate change so long as the change is managed and considerate. The resulting sensitivity is low/medium.
- 4.51 Magnitude of change is minor because it would slightly affect the character of the receptor. New tree planting will strengthen the buffer of vegetation between The Site and Old Halsnead, thus reinforcing the sense of enclosure and limiting the influence of residential land use on the listed building. The significance of effect is minor - minor/moderate, reducing to minor as trees mature and they become a more effective screen. The nature of effect is neutral.

Visual

Viewpoint 1: Fox's Bank Lane, below motorway bridge, looking south

- 4.52 People experiencing this view will be motorists who pass by transiently. The view therefore has low susceptibility to change. The Proposed Development will be partially visible to the centre right of the mid distance. New homes are set back from Fox's Bank Lane but may just come into view above the reformed stone boundary wall. Similarly, the road openings to the two points of access will also come into view. Resulting sensitivity is low.
- 4.53 Magnitude of change is minor because it occurs in the mid distance beyond the motorway bridge which is the main focus of the view. Significance is minor and neutral.

Viewpoint 2: Footpath CR/1/1 looking west

- 4.54 Susceptibility to change is medium. Although a public right of way, attention is not focused on The Site. Resulting sensitivity is minor/moderate. The felling of trees along Fox's Bank Lane will open up views of the field behind and mean that proposed housing is clearly visible central to the mid distance. In time, new trees will partially screen buildings.

- 4.55 Magnitude of change is moderate as the development will be clearly visible at a similar elevation to the viewer. Significance is moderate but this will reduce to minor as trees mature and provide a more effective screen. The nature of effect is neutral because of the established presence of detracting features in the baseline view.

Viewpoint 3: Fox's Bank Lane, close to proposed site entrance, looking north

- 4.56 People experiencing this view will be motorists who pass by transiently. The view therefore has low susceptibility to change. Sensitivity is therefore low.
- 4.57 The Proposed Development will frame the far left of view, with the proposed boundary wall, road opening and properties just visible. Magnitude of change is low as it is on the edge of a view where the focus tends to be straight ahead along the length of the existing highway. Significance is minor with the nature of effect deemed neutral.

Viewpoint 4: Fox's Bank Lane, from access to private road, looking north

- 4.58 People experiencing this view will be motorists who pass by transiently. The view therefore has low susceptibility to change. Sensitivity is therefore low.
- 4.59 New homes will be partially visible beyond mature trees in the foreground. Looking along Fox's Bank Lane, some properties will front the highway and in addition to new road openings, give the impression of residential use. Although only partially visible the magnitude of change takes up a large proportion of the view and so magnitude of change is moderate. Significance is therefore minor/moderate. As newly planted vegetation matures, it will provide more effective screening, thus reducing the significance to minor. Nature of effect is neutral.

Mitigation Measures

- 4.60 The assessment considers the following mitigation measures that have been embedded into the design of the Site masterplan.
- Comprehensive soft landscape strategy to diversify site wide green infrastructure.
 - Tree planting along The Site's western boundary to strengthen the green interface with Old Halsnead. To minimise light spill, footpaths in this area are not illuminated.
 - Tree planting along the boundary with Fox's Bank Lane to mitigate felling required to facilitate development.
 - Reuse of stone to recreate boundary wall along Fox's Bank Lane.
 - Alignment of site entrance to create space for soft landscape and present amenity onto the public highway.

- To minimise light spill, lighting columns to new roads will be directional and point away from existing residential neighbours.

Residual Effects

- 4.61 For the most part, mitigation measures overcome impacts caused by The Proposed Development. It is however impossible to mitigate for the loss of agricultural fields resulting from the change of land use to residential. It is however noted that this type of development aligns with the masterplan for Halsnead Garden Village.

Cumulative Effects

- 4.62 As documented, the Proposed Development is well contained by mature vegetation and where trees are to be felled alongside Fox's Bank Road, new tree planting will, over time, mitigate the loss. This green infrastructure means that connections with the wider landscape and locations are limited. The majority of projects for consideration as part of cumulative assessment do not present concern.
- 4.63 In terms of landscape receptors, the setting of Old Halsnead may be cumulatively impacted when the Proposed Development is considered in combination with the development of Symmetry Park (original hybrid application ref 20/00494/HYB). More specifically, construction of unit 2 will mean that Old Halsnead is surrounded by built form. Retention of existing trees and the planting of new, play an important role in maintaining the green infrastructure that contributes to the setting of the listed building.

Summary

- 4.64 The report has considered landscape and visual receptors that may be affected by The Proposed Development.

Landscape

- 4.65 There will be a minor (positive) significance of effect on mature vegetation. Some localised felling to the eastern boundary will be mitigated with new trees so that longer term, the green infrastructure network is enhanced and provides a more robust boundary with the listed Old Halsnead. There will be a minor to minor/moderate (neutral) significance of effect on the setting of this listed building, reducing to minor (neutral) as new trees grow and fill out. The loss of agricultural fields is permanent and cannot be mitigated. The proposed change of land use is however in accordance with what is proposed as part of the Halsnead Garden Village Masterplan.

Visual

- 4.66 A series of viewpoints have been used to assess the effect on visual receptors. Local topography and the presence of mature vegetation, motorway embankments and recent building of Halsnead Garden Village means that long distance views of The Site are not possible. Viewpoints are located close to The Site on the road and path network.
- 4.67 Long term, significance of effect from all viewpoints is minor (neutral). In the instance of viewpoint 2 (footpath CR/1/1) and viewpoint 4 (Fox's Bank Lane, from access to private road), significance is greater immediately after construction. As newly planted vegetation matures and fills out, the effectiveness as a visual screen increases so significance decreases.

5.0 Biodiversity

Introduction

- 5.1 This chapter has been prepared by Simon Brain, Managing Director of Amenity Tree. Simon Brain (Managing Director) has attained a Post Graduate Certificate in Biological Recording and has attended FSC Field Courses for Land mammals, Songbird identification, Barn Owls (CIEEM) and Advanced Bird Survey Techniques (Level M). He has twenty years' experience in ecology work. He has accumulated over 450 hours of bat contact time and holds an NE Class 2 license (70619:OTH:CSAB:2016). He has attended courses for trees and bats, bat survey techniques, mitigation and handling and attended seven European workshops and holds FISC level 3.
- 5.2 This chapter sets out the existing ecological baseline and an assessment of likely ecological effects associated with the proposed development.
- 5.3 The area covered within this assessment includes land within the site location plan, and adjacent areas where relevant.
- 5.4 The aims are to consider and assess the significance of any ecological effects resulting from the proposed development, and to present mitigation and compensation measures where appropriate.
- 5.5 This chapter has been informed by the following information and survey work. The survey reports provided as part of the submission provide the more detailed assessment.
 - Desk-based research
 - Consultation with relevant bodies including MEAS
 - Adjacent planning applications
 - Local Plan and Halsnead SPD
 - Arboricultural and Ecological field surveys
 - Extended Phase One Habitat Survey (Preliminary Ecological Appraisal) Version One. 29.01.2025
 - Preliminary Roost Feature Inspection and Report. 12.05.2025
 - Bat Surveys Report Version One. 24.08.2025
 - Assessment of Biodiversity Baseline Version 1 29.01.2025
 - Full Assessment of Biodiversity
 - Bat mitigation statement
 - Tree Survey and Constraints Report 07.07.2025

- Arboricultural Impact Assessment 06.11.2025

5.6 In preparing this chapter we can confirm the best practice set out in the Chartered Institute of Ecology and Environmental Management's (CIEEM) 'Guidelines for Ecological Impact Assessment: Terrestrial, Freshwater and Coastal' (Sep 2018, updated April 2022) have been followed.

Legislation, Policy and Guidance

5.7 From a legislative perspective the following are relevant:

- Environment Act 2021
 - Establishes legally binding targets for air, water, waste, and biodiversity.
 - Requires 10% Biodiversity Net Gain (BNG) for most developments.
 - Mandates species abundance targets to halt biodiversity decline by 2030.
 - Embeds environmental principles into policymaking and planning.
- Conservation of Habitats and Species Regulations 2017 (as amended)
 - Protects European Protected Species (e.g. bats, otters, great crested newts).
 - Safeguards Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).
 - Requires Appropriate Assessment under Regulation 61 for plans/projects likely to affect European sites.
 - Creates a UK National Site Network.
- Wildlife and Countryside Act 1981 (as amended)
 - Protects wild birds, animals, and plants (e.g. nesting birds, reptiles, amphibians).
 - Regulates non-native invasive species (e.g. Himalayan balsam).
 - Enables designation of SSSIs and National Nature Reserves (NNRs).
 - Key sections include: wild birds; wild animals; wild plants; and invasive species.
- Natural Environment and Rural Communities (NERC) Act 2006
 - Places a biodiversity duty on public bodies to conserve and enhance biodiversity.
 - Section 41 lists Species and Habitats of Principal Importance (942 species in England).
- Protection of Badgers Act 1992

- Makes it illegal to kill, injure, or disturb badgers or their setts without a licence.
- Applies to developers, landowners, and contractors.
- **Wild Mammals (Protection) Act 1996**
 - Prohibits acts causing unnecessary suffering to wild mammals (e.g. mutilation, drowning).
- **Hedgerow Regulations 1997**
 - Protects Important Hedgerows (typically >30 years old, ecologically or historically significant).
 - Requires notification to the Local Planning Authority before removal.
- **Weeds Act 1959**
 - Allows government to serve notice requiring control of injurious weeds (e.g. ragwort, thistles).
 - Aims to prevent spread on agricultural land.
- **Environmental Protection Act 1990**
 - Governs controlled waste, pollution, and statutory nuisances.
 - Soil or plant material contaminated with invasive species may be classified as controlled waste.

UK Biodiversity Action Plan

- 5.8 The UK Biodiversity Action Plan (UK BAP) was published in 1994, and was the UK Government's response to the Convention on Biological Diversity (CBD), which the UK signed up to in 1992 in Rio de Janeiro. The CBD called for the development and enforcement of national strategies and associated action plans to identify, conserve and protect existing biological diversity, and to enhance it wherever possible. The UK BAP has been superseded by devolved country conservation policy responses.

North Merseyside Biodiversity Action Plan

- 5.9 The Plan comprises 44 habitat and species action plans; each one describing the current status of the habitat or species, issues affecting its well-being, conservation objectives & targets and actions to meet them.

Birds of Conservation Concern 5

- 5.10 The latest review was published in December 2021, as Birds of Conservation Concern 5 (BOCC5). This updates the last assessment in 2015. Using standardised criteria, experts from a range of bird NGOs, including BTO, assessed 245 species

with breeding, passage or wintering populations in the UK and assigned each to the Red, Amber or Green Lists of conservation concern.

5.11 Key policies at the national level are contained within Chapter 15 of the NPPF (2024).

- Planning should minimise impacts on biodiversity and deliver net gains, contributing to the Government's goal to halt biodiversity decline.
- Development should preserve, restore, and re-create priority habitats and ecological networks, and support the recovery of priority species.
- If significant harm to biodiversity cannot be avoided, mitigated, or compensated, planning permission should be refused.
- Local plans and decisions must support coherent ecological networks that are resilient to future pressures.

5.12 Locally, the relevant policies are contained within the Knowsley Local Plan Core Strategy (2016–2028) and saved policies within the UDP.

- Policy CS2: Development Principles: Principle 4: Recognise environmental limits and protect/enhance biodiversity and habitats, including impacts on nationally/internationally important sites.
- Policy CS8: Green Infrastructure:
 - Protect and enhance designated sites, priority habitats, and protected species.
 - Promote wildlife movement through strategic green links and open spaces.
 - Integrate biodiversity into new development and public realm design.
 - Require mitigation or compensation for unavoidable biodiversity loss.
 - Avoid and mitigate adverse effects on internationally important wildlife sites, including: Mersey Estuary SPA/Ramsar, Ribble & Alt Estuaries SPA/Ramsar, Liverpool Bay SPA, Sefton Coast SAC, Dee Estuary SPA/SAC/Ramsar and Martin Mere SPA/Ramsar
- Policy CS13: South Prescot Regeneration Area: Support redevelopment that includes public realm and Green Infrastructure improvements, especially extending green links and connections.
- Policy CS21: Greenspaces and Trees: Encourage retention of existing trees, woodland, and habitats. Promote native planting and habitat features for biodiversity. Require replacement of lost trees at a 2:1 ratio, considering species and size.

- Policy SUE2c: Sustainable Urban Extensions – Land South of M62: Development must deliver Public Open Space within a wider Green Infrastructure network. Integration with existing recreational assets and ecological areas, including the Whiston to Cronton strategic green link is important.
- 5.13 Local policies are supplemented by guidance within the relevant sections of the Halsnead Garden Village SPD. Relevant to this chapter is the Halsnead Masterplan SPD Strategic Environmental Assessment which informed the SPD and considered the potential impacts.

Assessment Methodology

- 5.14 This application has been supported with pre application discussions. A formal scoping exercise was not undertaken, with the scope being clearly identified in adjacent schemes. Our approach reflects the scope accepted by the Council for those studies.

Desk-based research

- 5.15 A desktop study in the first instance is informed by
- Defra websites and information (magic maps)

Cumulative Impact Assessment

- 5.16 The following sites were assessed as agreed with the Local Planning Authority to determine the cumulative effects in combination with the site proposals.
- Review of Halsnead Garden Village Masterplan SPD
 - Halsnead Masterplan SPD Strategic Environmental Assessment Environmental Report.
 - Table 5.1 Projects for Consideration in Cumulative Assessment as detailed below.

Table 5.1 Projects for consideration in Cumulative Assessment

Potential Cumulative Project	Summary of Ecological Information	Potential for Cumulative Effects
25/00013/FUL	The extended phase 1 habitat survey states that all buildings and trees on site have negligible potential to support protected species and a biodiversity enhancement scheme was approved.	No ecological or biodiversity impacts were anticipated as a result of the development. The site is a small scale industrial

Potential Cumulative Project	Summary of Ecological Information	Potential for Cumulative Effects
		development located 1.7km to the west. No likely cumulative effects identified.
24/00211/FUL	The ES chapter concludes that, the application site incorporating the proposed mitigation methods would result in one significant negative impact on a local level on Skylark but all other features with implementation of the proposed mitigation would be subject to no significant effect, or significant beneficial effects resulting in an overall net increase in biodiversity with medium to long term significant benefits which would result in an overall net increase to biodiversity.	Overall medium to long term significant benefits with a net increase in biodiversity. No likely cumulative effects identified.
23/02782/FUL	No ES provided. An approved Biodiversity Net Gain assessment securing a 19.63% enhancement in habitat units and a woodland management plan and LEMP was approved. Merseyside Environmental Advisory Service raised no objections subject to planning conditions for RAMS for priority species, lighting scheme and ecology provision for bat boxes to be integrated into the approved development.	No likely cumulative effects identified.
23/02755/FUL	The ES concludes, the proposed development will not have an adverse impact on Local Wildlife Sites. This particularly applies to LWS located outside of influencing distance from the proposals but also because many of the habitat types within the LWS are either static planting (woodland for example) or in the case of Wetland/pond habitat as	Approved BNG enhancements secured, woodland management plan with enhancements and impacts on local sites identified. No likely cumulative effects identified.

Potential Cumulative Project	Summary of Ecological Information	Potential for Cumulative Effects
	they are not linked to the proposal by way of watercourse. Potential adverse impacts that have been identified to LWS are in the main from those areas of woodland located on the site or immediately adjacent to the site, namely Lickers Lane and Sandfield Park Woodlands. The table above lists those measures which are required to mitigate adverse impacts on these LWS during and post the development of the proposed.	
22/00587/FUL	The ES chapter concludes that, in summary, the significance of effects identified in the September 2022 ES and the March 2023 ES Addendum remain unchanged. There would be an increased level of tree loss as a result of this design change, but this is not considered to affect the previous findings in the ES'. The 2022 ES concludes, in the long term, no significant adverse effects are anticipated. In the cumulative effects assessment, no new effects have been identified which would change the significance of effects associated with the proposed development in isolation.	No likely cumulative effects identified.
22/00233/FUL	No ES, A Shadow HRA assessment was undertaken and concluded, after considering all potential direct and indirect impacts of the proposed development and consideration of appropriate mitigation, it is concluded that the works will not significantly impact on the Mersey Estuary SPA and Ramsar. Therefore, it is not considered necessary to progress to Stage 3 of the HRA assessment and that this screening	No likely cumulative effects identified.

Potential Cumulative Project	Summary of Ecological Information	Potential for Cumulative Effects
	assessment and appropriate assessment is sufficient to rule out impacts of the proposed development on the European sites within the UK at this stage. 8.1.2. Therefore, if the proposed mitigation procedures are implemented, the development, alone or accumulated with surrounding works, will not likely result in a likely significant effect on designated site	
22/0213/REM	No ES available to review. The RM approval and Ecology section concluded, Subject to the conditions and having regard to the conditions on the hybrid consent that relate to this part of the development, it is considered that the proposal complies with policy CS8 of the Local Plan Core Strategy, the Halsnead Masterplan SPD and the NPPF. No significant negative biodiversity impacts identified.	No likely cumulative effects identified.
20/00494/HYB	The approved ES concludes. overall, the proposed development complies with local and national planning policies, has been designed to avoid, minimise of offset its adverse environmental effects and will generate significant benefits for local people, particularly in relation to the delivery of a country park and new employment opportunities. From the point of view of the predicted environmental effects, there is no clear reason why planning permission should not be granted.	No likely cumulative effects identified.
20/00329/FUL	No ES available, a SHRA assessment for the approved scheme concluded that identified there will be no adverse impacts on potential effects on European designated and local sites subject to an information pack being	No likely cumulative effects identified.

Potential Cumulative Project	Summary of Ecological Information	Potential for Cumulative Effects
	distributed to new residents is secured via planning condition.	
P/2025/0143/FUL	Not available to view online	Not possible to review cumulative effects.

Baseline Data

- The Initial Site Walk Over was undertaken in December 2025 which indicates urban habitats, woodland (off site) and modified grassland. The habitats on site are all a low distinctiveness grade of habitat which shall be mitigated, retained and enhanced through the full BNG assessment.
- Study area focussed on the Site Location Plan. The site is bound by the M62 to the North, Fox's Bank Lane to the East and the Tritax Symmetry employment land to the south. This means the site is contained from an ecological and Arboricultural perspective. Areas of study are limited to those immediately adjacent to the site, capturing adjacent vegetation.

Assessment of Ecological Features

- The Chartered Institute of Ecology and Environmental Management's (CIEEM) 'Guidelines for Ecological Impact Assessment: Terrestrial, Freshwater and Coastal' (Sep 2018, updated April 2022 section 2.28 states that Ecologists undertaking EcIAs should determine whether an ecological feature within the zone of influence of a development should be 'scoped out' (excluded) and justify the reasons for doing so. Features can be scoped out of the assessment at this stage because they are not important enough to warrant further consideration or because they will not be significantly affected. Where impacts on a feature are uncertain the feature should be 'scoped-in' (included) for more detailed assessment.

Limitations and Assumptions

- The bat mitigation report is being finalised, and an update will be provided.
- Currently it is considered that the information available is sufficient to enable potential impacts to be effectively considered.

Baseline Conditions and overview of habitats and species

Designated Nature Conservation Sites

- 5.17 The site is located within SSSI Impact Risk Zone for The Mersey Estuary SSSI / Ramsar site which is located 5825m south of site. The types of development

reviewed by Natural England for SSSI and Ramsar sites include, infrastructure, wind and solar, air pollution, combustion, waste or discharge. Residential developments are not included and Natural England would not need to be consulted for the proposed development.

- 5.18 Clinton Wood Local Nature Reserve (LNR) is located 3800m south of site.

Plants and Habitats - Section 41 woodland

- 5.19 There are section 41 habitats listed on the inventory on the site. Woodland is located immediately adjacent to the southern boundary. In one area the designation is within the red line boundary, but the habitats are retained and subject to special measure areas/ tree protection measures into site. The inserts below show the designation position as reported by Magic maps.



Figure 5.1 Area designated as woodland

- 5.20 The excerpt below indicates the S41 (SE) woodland will be retained (refer to AIA)

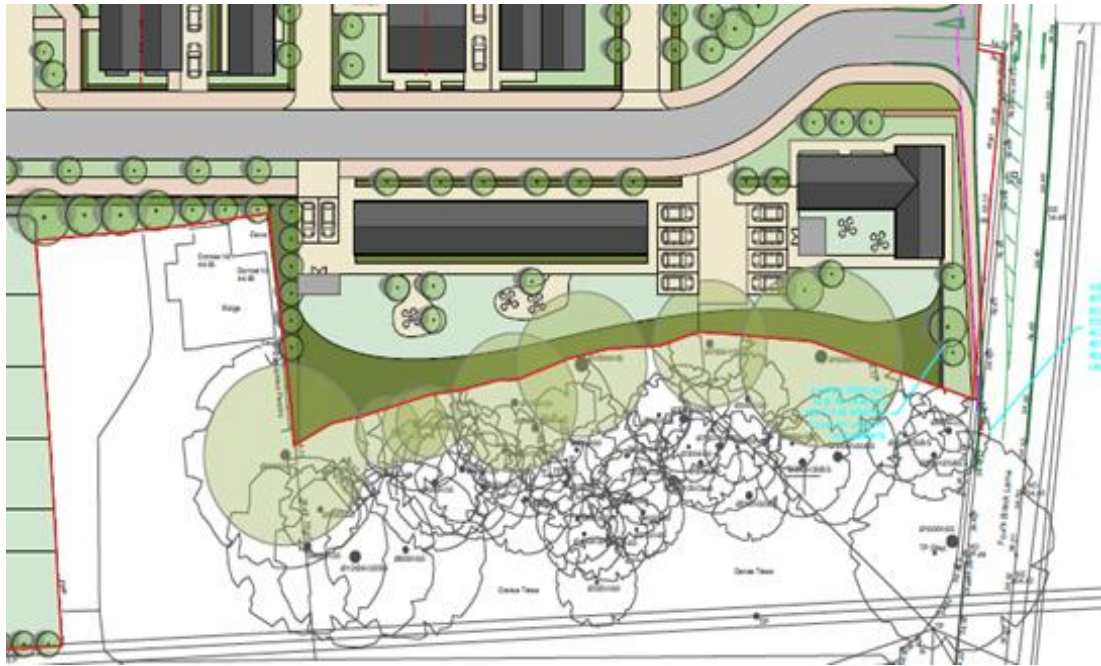


Figure 5.2 Woodland to be retained

- 5.21 In addition, S41 woodland is also present on the south west boundary as shown below, which remains unaffected.



Figure 5.3 Unaffected woodland

Protected Species – Bats

- 5.22 The Preliminary Roost Feature Inspection and Report 12.05.2025 indicated.

“In section 5.0: Evidence of bat (segmented droppings, feeding remains and possible urine staining on the battens) was found in the farmhouse. The Farmhouse is therefore a confirmed bat roost. Building 1 is a low potential building, a single

emergence survey required. Building 2 is a moderate potential due to the number of PRF that were found during survey. Building 1 is a derelict farmhouse located to the north of the section 41 woodland adjacent to the eastern boundary of site. Building 2 is an agricultural barn located on the northern boundary, both properties are accessed via Fox's Bank Lane".

- 5.23 The Bat Surveys Report Version One. 24.08.2025 reported.

"No bats emerged from B1 or B2. Farmhouse. 24.07.2025 (Visit 2 from 3). A single Soprano pipistrelle bat was observed to emerge at wall-top height near the Security Camera on the Eastern face of the House".

- 5.24 In summary.

"Low numbers (1no.) of common species of bat (C.Pip) were found to be roosting in the external roost features of the Farmhouse building. As a result, measures are required to mitigate the effects of development on bats to determine a planning application and there is a requirement for an EPS license (derogation or low impact) from Natural England in this instance".

- 5.25 A Bat Mitigation report will support the application. It will be a condition of development that the scheme obtains a suitable EPS bat mitigation license to allow lawful demolition and re-erection of the bat roost.

Protected species - Badger

- 5.26 No evidence of these species was found but a pre start check shall be made to ensure no badger activity has developed since this walkover survey due to the proximity of the adjacent woodland.

Other protected species

- 5.27 The PEA does not recommend further surveys for water vole, avian, amphibian, vascular plant or reptile species and these species can be reasonably discounted.

Valued Ecological Receptors

- 5.28 The principal specific ecosystem components that are considered important due to their conservation status are

- Bat roost identified in the existing farmhouse
- Presence of NERC Act Section 41 woodland on southern boundary

- 5.29 This proposal is one of the later/last parts of the Urban Village and hence we benefit from the ability to review reports and assessments of recent decisions in the vicinity, to understand the level of impacts considered relevant to this assessment.

- 5.30 As such we are comfortable with the study area being limited to the site and its immediate environs, with no notable overlap with other proposals, albeit the opportunities to connect and enhance with wider corridors have been considered and are integral to the design (dealt with in other chapter/parts of this submission).

Assessment of Environmental Impacts

- 5.31 The likely significant environmental impacts of the proposed development on this topic are
- The Bat roost identified in the existing farmhouse
 - Presence of NERC Act Section 41 woodland on southern boundary
- 5.32 The direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development are discussed below.
- The bat roost is a low number of common species and shall be mitigated within the development, the details of which shall be confirmed in a bat mitigation report. The short-term impacts are the opportunity to demolish and recreate new bat roosting facilities in new structures, which shall increase the numbers of artificial roosting provision within the new scheme. In accordance with Table 3.2 of the BCT Bat Survey Guidelines, Assessing the importance of roosts* this site is a non-breeding day roost (conservation status / distribution) and is important at the site / local level because the roost types are widespread in all / many geographies. It will be a condition of development that the scheme obtains a suitable EPS bat mitigation license to allow lawful demolition and re-erection of the bat roost.
- *Reference; Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.*
- Therefore, there shall be an increase in the roost sites available to bat species on the site in the long term.
 - Secondary impacts from development such as light spill onto roosting areas and foraging on the southern boundary can be managed using a bat sympathetic lighting plan to ensure no longer term residual effects on this species apply.
 - Presence of NERC Act Section 41 woodland on southern boundary. This habitat is protected but is all unaffected and retained within the scheme. Secondary construction impacts include indirect impacts such as pollution. This can be managed by a Construction Environmental Management Plan (CEMP) that can manage site specific proposals for silt (including silt fencing) dust, and waste management.

- 5.33 Because of the management proposals, impacts on the ecological receptors are not considered to be significant overall as they can be either mitigated and / or protected for short-, medium- and long-term objectives.

Mitigation Measures

- 5.34 The mitigation hierarchy is a sequential process to reduce negative impacts on biodiversity from development, prioritising actions from most to least effective: avoid, minimise, restore, and offset. The hierarchy should be applied to avoid environmental impacts and only consider compensation when all other opportunities have been explored.
- 5.35 Amenity Tree have been part of the core team from the start of the project working to identify development parcels and a layout that avoids ecological and Arboricultural impacts and looks for opportunities for enhancements. For example design has been managed to retain S41 woodland following early identification of ecological constraints and valued features.
- 5.36 Biodiversity advice relevant to the mandatory net gain of 10% had identified impacts on S41 woodland which has led to a redesign to avoid direct impact on S41 woodland. Therefore, avoidance of impact was established early in the design process for this ecological feature. The landscape design is seeking to plant additional urban trees across site but particularly the SW boundary with S41 woodland, therefore an ecological connection / buffer will be present in the longer term that shall be formed by tree planting. The application will achieve 14.6% biodiversity net gain by on site proposals.
- 5.37 Bat mitigation will be confirmed in a Bat Mitigation report. Low numbers (1no.) of common species of bat (C.Pip) were found to be roosting in the external roost features of the Farmhouse building. As a result, measures are required to mitigate the effects of development on bats. These measures will comprise a net increase in the overall roost positions and numbers on this site. 3no in-built bat boxes will be located within built infrastructure facing south, installed at 6-8m in proximity to retained or created vegetation. It will be a condition of development that the scheme obtains a suitable EPS bat mitigation license to allow lawful demolition and re-erection of the bat roost.
- 5.38 This proposal also benefits from the ability to build on the strategies and surveys associated with recent developments on adjacent sites.

Residual Effects

Key Ecological Receptors at Halsnead Garden Village

Ancient / Mature Woodland

- The masterplan explicitly protects and enhances ancient and mature broadleaf woodland.
- These woodlands are high-value ecological receptors. The SPD requires a minimum 15 m buffer around woodland groups.

Open Mosaic Habitats

- The SPD (Supplementary Planning Document) calls for “incorporation and enhancement of notable habitats (such as open mosaic habitats)”.
- Open mosaic habitats (e.g. patches of scrub, bare ground, and sparse vegetation) are often valuable for invertebrates and other species.

Grassland / Meadowland

- There is protection / creation of grassland and restored wildflower meadows.
- These provide habitat for invertebrates, possibly ground-nesting birds or small mammals.

Wetland / Watercourse Habitats

- The green-space plan includes wetland planting.
- Watercourses on site are to be managed, and existing ponds (e.g. “Mellors Pond”) will be enhanced.
- Such aquatic habitats could support amphibians, aquatic invertebrates, and wetland plants.

Local Wildlife Sites

- The masterplan SPD recognises that there are Local Wildlife Sites (LWS) within or adjacent to the development area.
- These LWS are likely to include priority habitats or species.

Protected Species

- The SPD requires an Ecological Impact Assessment (EclA) for planning applications, to identify and mitigate impacts on protected species, including European protected.
- The baseline ecology report mentions “high value ecological receptors such as ancient woodland and BAP [Biodiversity Action Plan] species.”
- The environmental constraints report flags “protected species” risk.

- The Liverpool City Region's Habitat Regulations Assessment (HRA) screening for the Spatial Development Strategy notes riparian habitats, wet woodland, and sedge-swamp near the site.
- While the HRA is for the wider LCR strategy, it highlights potentially sensitive ecological features for Halsnead's area.

Ecological Connectivity / Corridors

- The masterplan emphasises wildlife corridors: green-space connections within the site, plus links to external ecological areas (e.g. Stadt Moers Park, Knowsley Expressway Woodlands, and other wildlife sites).
- This is important for species movement (e.g., for mammals, birds, invertebrates).

Invasive Species

- The SPD mandates management to contain the spread of invasive species.
- Invasive species can be a receptor in terms of risk (they threaten native ecology) or a management target.

Key Ecological Risks / Constraints

- There is a risk of habitat loss or fragmentation (especially woodland, scrub, meadow) due to development.
- Protected species impacts: without proper surveys and mitigation, construction could harm species.
- Water quality / hydrology: managing watercourses and ponds is essential, both for biodiversity and flood risk.
- Invasive species control must be maintained.
- Ensuring that ecological corridors remain functional once developed (not just green areas in name, but meaningful habitat).

Ecological Mitigation & Enhancement Measures (Planned)

- Ecological Impact Assessments (EclA) to identify species presence and risks.
- Habitat creation: wildflower meadows, wetlands, new trees (1,400+ new trees are planned).
- Buffers around sensitive habitats (e.g., woodland).
- Enhancing existing water bodies (ponds), creating wetland zones.
- Long-term management: the 28-hectare country park will have a ranger presence, an education space, and sustained ecological oversight.

Residual (Remaining) Effects — Biodiversity

- 5.39 The Halsnead Garden Village masterplan includes a number of measures relating to biodiversity and “residual effects. The below effects are the likely residual biodiversity effects (i.e. those that remain after all planned mitigation and green infrastructure measures) and key risks / uncertainties:

Positive Residual Effects

- Net gain in habitat: The creation of wildflower meadows, wetlands, new woodland, and planting of many trees should lead to new biodiverse habitats — not just compensation, but net gain potential (assuming successful establishment).
- Improved ecological connectivity: Wildlife corridors and green links within the masterplan will likely allow species to move more freely, reducing fragmentation. This helps both resident species and new ones to colonize.
- Long-term management: With The Land Trust managing the country park and open spaces, there is potential for sustained, quality ecological management (rather than “build and forget”). That could mean better long-term biodiversity outcomes.

Negative or Adverse Residual Effects / Risks

- Habitat loss during construction: Even with mitigation, construction will likely remove or disturb existing habitats (woodlands, grasslands, etc.), which could harm some species temporarily or permanently.
- Edge effects: New habitat edges (e.g., where development meets green space) may suffer from edge-related pressures (predation, invasive species, disturbance).
- Uncertainty of ecological establishment: New meadow and woodland planting may take many years to mature; biodiversity benefits might lag behind habitat creation. Some planting may fail or be less biodiverse than planned.
- Invasive species: While there is a plan to manage invasives, they remain a risk, especially if disturbed ground enables their spread.
- Disturbance: Recreational use (e.g., fishing, footpaths, cycle paths) may disturb wildlife if not carefully managed.
- Water quality risks: Changes to hydrology, runoff, or pollution (from development) could degrade watercourses, affecting aquatic biodiversity.

Uncertainties / Dependency on Management

- The effectiveness of the Land Trust’s management will be crucial. If green spaces are not managed well (e.g., under-resourced, poor maintenance), biodiversity gains could be compromised.

- **Monitoring:** The plan seems strong, but the long-term success depends on monitoring of habitats, species, water quality, etc. Without effective monitoring, negative trends might not be detected or addressed.
- **Funding:** The ongoing management (tree maintenance, invasive species control, habitat mowing regimes) costs money; if funding is inadequate, management may be suboptimal.
- **Policy / regulatory changes:** Over the decades, environmental policy might shift (e.g., on biodiversity net gain, conservation priorities), which could change how residual effects are managed or mitigated.

Assessment / Overall Judgement

- Overall, the masterplan is quite ambitious on biodiversity: It doesn't just "patch up" but seeks to integrate green infrastructure, create new habitats, and protect existing ones.
- The SEA suggests a net positive long-term effect on biodiversity (subject to mitigation), which is encouraging. consultations.knowsley.gov.uk
- But the residual effects are not risk-free: success hinges heavily on implementation (planting, management), long-term maintenance, and ecological monitoring.

Cumulative Effects

- 5.40 Schedule 4 of the EIA Regulations requires an Environmental Statement to include a description of the likely significant effects of the development, including cumulative effects with other existing and/or approved projects. Guidance from the Planning Inspectorate (Advice Note Seventeen) and the Institute of Environmental Management and Assessment (IEMA) emphasises that cumulative assessment should be proportionate and limited to "reasonably foreseeable" developments.
- 5.41 The proposal forms part of the proposed Halsnead Garden Village and is allocated within the adopted Masterplan. Halsnead Garden Village totals approximately 174Ha crossing the M62 to the north and south and seeks to provide 1600 homes. This site lies to the South of the M62 together with the proposed employment area (22.5 Ha) and country park on the site of the former Cronton Colliery. This application (for up to 95 homes) is modest in scale and comprises one of the final phases of development within the masterplan area.
- 5.42 The M62 to the north is a physical barrier that separates the application site from the concentration of housing to the north of the site, therefore the cumulative impact of the proposed development on the application site to the south is significantly reduced. Therefore, it can reasonably be stated that the cumulative effects have already been considered within the process of the allocation of the masterplan area

and indeed within the Strategic Environment Assessment (SEA) undertaken as part of the production of the Halsnead Garden Village SPD.

Summary and Conclusion

- 5.43 The principal specific ecological components that are considered important due to their conservation status are
- Bat roost identified in the existing farmhouse
 - Presence of NERC Act Section 41 woodland on southern boundary
- 5.44 There will be an improvement in roosting provision for bats and of foraging conditions by the placement of bat mitigation and increased planting, so no residual effects are anticipated.
- 5.45 The NERC S41 woodland has been considered in the design during early stages of design development, it is due to be retained and unaffected by means of a CEMP detailing environmental protection measures and the AIA which details Tree Protection measures, so no residual effects are anticipated.
- 5.46 From a natural and arboricultural perspective, the cumulative impacts have already been recently and comprehensively considered within adjacent decisions. This scheme and the surveys undertaken have benefited from this extensive knowledge ensuring opportunities to further bolster benefits and extend key connections have been taken.
- 5.47 The proposal is considered unlikely to contribute to cumulative impacts of the wider proposals in the Garden Village area. Wider areas are not considered relevant.

6.0 Cultural Heritage

Introduction

- 6.1 This chapter has been prepared by Michael Horner BA (Hons) MA ACIfA, Historic Environment Consultant, and has been checked by Mathew James BSc (Hons) MSc MCIfA of the Lanpro Historic Environment Team. This chapter should be read in conjunction with the Historic Environment Desk-Based Assessment (HEDBA) available in Appendix F1 which has established the archaeological potential and potential impacts to heritage as a result of the development of the site.

List of Appendices

- Appendix F1 - Lanpro 2025, 'Halsnead Farm, Prescott, Merseyside, Historic Environment Desk-Based Assessment'

Legislation, Policy and Guidance

Legislative Framework

- 6.2 The applicable legislative framework is summarised as follows:
- Ancient Monuments and Archaeological Areas Act (AMAAA) 1979
 - Planning (Listed Buildings and Conservation Areas) (P(LBCA)) Act 1990

Policy

- 6.3 The applicable policies are summarised as follows:
- National Planning Policy Framework 2024
 - Knowsley Local Plan Core Strategy 2016

Guidance

- 6.4 The following guidance documents have been used during the preparation of this Chapter
- Planning Practice Guidance (PPG) 2019
 - Historic England 2015, 'Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision Taking in the Historic Environment'
 - Historic England 2019, 'Statements of Heritage Significance. Analysing Significance in Heritage Assets'
 - ClfA [Chartered Institute for Archaeologists] 2020, 'Standards and Guidance for Historic Environment Desk-Based Assessment'

Assessment Methodology

6.5 The methodology and sources consulted to establish the baseline conditions are set out in detail in the HEDBA. In summary this entailed:

- Collating information from the Merseyside Historic Environment Record (HER) and the Historic England National Heritage List for England (NHLE) within a 1km search area around the red line boundary, in order to set the site within its archaeological and historic context;
- Consultation of a broad range of relevant documentary and cartographic sources, including historical maps, plans and relevant documentary sources, British Geological Survey data (BGS), available geotechnical data and a site walkover.

Evolution of the Baseline

6.6 In accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (EIA Regulations), the consideration of the likely evolution of baseline if the Proposed Development were not to come forward is required. This is to determine the likely effect if the Cumulative Schemes and any relevant policy designations were to come forward in the absence of the Proposed Development.

Spatial Scope

6.7 Through professional judgement and prevailing conditions a 1km search area from the site boundary has been determined to be appropriate for establishing the heritage baseline of the site.

Temporal Scope

6.8 The temporal scope of assessment considers the construction and operational phases of the development. Any assessments of impact consider the embedded mitigation at 15 years following the construction of the proposed development.

Assessment

6.9 Following the characterisation of the baseline conditions, the methodology used to characterise the likely environmental effects on potential sub-surface archaeological remains and designated heritage assets within and beyond the site has entailed:

- Evaluating the significance of heritage assets, based on existing designations and professional judgment where such resources have no formal designation, and considering historical, archaeological, architectural / artistic interest as outlined in the NPPF and Historic England's Statements of Heritage Significance;

- Predicting the magnitude of impact (change) upon the known or potential heritage significance of assets and the likelihood and resulting significance of environmental effect as a result of the Proposed Development, including considering embedded mitigation measures;
- Considering any additional mitigation that might be required in order to avoid, reduce or off-set any significant negative effects; and
- Quantifying any residual effects (those that might remain after additional mitigation).

Demolition and Construction

- 6.10 The assessment in the HEDBA established there is potential for surviving archaeological remains within the site, which could be directly impacted during the demolition and construction phases by ground disturbances such as excavation for drainage, utility services, foundations, and other groundworks.

Complete and Operational Development

- 6.11 The assessment in the HEDBA determined that any surviving archaeological remains within the site would only be impacted by below-ground works. No impacts or effects will occur on buried heritage assets once the Proposed Development is complete, as no additional ground disturbance will take place. Therefore, there is no need to further consider the completed Proposed Development in relation to buried heritage assets, and it has been scoped out of this ES chapter.

Significance Criteria

Sensitivity of Receptors

- 6.12 The NPPF defines significance (hereby referred to as sensitivity) as 'The value of a heritage asset to this and future generations because of its heritage interest. That interest may be historic, archaeological, architectural or artistic.' The determination of the value/sensitivity is based on its statutory designation and/or professional judgement for archaeological remains, depending on the nature, extent and preservation of these remains, in relation to these values (also identified in Historic England Statements of Heritage Significance (2019). However, unless the nature and exact extent of buried heritage assets within any given area have been determined through prior investigation, value/sensitivity is often uncertain.
- 6.13 The criteria to establish to establish the value/sensitivity of assets are provided in Table 6.1 below.

Table 6.1: The Criteria for Establishing the Sensitivity of Heritage Assets

Sensitivity	Heritage Asset Description
Very High (e.g. International)	World Heritage Sites Other buildings or structure of recognised international importance
High (e.g. National)	Scheduled Monuments Grade I and Grade II* Listed Buildings Grade I and Grade II* Registered Historic Parks and Gardens Non-designated assets of equivalent heritage significance which are potentially nationally important
Medium (e.g. Regional/County)	Grade II Listed Buildings Grade II Registered Parks and Gardens Conservation Areas Regionally important archaeological features and areas (as defined by the HER)
Low (e.g. Local)	Locally Listed Buildings Non-Designated archaeological sites of local value, and/or potential to contribute to local research objectives
Negligible	Heritage assets with very little or no surviving research value Assets compromised by poor preservation and/or poor contextual association, or very common archaeological features/buildings of little or no value at local or other scale
Unknown	Heritage assets for which the current level of understanding is insufficient to allow heritage significance to be determined

Magnitude of Impact

- 6.14 The magnitude of an environmental impact on a receptor is based upon an assessment of data relating to designated and non-designated heritage assets, undertaken by professionals with extensive experience in the identification, assessment and mitigation of development-related effects on the historic environment.
- 6.15 The magnitude of impact will be determined as the predicted change to the existing baseline conditions during construction of the proposed development and during its operation. The effect can either be adverse or beneficial, direct or indirect, and the criteria for assessing the magnitude of the impact is set out in Table 6.2 below.

Table 6.2 The Criteria for Establishing the Magnitude of Impact

Magnitude	Environmental Impact
High	Complete removal of asset. Change to asset significance resulting in a fundamental change in our ability to understand and appreciate the resource and its historical context, character and setting. The transformation of an asset's setting in a way that fundamentally compromises its ability to be understood or appreciated. The scale of change would be such that it could result in a designated asset being undesignated or having its level of designation lowered.
Medium	Change to asset significance resulting in an appreciable change in our ability to understand and appreciate the resource and its historical context, character and setting. Notable alterations to the setting of an asset that affect our appreciation of it and its significance; or the unrecorded loss of archaeological interest.
Low	Change to asset significance resulting in a small change in our ability to understand and appreciate the asset and its historical context, character and setting.
Negligible	Negligible change or no material change to asset significance. No real change in our ability to understand and appreciate the asset and its historical context, character and setting.
Neutral	No change

Significance of Effects

- 6.16 The significance of the heritage receptor is correlated against the magnitude of the change on the receptor, using the significance matrix below in Table 6.3, in order to determine whether the overall significance of the effect on the receptor will be Neutral, Negligible, Minor, Moderate or Substantial. A significance of effect greater than Minor is considered to be an effect which is significant in EIA terms.

Table 6.3 Significance Matrix

		Sensitivity of Receptor			
		High	Medium	Low	Negligible
Magnitude of Impact	High	Substantial	Substantial	Moderate	Negligible
	Medium	Substantial	Moderate	Minor	Negligible

		Sensitivity of Receptor			
		High	Medium	Low	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Cumulative Impact

- 6.17 The cumulative impact assessment follows a qualitative, professional judgement-based approach informed by the Planning Inspectorate's Advice Note 17 and tailored to the receptors and nature of the proposed development. It considers both intra-project and inter-project effects using available data, supplemented by professional judgement, and adopts precautionary assumptions where information is limited. The list of agreed projects to consider in the cumulative assessment has been provided by Knowsley Council and informs this section. The likely cumulative (combined) effects are then assessed against established significance criteria considering receptor sensitivity, magnitude, duration, and reversibility of change, with additional mitigation proposed where significant effects are identified.

Limitations and Assumptions

- 6.18 The principal limitation to this assessment arises from the buried and non-visible nature of the archaeological resource. While this inevitably introduces a degree of uncertainty, the baseline for the site is considered to be well established through desk-based assessment. Data from the Historic Environment Record (HER), together with the results of previous desk-based assessments, evaluations and fieldwork within the 1km study area, provide a robust evidence base from which to assess the likely presence, character, and significance of any buried remains. Consequently, while direct visibility of archaeological assets is limited, the assessment draws upon a comprehensive and well-tested body of information to inform understanding of the archaeological potential and significance.

Consultation

- 6.19 Consultation was undertaken with the Local Planning Authority (LPA) following the production of the HEDBA. The LPA confirmed that the Halsnead Park Wall (HER MME15681) and the former parkland at Halsnead Park (HER MME15147) are to be considered non-designated heritage assets and requested further considerations of the significance and potential impacts to the Grade II listed Old Halsnead (NHLE 1261787).

Baseline Conditions

Designated Heritage Assets

- 6.20 The HEDBA (Appendix F1) identified that the site does not contain any designated heritage assets.
- 6.21 Within the 1km search area there are six designated heritage assets, all of which are Grade II Listed Buildings. Details of all these designated heritage assets are listed below in Table 6.4.

Table 6.4 Designated Heritage Assets

Monument Ref.	HER Ref.	Name	Grade	Period
1261787	DME116	Old Halsnead	Grade II Listed Building	17th Century
1253249	DME100	North East Lodge to Halsnead Park	Grade II Listed Building	18th Century to 19th Century
1253250	DME102	Barn at Snape Gate	Grade II Listed Building	18th Century
1253251	DME103	Sandfield House	Grade II Listed Building	18th Century
1253429	DME106	Gate Piers Beside North East Lodge to Halsnead Park	Grade II Listed Building	Post-Medieval
1261894	DME121	Church of St Nicholas	Grade II Listed Building	19th Century

- 6.22 Five of these Listed Buildings (NHLE 1253249, 1253250, 1253251, 1253429 and 1261894) are located to the north of the M62 motorway. Due to the motorway being a dominant feature of the landscape and being accompanied by dense tree planting to the north and south, there is no intervisibility between the site and any of these assets. Two of these assets, the 'North East Lodge to Halsnead Park' (NHLE 1253249) and its associated gate piers (NHLE 123429), have a limited historical connection to the site as they were all formerly part of the grounds of the no longer extant Halsnead Hall. However, the M62 and the other extensive modern developments in the area have also severed any appreciation of this historic association. Therefore, the site does not contribute to the setting or significance of these assets.

- 6.23 The grounds of 'Old Halsnead' (NHLE 1261787) are located immediately south-west of the site. To the east of Old Halsnead is the plot of the early to mid-20th century Halsnead Villas, which are situated between the asset and the site. Due to the proximity of Old Halsnead to the site, it will be taken forward for further assessment within this chapter and is of medium sensitivity as a Grade II Listed Building.

Non-Designated Heritage Assets

- 6.24 The HER records two 'monument' records which fall partially within the site. These records are 'Halsnead Park, Whiston' (MME15147) and 'Halsnead Park wall, Whiston' (MME15681), both of which have been identified as non-designated heritage assets by Knowsley Council.
- 6.25 The site was formerly located within the eastern portion of Halsnead Park from the late 18th/early 19th century until the early 20th century (Appendix F1). However, the former parkland has experienced significant development during the modern period with the addition of the M62 through its centre, the construction of substantial modern housing developments and the opening of a colliery which has since been superseded by a large distribution centre. These developments have completely changed the way in which this landscape is experienced and therefore its historic use as parkland is not appreciable. Therefore, the former parkland at Halsnead Park (HER MME15147) is considered to be of negligible sensitivity in EIA terms due to its poor preservation and contextual association.
- 6.26 The Halsnead Park Wall (MME15147) consists of the fragmentary remains of the once circuitous wall which delineated the boundary of Halsnead Park. A small section of this wall which is around 107m in length runs along the eastern boundary of the site. It is considered to be an asset of low sensitivity as a non-designated asset of low significance.

Archaeological Baseline

LiDAR

- 6.27 LiDAR data produced by the Environment Agency and published on the DEFRA Data Service Platform (DEFRA 2024) was consulted in order to identify any previously unrecorded earthworks within the site (Appendix F1, Figure 11). The LiDAR Imagery depicts faint linear topographical anomalies which run east/west across the site which likely relate to modern ploughing or drainage. Other than this, no features of note were identified.

Chronological Summary

- 6.28 The archaeological and historical background of the site is set out in detail in the HEDBA (Appendix F1). The section below provides a summary overview.

Prehistoric and Roman Periods (c. 9500 BC – c. AD 410)

- 6.29 There is no recorded evidence of prehistoric or Roman period activity within the site.
- 6.30 The HER records one isolated Roman find spot within the wider search area, consisting of a Roman pottery sherd (MME21791), discovered c.750m north-east of the site.
- 6.31 Based on the lack of evidence for prehistoric and Roman activity within the search area, and the fact that there have been several archaeological investigations undertaken in the vicinity that have not identified remains dating to these periods (EME3083 and EME3309), it is considered that there is very limited potential for remains dating to these periods to survive within the site.

Medieval Period (C. AD 410 - c. 1540)

- 6.32 There is no recorded evidence of medieval activity within the site.
- 6.33 Three of these entries relate to find spots of medieval to post-medieval pottery at Lickers Lane, around 750m north of the site (MME15823) and at Higher Shaw Farm, around 500m east of the site (MME7128 and MME7129). The other four HER entries dating to the medieval period relate to agrarian activity and are in the form of curvilinear enclosures indicative of field systems (MME16079 and MME6272), a ditch (MME20871) and a boundary bank (DME3359). The closest of these (MME16079) is located around 100m east of the site.
- 6.34 The site was located outside of the focus of any known medieval settlement and is likely to have remained in agricultural use throughout the period. Therefore, it is considered that any remains of a medieval date surviving in the site are likely to relate to agricultural activity and would be of negligible significance.

Post-Medieval and Modern Periods (c. 1540 - Present)

- 6.35 The HER records two entries of post-medieval activity within the site. Both entries (MME15147 and MME15681) relate to the site being part of the grounds of the former Halsnead Hall, which was constructed in the 17th century and demolished in the 1930s. A further eight HER 'monuments' within the 1km search area relate to features within Halsnead Park.
- 6.36 The 1842 Tithe map of Whiston depicts the site as being part of the open parkland of Halsnead Park. It also shows that the Grade II listed Old Halsnead (NHLE 1261787), located around 50m west of the site was enclosed similarly to today within woodland. This shows that historically, the site area was associated with Halsnead Hall rather than Old Halsnead, despite its proximity to the asset. The tithe

map also shows a row of agricultural buildings (MME21893) to the south of Old Halsnead which likely serviced enclosed fields south of the site.

- 6.37 The 1892 Ordnance Survey (OS) 25-inch map shows that the site was still part of the parkland at this time and that there was an extant pond with an area of associated woodland in its north-eastern corner.
- 6.38 The 1927 25-inch OS map shows that the site formed the southern side of a larger field which extended northwards. This highlights that Halsnead Park had been divided for agricultural use by this time. This map depicts the addition of the Cronton Colliery in formerly enclosed fields around 150m south of the site.
- 6.39 The 1937 25-inch OS map shows the addition of Halsnead Farmhouse in the south-eastern area of the site and the addition of 'The Bungalow' which is located just south of the site. The field in which the site was situated at this time was also marked as being a nursery. The 1937 OS map depicts the expansion of Cronton Colliery, with the addition of associated baths and sewage works around 100m south-west of the site. The map also shows the addition of a pair of semi-detached houses adjacent to Old Halsnead (NHLE 1261787), around 30m west of the site.
- 6.40 The 1959 1:2500 OS map shows the addition of a number of buildings in the northern portion of the site. It also depicts tree planting in the south-eastern corner of the site and a new boundary around The Bungalow and Halsnead Farmhouse. By this time the farm buildings (MME21893) to the south of Old Halsnead (NHLE 1261787) were no longer extant.
- 6.41 The 1980 1:2500 OS map shows that at this time the site mirrors its present proportions due to the construction of the M62 Motorway along its northern boundary. The extant farm buildings and the electrical pylons to the north of the site had also been constructed but the pond in the north-eastern corner of the site was no longer extant.
- 6.42 The 1989 1:2500 OS map shows the addition of a tank in the north-east corner of the site. To the south of the site, the colliery is no longer depicted.
- 6.43 The site formed part of the Halsnead Park parkland during the late 18th and 19th centuries but following the division of the park in the 1920s, including the demolition of Halsnead Hall in the 1930s, the site formed part of a field which became a nursery. The present parcel of land forming the site has been defined since the construction of the M62 to the north in the 1970s. As there were no buildings extant on the site during the time the site was parkland, as evidenced from the historic mapping it is unlikely that there are any sub-surface remains relating to Halsnead Park present within the site, although sub-surface remains representing the former 19th century pond may survive. However, it is considered that the remains of the pond, or any buried post-medieval or modern agricultural features, would be of negligible significance.

Previous Impacts

- 6.44 Some areas of site were disturbed in the mid to late 20th century through the construction of Halsnead Farmhouse in the south-eastern portion of the site and the range of modern agricultural buildings and no longer extant tank, in the northern part of the site. This construction has likely destroyed any earlier archaeological remains in these areas.
- 6.45 The rest of the site has been either parkland or farmland during the post-medieval and modern periods which could have caused some below ground impacts through potential landscaping or ploughing.

Sensitive Receptors

- 6.46 Following the baseline review a number of sensitive receptors have been identified, these can be seen below in Table 6.5.

Table 6.5 Sensitive Receptors

Receptor	Designation	Description	Sensitivity
Old Halsnead (NHLE 1261787)	Grade II Listed Building	17th Century House	Medium
Halsnead Park Wall, Whiston (HER MME15681)	Non-Designated Heritage Asset	A masonry wall which formerly delineated the boundary of Halsnead Park	Low
Halsnead Park, Whiston (HER MME15147)	Non-Designated Heritage Asset	The extents of the no longer extant parkland of Halsnead Park	Negligible
Archaeological Remains of All Periods	-	The HEDBA (Appendix 6.1) found that any remains within the site would likely relate to medieval or post-medieval agricultural practices or to the use of the site as parkland during the post-medieval period.	Negligible

Assessment of Environmental Impacts

Proposed Development

- 6.47 Full details of the proposed development can be found in chapter 3. Development details pertinent to the assessment of potential heritage impact are detailed in the Historic Environment Desk Based Assessment (Appendix F1).

Construction Phase Effects

- 6.48 The overall impact of the proposals in terms of Cultural Heritage and Archaeology during the construction phase and prior to the consideration of mitigation is highlighted in Table 6.6 below:

Table 6.6 Construction Phase Effects

Nature of Impact	Receptor Sensitivity	Magnitude of Impact	Significance of Effect
Direct Permanent Impact on Buried Archaeological Remains - Groundworks (Drainage, services, foundations etc.)	Negligible	High	Negligible Adverse Effect
Direct Permanent Impact to Halsnead Park Wall (HER MME15681) - Realignment of Park Wall to create a new access road	Low	Low	Minor Adverse Effect
Direct Permanent Impact to Halsnead Park (HER MME15147) - Introduction of new built forms into the former area of parkland at Halsnead Park	Negligible	Low	Negligible Adverse Effect
Temporary Indirect Impact on the setting of Old Halsnead (NHLE 1261787) - Through construction activity e.g. increased noise, vibration etc.	Medium	Negligible	Negligible Adverse Effect

Buried Archaeological Remains

- 6.49 Based on the baseline information, there will be potential high direct impacts to any archaeological remains that may be identified within the proposed development site, during construction, topsoil stripping or other groundworks. However, there is no current evidence to suggest that there are any surviving archaeological remains within the site which would be of greater than negligible significance.

Designated Heritage Assets

- 6.50 Due to the high baseline for noise from the proximity of the Grade II listed Old Halsnead to the M62, it has been assessed that the noise and vibration caused by the construction of the proposed development would have a negligible impact on its setting.

Non-Designated Heritage Assets

- 6.51 As part of the proposed development, the southern portion of the section of the Halsnead Park Wall which runs along the eastern boundary of the site will be rebuilt on a slightly different alignment to how it currently stands, in order to allow the creation of a new access road into the site. This will impact the significance the wall derives from its evidential value as this section of the wall will no longer show the true boundary of the former parkland. However, the evidential value of this section of the wall has already been eroded to a degree with the repositioning of the northern part of this section in the mid-late 20th century.
- 6.52 The proposals would have a limited beneficial effect on the aesthetic value of this section of the Halsnead Park Wall (MME15147) as it will be rebuilt in the same style with the same materials and will therefore be in an improved state of repair.
- 6.53 Overall, it has been assessed that the proposed development will impact the evidential value of the wall to a degree. This will result in a low impact to the significance of the non-designated The Halsnead Park Wall (MME15147), constituting a slight change in our ability to appreciate the park wall and its historical context.

Operational Phase

- 6.54 The proposed development will result in a new built element in the landscape. This would introduce a residential development consisting of 88 dwellings into the wider setting of Old Halsnead (NHLE 1261787). This change to the wider setting of the asset is considered have a negligible impact on the significance of the asset. It has been assessed in Appendix F1 that the wider setting of the asset is characterised by modern developments and does not contribute to the significance of the asset.

- 6.55 The overall impact of the proposals in terms of Cultural Heritage and Archaeology during the operational phase and prior to the consideration of mitigation is highlighted in Table 6.7 below:

Table 6.7 Operation Phase Effects

Nature of Impact	Receptor Sensitivity	Magnitude of Impact	Significance of Effect
Permanent Indirect Impact to the setting of Old Halsnead (NHLE 1261787)	Medium	Negligible	Negligible Adverse Effect

Buried Archaeological Remains

- 6.56 There will be no operation phase effects on any buried archaeological remains as a result of the proposed development.

Designated Heritage Assets

- 6.57 There will be a permanent indirect impact on the setting of Old Halsnead (NHLE 1261787) through the introduction of a new built form within its wider setting. The HEDBA (Appendix F1) has established that the asset derives its significance chiefly from architectural, historic and evidential values. The immediate setting of Old Halsnead offers a limited contribution to its significance and comprises its own grounds which are surrounded by dense mature woodland which heavily filters views from the asset to the north, east and west. The wider setting of the asset is characterised by significant modern developments such as the M62 to the north and the large distribution centre to the south and does not contribute to the significance of Old Halsnead. Therefore, the material change of a new built form within this wider setting will not affect the significance of the asset.

Non-Designated Heritage Assets

- 6.58 There will be no operation phase effects on any non-designated heritage assets as a result of the proposed development.

Mitigation Measures

Construction Phase

Inherent Mitigation Measures

- 6.59 During the construction phase, impacts to the setting of Grade II listed Old Halsnead (NHLE 1261787), which are not significant effects in EIA terms, will be reduced further by following good practice construction guidelines as embedded mitigation. Reasonable appropriate operating hours will be in force. Any additional noise produced by the construction will occur during the day when the baseline level of noise is already high due to the proximity of the site to the M62.
- 6.60 Under the proposals, the rebuilding and repair of the Halsnead Park Wall (MME15147) would be done sympathetically, using the existing materials and appropriate replacements where necessary. This would allow for the new wall to be in a much better state of repair while retaining the original architectural style, restoring the aesthetic value of the of the Halsnead Park Wall (MME15147).

Actionable Mitigation Measures

- 6.61 The sensitivity of the archaeological remains within the site is considered to be negligible from desk-based research (Appendix F1). Therefore, no standard or actionable mitigation measures have been deemed necessary.

Operational Phase

Inherent Mitigation Measures

- 6.62 To further minimise impacts to the setting of Grade II listed Old Halsnead, which are already not considered to be significant effects in EIA terms, screening will be planted as part of the design. This screening will be planted along the edge of the mature deciduous woodland which surrounds the plot of Old Halsnead (NHLE 1261787) and will consist of evergreen trees. This will ensure that an appropriate level of screening is present during the winter months, further reinforcing the filtered setting of the immediate plot of Old Halsnead (NHLE 1261787).

Actionable Mitigation Measures

- 6.63 There are no significant effects upon any identified receptor for the operational phase of the development. Therefore, no Actionable Mitigation Measures are required.

Residual Effects

Construction Phase

6.64 The overall impacts of the proposals in terms of Cultural Heritage and Archaeology during the construction phase is highlighted in Table 6.8 below.

Table 6.8 Residual Construction Phase Effects

Nature of Impact	Receptor Sensitivity	Magnitude of Impact	Significance of Effect	Mitigation	Residual Significance of Effect
Direct Permanent Impact to Halsnead Park Wall (HER MME15681) - Realignment of Park Wall to create a new access road	Low	Low	Minor Adverse Effect	Rebuilding will be sympathetic and use existing materials where possible, improving the aesthetic value of the Halsnead Park Wall (MME15147)	Negligible Adverse Effect
Direct Permanent Impact to Halsnead Park (HER MME15147) - Introduction of new built forms into the former area of parkland at Halsnead Park	Negligible	Low	Negligible Adverse Effect	No Mitigation Required	Negligible Adverse Effect

Nature of Impact	Receptor Sensitivity	Magnitude of Impact	Significance of Effect	Mitigation	Residual Significance of Effect
Temporary Indirect Impact on the setting of Old Halsnead (NHLE 1261787) - Through construction activity e.g. increased noise, vibration etc.	Medium	Negligible	Negligible Adverse Effect	Use of appropriate operating hours to coincide with when there is a high level of baseline noise from the M62	Negligible Adverse Effect

Operational Phase

- 6.65 Operational phase impacts are limited to setting impacts to the wider setting of the Grade II listed Old Halsnead (NHLE 1261787). These impacts have been identified as not significant in EIA terms; however, mitigation will still take place to further reduce these impacts.
- 6.66 The overall impact of the proposals in terms of Cultural Heritage and Archaeology during the operational phase is highlighted in Table 6.9 below.

Table 6.9 Residual Operational Phase Effects

Nature of Impact	Receptor Sensitivity	Magnitude of Impact	Significance of Effect	Mitigation	Residual Significance of Effect
Permanent Indirect Impact to the setting of Old Halsnead (NHLE 1261787)	Medium	Negligible	Negligible Adverse Effect	Evergreen screening to be added along the edge of the mature deciduous woodland in order to ensure an appropriate level of screening during the winter months	Negligible Adverse Effect

Cumulative Effects

- 6.67 From the full list of developments agreed in consultation with the Local Planning Authority and key consultees, the following have been identified as having the potential to result in cumulative effects when considered alongside the Proposed Development. In accordance with relevant Environmental Impact Assessment (EIA) guidance, these developments have been taken forward for detailed consideration within the Cultural Heritage assessment, as set out in Table 6.10.

Table 6.10 Nearby Developments Considered for Cumulative Effects

Reference and Address	Description Summary	Distance From Proposed Development	Status	Justification for inclusion in Cumulative Assessment
20/00494/HYB Former Site of Cronton Colliery, Cronton Road, Halsnead Garden Village, Knowsley, L35	Hybrid application for up to 1 million sq ft of storage and distribution space (B8) with offices (B1), access, parking, and associated works, plus country park creation, drainage features, and a link to the M62 footbridge.	Adjacent to West	Approved (04/03/2022)	Potential to impact to the setting of Old Halsnead (NHLE 1261787) and physical impact to the Halsnead Park Wall (HER MME15681)

Reference and Address	Description Summary	Distance From Proposed Development	Status	Justification for inclusion in Cumulative Assessment
24/00211/FUL Fox's Bank, Halsnead Garden Village, Land West of Fox's Bank Lane and North of M62, Whiston, Knowsley, L35 3SS	Variation of conditions to allow new solar panels to the roof of a number of plots, changes and rebuilding of the Halsnead Park Wall (MME15147) along Fox's Bank Lane, new fencing adjacent to snape gate barn and other minor alterations and changes to delivery timescales. Following application 20/00417/FUL for residential development comprising of the erection of 350 dwellings together with the construction of vehicular access off Fox's Bank Lane	0.1km north	Approved (19/08/2025)	Physical impact to the Halsnead Park Wall (HER MME15681)

Reference and Address	Description Summary	Distance From Proposed Development	Status	Justification for inclusion in Cumulative Assessment
20/00329/FUL Land at Windy Arbor Brow, Whiston	Erection of a residential development of 43 dwellings comprising 14 apartments and 29 houses together with access, car parking and associated development (demolition of existing barn).	1.1km west	Approved (08/12/2021)	Physical impact to the Halsnead Park Wall (HER MME15681)

Below Ground Archaeological Remains

- 6.68 Cumulative effects are 'elevated' effects which occur where the combined effect of the Proposed Development with other Proposed Developments in the vicinity, on a discrete and significant shared buried heritage receptor, is more severe than that reported at the site. This is on the basis that for intangible and deeply buried heritage assets it is not feasible to quantify accurately the nature of the resource across the assessment search area, which would enable the identification of a cumulative impact and potential elevated effect. Therefore, an assessment of cumulative Archaeological effects has been scoped out.

Construction Phase

Old Halsnead (Grade II Listed, NHLE 1261787)

- 6.69 The planning application for 20/00494/HYB acknowledges a level of harm to the setting of the Grade II listed Old Halsnead (NHLE 1261787). This is assessed as a non-significant effect to the immediate setting of the asset during the construction and operational phases and a moderate adverse effect to the wider setting of the asset during the construction and operational phases. It has been established that there will be a negligible impact to the setting of Old Halsnead through the increase of traffic and noise through the proposed development. It is considered that the magnitude of this impact will not be increased through cumulative effects with the construction phase of 20/00494/HYB due to the high baseline of noise due to the proximity of the M62 and the embedded mitigation.

Halsnead Park Wall (HER MME15681)

- 6.70 Three planning applications (24/00211/FUL, 20/00329/FUL and 20/00494/HYB) have acknowledged impact to the Halsnead Park wall (HER MME15681) in other areas of the former parkland. The impacts of both 24/00211/FUL, located 0.1km to the north and 20/00329/FUL, located 1.1km to the west, are considered to be beneficial to the significance of the asset, improving its state of repair and retaining its evidential value of delineating the former park boundary. Application 20/00494/HYB in adjacent plot to the west and south of the site acknowledges a low level of harm to the asset, demolishing a small section of the wall in order to create access to the site.
- 6.71 It has been assessed that there will be a minor adverse effect to the significance of the Halsnead Park Wall (MME15147) during the construction phase. The cumulative effects of this application and those within the surrounding area would constitute a minor adverse impact, which is not considered significant in EIA terms.

Operational PhaseOld Halsnead (Grade II Listed, NHLE 1261787)

- 6.72 The Environmental Statement for the adjacent consented development (20/00494/HYB) concludes that the wider setting of Old Halsnead, does not contribute to its significance, with the M62 creating an urbanising effect which considerably detracts from its setting. The additional loss of openness to the wider setting of the asset will not constitute a significant effect as the asset does not derive significance from its wider setting.
- 6.73 There will be a negligible adverse effect on the wider setting of Old Halsnead due to the introduction of a residential development into its wider setting. These independent impacts to the wider setting of the asset do not result in an increase in the magnitude of effect as the asset does not derive significance from its wider setting. Therefore, the assessed developments will not have any cumulative impact to Old Halsnead (NHLE 1261787).

Summary

- 6.74 This chapter, along with the HEDBA in Appendix F1, has established that there is a low archaeological potential for all periods and any archaeological remains, if present, would likely be considered to be of negligible significance. It has also been established that there are three built heritage receptors, the Grade II listed Old Halsnead (NHLE 1261787), the Halsnead Park Wall, Whiston (HER MME15681) and the Halsnead Park, Whiston (HER MME15147) which may be sensitive to the development.
- 6.75 The construction and operational phase effects have been assessed and no significant effects in EIA terms have been identified.
- 6.76 These non-significant effects have been further reduced through embedded design mitigation such as appropriate operating hours, the rebuilding of the Halsnead Park Wall (MME15147) in a sensitive manner and the bolstering of the extant screening around the plot of Old Halsnead (NHLE 1261787), through further tree planting. There are no significant residual effects.
- 6.77 As for cumulative effects, it has been established that assessment cumulative loss of the archaeological resource is not feasible. It has assessed that there will be no cumulative effects to any of the identified built heritage receptors.

References

ClfA 2020, Standard and guidance for historic environment desk-based assessment

DCMS 2010, Scheduled Monuments. Identifying, protecting, conserving and investigating nationally important archaeological sites under the Ancient Monuments and

DEFRA 2025, Data Service Platform, <https://environment.data.gov.uk/survey> (accessed 13/10/2025)

Historic England 2015, Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision Taking in the Historic Environment

Historic England 2019, Statements of Heritage Significance. Analysing Significance in Heritage Assets: Historic England Advice Note 12.

Knowsley Council 2016, Knowsley Local Plan Core Strategy

NPPF 2024, National Planning Policy Framework (revised December 2024)

PPG 2019, Planning Practice Guidance

7.0 Air Quality

Introduction

- 7.1 This chapter was prepared by Redmore Environmental Ltd. The author was Francine Chan BSc AMIEnvSc who is a Graduate Air Quality Consultant with specialist experience in the air quality sector and a particular emphasis on dispersion modelling of road vehicle exhaust emissions and assessment of baseline pollution levels. Francine has experience in a range of air quality impact assessments for standalone planning applications and Environmental Impact Assessment (EIA). The reviewer was Emily Macey, Senior Air Quality Consultant and the approver was Claire Meddings, Director.
- 7.2 This chapter has been prepared to assess air quality impacts at sensitive locations during the construction and operational phases as a result of the Proposed Development, as well as exposure of future residents to elevated pollution levels due to the proximity of the Site to the M62 and associated emissions.
- 7.3 The chapter describes the methods used to assess the likely significant impacts, the baseline conditions currently existing at the Site and surroundings, the potential impacts of the Proposed Development, the mitigation measures required to prevent, reduce or offset the identified significant impacts and the residual effects.
- 7.4 The chapter is supported by Appendix G1: Assessment Input Data and Appendix G2: Figures.
- 7.5 The chapter is also supported by the following Figures in Appendix G2:
- Figure 7.1 - Study Area and ADMS-Roads Inputs;
 - Figure 7.2 - Monitoring Locations;
 - Figure 7.3 - Operational Phase Road Vehicle Exhaust Emissions Sensitive Receptor Locations;
 - Figure 7.4 - Predicted Annual Mean Nitrogen dioxide (NO₂) Concentrations (µg/m³) Do-Something (DS);
 - Figure 7.5 - Predicted Annual Mean Particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀) Concentrations (µg/m³) DS;
 - Figure 7.6 - Predicted Annual Mean Particulate matter with an aerodynamic diameter of less than 2.5µm (PM_{2.5}) Concentrations (µg/m³) DS; and,
 - Figure 7.7 - Wind Rose of 2024 Liverpool Airport Meteorological Data.

Legislation, Policy and Guidance

Legislation

- 7.6 The Air Quality Standards Regulations (2010)¹ and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants:
- NO₂;
 - Sulphur dioxide;
 - Lead;
 - PM₁₀;
 - PM_{2.5};
 - Benzene; and,
 - Carbon monoxide.
- 7.7 Air Quality Target Values have also been provided for several additional pollutants. It should be noted that the AQLV for PM_{2.5} stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020)².
- 7.8 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28th April 2023³. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (AQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.
- 7.9 The Environmental Improvement Plan 2023⁴ was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to PM_{2.5}. The Concentration Target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).
- 7.10 Table 7.1 presents the AQOs, Interim Target and Concentration Target for pollutants considered within this assessment.

¹ UK GOVERNMENT (2010) The Air Quality Standards Regulations.

² UK GOVERNMENT (2020) The Environment (Miscellaneous Amendments) (EU Exit) Regulations.

³ UK GOVERNMENT (2023) AQS: Framework for Local Authority Delivery.

⁴ DEFRA (2023) Environmental Improvement Plan 2023.

Table 7.1 Air Quality Objectives/ Interim Target/ Concentration Target

Pollutant	Air Quality Objective/ Interim Target/ Concentration Target	
	Concentration (µg/m ³)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	12 ^(a)	Annual mean
	10 ^(b)	Annual mean

Note: (a) Interim Target to be achieved by end of January 2028.

(b) Concentration Target to be achieved by 2040.

- 7.11 Table 7.2 summarises the advice provided in DEFRA guidance⁵ on where the AQOs for pollutants considered within this report apply.

Table 7.2 Examples of Where the Air Quality Objectives Apply

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools, hospitals, care homes etc	Building façades of offices or other places of work where members of the public do not have regular access Hotels, unless people live there as their permanent residence Gardens of residential properties Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour mean	All locations where the annual mean objective would apply, together with hotels Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term

⁵ DEFRA (2022) Local Air Quality Management Technical Guidance (TG22).

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

Local Air Quality Management

- 7.12 Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 7.2 are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

Dust

- 7.13 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

- 7.14 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement

Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

National Planning Policy

7.15 The revised National Planning Policy Framework (NPPF)⁶ was published in December 2024 and amended in February 2025. The document sets out the Government's planning policies for England and how these are expected to be applied.

7.16 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to air quality:

"c) an environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

7.17 Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

[...]

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]."

7.18 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when

⁶ Ministry of Housing, Communities and Local Government (2024) NPPF.

determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

- 7.19 The implications of the NPPF have been considered throughout this assessment.

National Planning Practice Guidance

- 7.20 The National Planning Practice Guidance (NPPG)⁷ web-based resource was launched by the Department for Communities and Local Government to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

- What air quality considerations does planning need to address?
- What is the role of plan-making with regard to air quality?
- Are air quality concerns relevant to neighbourhood planning?
- What information is available about air quality?
- When could air quality considerations be relevant to the development management process?
- What specific issues may need to be considered when assessing air quality impacts?
- How detailed does an air quality assessment need to be?
- How can an impact on air quality be mitigated?

- 7.21 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

Local Planning Policy

- 7.22 The Knowsley Local Plan: Core Strategy⁸ was adopted by Knowsley Council (KC) on 26th January 2016. Review of the document indicated the following policy of relevance to this report:

"Policy CS2

Development Principles

1) New development in Knowsley and the preparation of subsequent sages of the Local Plan will be expected to support the following development principles:

Principle 4: Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote air quality of place by:

⁷ <https://www.gov.uk/guidance/air-quality--3>. Accessed on 6/10/2025.

⁸ KC (2016) Knowsley Local Plan: Core Strategy.

e) Mitigating potential negative impacts of traffic growth and road traffic on highway safety, air quality, noise and health;

[...]

J) Minimising negative impact upon flood risk, air quality, water quality, land quality, soil quality and noise or vibration levels and ensuring negative impacts are appropriately mitigated."

- 7.23 The Knowsley Replacement Unitary Development Plan (UDP)⁹ was adopted in June 2006. Under the transitional arrangements for moving to the Local Plan system, 39 UDP Policies have been saved, these include the following in relation to air quality:

"Policy ENV1: Control of Pollution in New Development

Development will not be permitted which is likely to cause significant harm to amenity as a result of impact on any of the following:

Air quality;

[...]"

- 7.24 The above policies were considered as necessary throughout this chapter.

Assessment Methodology

- 7.25 The Proposed Development has the potential to cause air quality impacts during the construction and operational phases, as well as expose future residents to elevated pollution levels. These factors have been assessed in accordance with the following updated methodology.

Construction Phase Assessment

- 7.26 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction V2.2'¹⁰.
- 7.27 Activities on the proposed construction Site have been divided into four types to reflect their different potential impacts. These are:
- Demolition;
 - Earthworks;

⁹ KC (2006) Knowsley Replacement UDP.

¹⁰ IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction V2.2.

- Construction; and,
 - Trackout.
- 7.28 The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:
- Annoyance due to dust soiling;
 - Harm to ecological receptors; and,
 - The risk of health effects due to a significant increase in exposure to PM₁₀.
- 7.29 The assessment steps are detailed below.
- 7.30 The first stage screens the requirement for a more detailed assessment. Should human receptors be identified within 250m from the boundary or 50m from the construction vehicle route up to 250 from the Site entrance, then the assessment proceeds to the next step. Additionally, should ecological receptors be identified within 50m of the Site or the construction vehicle route up to 250m from the Site entrance, then the assessment also proceeds to the next stage.
- 7.31 Should sensitive receptors not be present within the relevant distances then **negligible** impacts would be expected and further assessment is not necessary.
- 7.32 The second stage of the assessment screens the risk of potential dust effects. It should be noted that the standard IAQM terminology of risk has been replaced with significance criteria to allow continuity throughout the ES and comparison of various effects. A site is initially allocated an effect significance (risk) category based on two factors:
- The sensitivity of the area to dust effects, which can be defined as low, medium or high sensitivity; and
 - The scale and nature of the works, which determines the magnitude of dust arising (impact) as: low, medium or high.
- 7.33 The two factors are combined in order to determine the effects significance without mitigation applied.
- 7.34 The influencing factors that define the sensitivity of the area around the Proposed Development to potential construction dust emission impacts are summarised in Table 7.3.

Table 7.3 Construction Dust - Magnitude of Impact

Magnitude	Activity	Criteria
Large	Demolition	■ Total building volume greater than 75,000m³ ■ Potentially dusty construction material (e.g. concrete) ■ On site crushing and screening ■ Demolition activities greater than 12m above ground level
	Earthworks	■ Total site area greater than 110,000m² ■ Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) ■ More than 10 heavy earth moving vehicles active at any one time ■ Formation of bunds greater than 6m in height
	Construction	■ Total building volume greater than 75,000m³ ■ On site concrete batching ■ Sandblasting
	Trackout	■ More than 50 Heavy Duty Vehicle (HDV) trips per day ■ Potentially dusty surface material (e.g. high clay content) ■ Unpaved road length greater than 100m
Medium	Demolition	■ Total building volume 12,000m³ to 75,000³ ■ Potentially dusty construction material ■ Demolition activities 6m to 12m above ground level
	Earthworks	■ Total site area 18,000m² to 110,000m² ■ Moderately dusty soil type (e.g. silt) ■ 5 to 10 heavy earth moving vehicles active at any one time ■ Formation of bunds 3m to 6m in height
	Construction	■ Total building volume 12,000m³ to 75,000m³ ■ Potentially dusty construction material (e.g. concrete) ■ On site concrete batching

Magnitude	Activity	Criteria
	Trackout	■ 20 to 50 HDV trips per day ■ Moderately dusty surface material (e.g. high clay content) ■ Unpaved road length 50m to 100m
Small	Demolition	■ Total building volume less than 12,000m³ ■ Construction material with low potential for dust release (e.g. metal cladding or timber) ■ Demolition activities less than 6m above ground levels ■ Demolition during wetter months
	Earthworks	■ Total site area less than 18,000m² ■ Soil type with large grain size (e.g. sand) ■ Less than 5 heavy earth moving vehicles active at any one time ■ Formation of bunds less than 3m in height
	Construction	■ Total building volume less than 12,000m³ ■ Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	■ Less than 20 HDV trips per day ■ Surface material with low potential for dust release ■ Unpaved road length less than 50m

7.35 Step 2B defines the sensitivity of the area around the Proposed Development to potential dust impacts. The sensitivities of specific receptors are shown in Table 7.4.

Table 7.4 Construction Dust - Sensitivities of Human and Ecological Receptors

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	■ Users expect high levels of amenity ■ High aesthetic or value property ■ People expected to be present continuously for extended periods of time ■ Locations where members of the public are exposed over a time period relevant to the AQO for PM₁₀ e.g. residential properties, hospitals, schools and residential care homes	■ Internationally or nationally designated site e.g. Special Area of Conservation
Medium	■ Users would expect to enjoy a reasonable level of amenity ■ Aesthetics or value of their property could be diminished by soiling ■ People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	■ Nationally designated site e.g. Sites of Special Scientific Interest
Low	■ Enjoyment of amenity would not reasonably be expected ■ Property would not be expected to be diminished in appearance ■ Transient exposure, where people would only be expected to be present for limited periods e.g. public footpaths, shopping streets, playing fields, farmland, short term car parks and roads	■ Locally designated site e.g. Local Nature Reserve

7.36 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 7.5.

Table 7.5 Construction Dust - Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 250
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

7.37 Table 7.6 outlines the criteria for determining the sensitivity of the area to human health impacts.

Table 7.6 Construction Dust - Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Background Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the Source (m)			
			Less than 20	Less than 50	Less than 100	Less than 250
High	Greater than 32µg/m ³	More than 100	High	High	High	Medium
		10 - 100	High	High	Medium	Low
		1 - 10	High	Medium	Low	Low
	28 - 32µg/m ³	More than 100	High	High	Medium	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low
	24 - 28µg/m ³	More than 100	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	Medium	Low	Low	Low
	Less than 24µg/m ³	More than 100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Medium	Greater than 32µg/m ³	More than 10	High	Medium	Low	Low

Receptor Sensitivity	Background Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the Source (m)			
			Less than 20	Less than 50	Less than 100	Less than 250
	28 - 32µg/m ³	1 - 10	Medium	Low	Low	Low
		More than 10	Medium	Low	Low	Low
	24 - 28µg/m ³	1 - 10	Low	Low	Low	Low
		More than 10	Low	Low	Low	Low
	Less than 24µg/m ³	1 - 10	Low	Low	Low	Low
		More than 10	Low	Low	Low	Low
Low	-	1 or more	Low	Low	Low	Low

7.38 Table 7.7 outlines the criteria for determining the sensitivity of the area to ecological impacts.

Table 7.7 Construction Dust - Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	Less than 20	Less than 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

7.39 Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the significance of unmitigated impacts.

7.40 Table 7.8 outlines the effects significance from demolition activities.

Table 7.8 Construction Dust - Effects Significance from Demolition Activities

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	Substantial	Moderate	Moderate
Medium	Substantial	Moderate	Minor
Low	Moderate	Minor	Negligible

- 7.41 Table 7.9 outlines the effects significance from earthworks, construction and trackout activities.

Table 7.9 Construction Dust - Effects Significance from Earthworks, Construction and Trackout Activities

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	Substantial	Moderate	Minor
Medium	Moderate	Moderate	Minor
Low	Minor	Minor	Negligible

- 7.42 Once the effects significance has been determined, site-specific mitigation measures are identified from the IAQM guidance¹¹ in order to reduce potential dust effects. For sites with **negligible** effects, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.
- 7.43 Once the significance of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control impacts through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual impact will normally be **not significant**.

Operational Phase Assessment

- 7.44 The Proposed Development has the potential to impact on existing air quality as a result of road traffic exhaust emissions associated with vehicles travelling to and from the Site during the operational phase. Potential effects were defined by predicting pollutant levels at sensitive human receptor locations using dispersion modelling for the following scenarios:
- 2024 - Model Verification (comparison of predicted and measured pollutant concentrations allowing a verification factor to be made to adjust results accordingly);
 - Opening year Do-Minimum (DM) (predicted flows in 2028 should the Proposed Development not proceed); and,
 - Opening year DS (predicted flows in 2028 should the Proposed Development be completed).
- 7.45 The DM scenario (i.e. without the Proposed Development) included baseline traffic data and the anticipated growth from committed developments for 2028. The DS scenario (i.e. with the Proposed Development) included baseline traffic data, the

¹¹ IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction V2.2.

anticipated growth from committed developments for 2028 in addition to predicted vehicle trips associated with the Proposed Development.

- 7.46 Reference should be made to Appendix G1 for a description of the dispersion modelling inputs.

Potential Development Impacts

- 7.47 Locations sensitive to potential changes in off-site pollutant concentrations were identified within 200m of the highway network in accordance with National Highways guidance¹² on the likely limits of pollutant dispersion from road sources. The criteria provided within DEFRA guidance¹³ on where the AQOs apply, as summarised in Table 7.2, was utilised to determine worst-case receptor positions in the vicinity of links likely to be affected by changes in traffic flows as a result of the Proposed Development.
- 7.48 The sensitivity of receptors to potential changes in pollutant concentrations as a result of road vehicle exhaust emissions is outlined in Table 7.10. It should be noted that these are based on the values provided within the IAQM guidance¹⁴ with additional descriptors to ensure consistency throughout the ES.

Table 7.10 Road Vehicle Exhaust Emissions - Receptor Sensitivity

Receptor Sensitivity	Pollutant Concentration at Receptor in Assessment Year
Very High	110% or more of AQO/Concentration Target
High	103 - 109% of AQO/Concentration Target
Medium	95 - 102% of AQO/Concentration Target
Low	76 - 94% of AQO/Concentration Target
Very Low	75% or less of AQO/Concentration Target

- 7.49 The magnitude of predicted air quality effects was calculated based on the predicted concentration change between the DM and DS scenarios as a proportion of the AQO and Concentration Target. This is outlined in Table 7.11. It should be noted that these are based on the values provided within the IAQM guidance¹⁵ with additional descriptors to ensure consistency throughout the ES.

¹² National Highways (2024) LA 105: Air Quality.

¹³ DEFRA (2022) Local Air Quality Management Technical Guidance (TG22).

¹⁴ IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality.

¹⁵ IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality.

Table 7.11 Road Vehicle Exhaust Emissions - Magnitude of Impact

Predicted Concentration Change as a Proportion of AQO/Concentration Target (%)	Magnitude of Impact
0	Negligible
1	Low
2 - 5	Medium
6 - 10	High
More than 10	Very High

7.50 It should be noted that the categories outlined in Table 7.11 intended to be used by rounding the change in percentage pollutant concentration to whole numbers.

7.51 The interaction between the magnitude of impact and sensitivity of the receptor was utilised to define the significance of effect. This is outlined Table 7.12.

Table 7.12 Road Vehicle Exhaust Emissions - Significance of Effect

Sensitivity of Receptor	Magnitude of Impact			
	Very High	High	Medium	Low
Very High	Substantial	Substantial	Substantial	Moderate
High	Substantial	Substantial	Moderate	Moderate
Medium	Substantial	Moderate	Moderate	Minor
Low	Moderate	Moderate	Minor	Negligible
Very Low	Moderate	Minor	Negligible	Negligible

7.52 Following the prediction of effects at discrete receptor locations, the IAQM provides guidance¹⁶ on determining the overall air quality impact significance of the operation of a development. The following factors are identified for consideration by the assessor:

- The existing and future air quality in the absence of the Proposed Development;
- The extent of current and future population exposure to the effects; and,
- The influence and validity of any assumptions adopted when undertaking the prediction of effects.

7.53 The IAQM guidance states that an assessment must reach a conclusion on the likely significance of the predicted impact. Where the overall effect is **moderate** or **substantial**, the effect is likely to be considered **significant**, whilst if the impact is **slight** or **negligible**, the impact is likely to be considered **not significant**. It should

¹⁶ IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality.

be noted that this is a binary judgement of either it is **significant** or it is **not significant**.

Potential Future Exposure

- 7.54 The Proposed Development has the potential to expose future residents to elevated pollution levels. In order to assess NO₂, PM₁₀ and PM_{2.5} concentrations across the Site, detailed dispersion modelling was undertaken. The dispersion modelling results were compared against the relevant AQOs and Concentration Target in order to determine the potential for exposure of future residents to elevated pollutant concentrations and identify appropriate mitigation, if necessary.

Limitations and Assumptions

- 7.55 A number of assumptions have been made during the undertaking of the assessment. These include the following:
- The meteorological data used for the assessment is representative of the conditions at the Site. Records were obtained based on a review of available observation locations to ensure the most representative record station was selected;
 - Background pollutant concentrations used for the assessment are representative of baseline annual mean pollutant concentrations at the Site. These values were obtained from the DEFRA background mapping study, an industry standard database produced on behalf of the UK Government, to ensure the most accurate representation of background pollutant concentrations;
 - Road traffic emissions of NO_x are predicted to decrease in future years with changes to the UK's fleet in line with Government legislation. An assumption that emission factors remain the same was therefore adopted in order to provide a robust assessment;
 - The traffic data provided for the purpose of the assessment are accurate. These values were provided by Curtins, the Transport Consultants for the project. The data is therefore considered suitable for an assessment of this nature; and,
 - The monitoring data used in the assessment is accurate. Results were obtained from KC's '2025 Air Quality Annual Status Report (ASR)'¹⁷ for use in the assessment. These were the most recent available at the time of assessment and are therefore considered appropriate.
- 7.56 The above assumptions are similar to those required for any project of this nature and the adoption of worst-case parameters, where necessary, has ensured the assessment results can be considered sufficiently robust.

¹⁷ KC (2025) 2025 Air Quality ASR.

Baseline Conditions

- 7.57 Existing air quality conditions in the vicinity of the Site have been identified in order to provide a baseline for assessment. These are detailed in the following Sections.

Local Air Quality Management

- 7.58 As required by the Environment Act (1995), as amended by the Environment Act (2021), KC has undertaken Review and Assessment of air quality within its area of jurisdiction. This process has indicated that concentrations of all pollutants considered within the AQS are currently below the relevant AQOs. As such, no AQMAs have been designated within the borough.

Air Quality Monitoring

- 7.59 Monitoring of pollutant levels is undertaken by KC throughout its area of jurisdiction. Recent NO₂ concentrations recorded in the vicinity of the Proposed Development, as provided in KC's '2025 Air Quality ASR'¹⁸, are shown in Table 7.13.

Table 7.13 Monitoring Results

Monitoring Site		Monitored Annual Mean NO ₂ Concentration (µg/m ³)		
		2022	2023	2024
H1a, H1b	Station co-location	28.4	24.9	24.4
H2a, H2b	Outside 2 Whitefield Lane	30.1	29.0	26.8
H3a, H3b	Outside 1 Whitefield Lane	39.3	33.6	31.7
H4a, H4b	Opp Smithford Walk	25.0	21.5	20.4
H5Aa, H5Ab	Positioned on drainpipe on side of house of 1 Whitefield Lane	31.4	28.1	26.0
H6Aa, H6Ab	Traffic light column adjacent to 2 Whitefield Lane	36.7	32.4	31.4
H7Aa, H7Ab	LC 011 outside of 2 Cronton Road	25.7	24.0	24.5
H8Aa, H8Ab	LC 014 on Cronton Road on property line of 1 Whitefield Lane, just before Cymru Cronton Road	34.4	30.1	29.6

¹⁸ KC (2025) 2025 Air Quality ASR.

Monitoring Site		Monitored Annual Mean NO ₂ Concentration (µg/m ³)		
		2022	2023	2024
H9Aa, H9Ab	LC 001 outside 3 Whitefield Lane	30.3	26.7	27.0
H10a, H10b	Outside 9 Ribchester Way	18.5	15.3	15.7
H11a, H11b	Outside 12 Windy Arbor Brow	21.6	22.4	21.3
H12a, H12b	Halsnead development	28.7	26.3	24.6

7.60 As shown in Table 7.13, annual mean NO₂ concentrations were below the AQO of 40µg/m³ at all monitors in recent years. Reference should be made to *Figure 7.2* for a map of the survey positions.

7.61 KC do not undertake monitoring of PM₁₀ or PM_{2.5} within the vicinity of the Site.

Background Pollutant Concentrations

7.62 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire UK to assist LAs in their Review and Assessment of air quality. The Proposed Development is located in grid square NGR: 347500, 389500. Data for this location was downloaded from the DEFRA website¹⁹ for the purpose of the assessment and is summarised in Table 7.14.

Table 7.14 Background Pollutant Concentration Predictions

Pollutant	Predicted Background Pollutant Concentration (µg/m ³)		
	2024	2025	2028
NO ₂	12.42	11.82	10.42
PM ₁₀	14.98	14.91	14.75
PM _{2.5}	7.31	7.23	7.08

7.63 As shown in Table 7.14, predicted background NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant AQOs and Concentration Target at the Proposed Development.

¹⁹ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>. Accessed on 6/10/2025.

Sensitive Receptors

- 7.64 A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. These have been defined for construction dust and road vehicle exhaust emission effects in the following sections.

Construction Phase Fugitive Dust Emission Receptors

- 7.65 Receptors sensitive to potential dust impacts during demolition, earthworks and construction were identified from a desk-top study of the area up to 250m from the Proposed Development boundary. These are summarised in Table 7.15.

Table 7.15 Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	1 - 10	0
Up to 50	1 - 10	0
Up to 100	10 - 100	-
Up to 250	More than 100	-

- 7.66 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 250m of the Site access. These are summarised in Table 7.15.

Table 7.16 Trackout Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	1 - 10	0
Up to 50	1 - 10	0

- 7.67 There are no ecological receptors within 50m of the Proposed Development boundary or the access route within 250m of the Site entrance. As such, ecological impacts have not been assessed further within this report.
- 7.68 Based on the criteria shown in Table 7.4, the sensitivity of the receiving environment to potential dust impacts was determined as **high**. This was because the identified receptors included residential properties.

Operational Phase Road Vehicle Exhaust Emission Receptors

- 7.69 Receptors sensitive to potential road vehicle exhaust emission effects were identified from a desk top study and are summarised in Table 7.17.

Table 7.17 Operational Phase - Road Vehicle Exhaust Emission Receptors

Receptor		NGR (m)	
		X	Y
R1	Residential - Fox's Bank Lane	347920.8	389110.1
R2	Residential - Fox's Bank Lane	347713.9	388844.8
R3	Residential - Cronton Road	347516.2	388895.0
R4	Residential - Cronton Road	347230.0	389034.2
R5	Residential - Fox's Bank Lane	347828.0	389961.2
R6	Residential - Fox's Bank Lane	347962.8	390246.4
R7	Residential - Fox's Bank Lane	347963.2	390404.9
R8	Residential - Lickers Lane	347874.0	390542.2
R9	Residential - Lickers Lane	347115.8	390492.0
R10	Residential - M57	346276.0	389698.2
R11	Residential - M62	345378.5	389199.3
R12	Residential - Cronton Road	345726.6	389364.5
R13	Residential - Cronton Road	345473.2	389444.7

- 7.70 Reference should be made to *Figure 7.3* for a map of road vehicle exhaust emissions sensitive receptor locations.

Assessment of Environmental Impacts

Construction Phase

- 7.71 Activities such as demolition, excavation, ground works, cutting, construction, concrete batching and storage of materials have the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.
- 7.72 The potential for effects at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.
- 7.73 The desk-top study undertaken to inform the baseline identified a number of sensitive receptors within 250m of the Site boundary. As such, a detailed assessment of potential dust impacts has been undertaken.
- 7.74 It should be noted that predicted dust impacts during the construction phase are considered to be adverse, temporary and short term at the local level.

Magnitude of Impact

Demolition

- 7.75 Demolition will be undertaken at the start of the construction phase and will involve clearance of the existing buildings. It is estimated that the total building volume to be demolished will be between 12,000m³ to 75,000m³. In accordance with the criteria outlined in Table 7.3, the magnitude of potential dust emissions from demolition is therefore **medium**.

Earthworks

- 7.76 Earthworks may involve excavating material, haulage, tipping and stockpiling. The area of the Site is between 18,000m² and 110,000m². In accordance with the criteria outlined in Table 7.3, the magnitude of potential dust emissions from earthworks is therefore **medium**.

Construction

- 7.77 Due to the size of the Proposed Development, the total building volume will be between 12,000m³ and 75,000m³. In accordance with the criteria outlined in Table 7.3, the magnitude of potential dust emissions from construction is therefore **medium**.

Trackout

- 7.78 Based on the Site area, it is anticipated that the unpaved road length may be greater than 100m during certain stages of construction. In accordance with the criteria outlined in Table 7.3, the magnitude of potential dust emissions from trackout is therefore **large**.

Sensitivity of the Area

Dust Soiling

- 7.79 Table 7.15 shows that there are between 1 and 10 **high** sensitivity receptors within 20m of the Site boundary. The sensitivity of the area with respect to dust soiling from demolition, earthworks and construction, as defined using the criteria summarised in Table 7.5, is therefore considered to be **medium**.
- 7.80 Table 7.16 shows that there between 1 and 10 **high** sensitivity receptors within 20m of the road network within 250m of the Site access. The sensitivity of the area with respect to dust soiling from trackout, as defined using the criteria summarised in Table 7.5, is therefore considered to be **medium**.

Human Health

- 7.81 Table 7.14 shows the highest annual mean PM₁₀ background concentration at the Site is 14.91µg/m³. As shown in Table 7.6, where the background annual mean PM₁₀ concentration is below 24µg/m³ and there are between 1 and 10 **high** sensitivity receptors within 20m of the Site boundary, the sensitivity of the area with respect to human health from demolition, earthworks and construction is considered to be **low**.
- 7.82 There are between 1 and 10 **high** sensitivity receptors within 20m of the road network within 250m of the Site access. The sensitivity of the area with respect to human health from trackout, as defined using the criteria in Table 7.6, is therefore considered to be **low**.

Summary of Predicted Dust Effects

- 7.83 The derived dust emission magnitude for each activity has been combined with the sensitivity of the area to determine the significance of unmitigated impacts in line with the methodology set out in Table 7.8 and Table 7.9. A summary of the effects from each dust generating activity is provided in Table 7.18.

Table 7.18 Summary of Potential Dust Effects

Potential Impact	Potential Unmitigated Dust Effects			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Moderate	Moderate	Moderate	Moderate
Human Health	Minor	Minor	Minor	Minor

- 7.84 As indicated in Table 7.18, the potential effects of dust soiling are **moderate** from demolition, earthworks, construction and trackout. The potential effects of human health impacts are **minor** from demolition, earthworks, construction and trackout.
- 7.85 It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Effects were predicted based on a worst-case scenario of works being undertaken at the Site boundary closest to each sensitive area. Therefore, actual effects are likely to be lower than that predicted during the majority of the construction phase.

Operational Phase

- 7.86 Vehicle movements associated with the operation of the Proposed Development will generate exhaust emissions on the local and regional road networks. An assessment was therefore undertaken using dispersion modelling in order to quantify potential changes in pollutant concentrations at sensitive locations in the

vicinity of the Site, as well as consider potential exposure of future residents to AQO and Concentration Target exceedances.

7.87 The assessment considered the following scenarios:

- 2024 - Verification;
- 2028 - DM; and
- 2028 - DS.

7.88 Reference should be made to Appendix G1 for full assessment input details.

Potential Development Impacts

Predicted Concentrations

7.89 Annual mean NO₂ concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. These are summarised in Table 7.19.

Table 7.19 Road Traffic Exhaust Emissions - Predicted Annual Mean NO₂ Concentrations

Receptor		Predicted Annual Mean NO ₂ Concentration (µg/m ³)		
		DM	DS	Change
R1	Residential - Fox's Bank Lane	16.52	16.57	0.05
R2	Residential - Fox's Bank Lane	19.86	19.96	0.10
R3	Residential - Cronton Road	19.62	19.69	0.07
R4	Residential - Cronton Road	17.62	17.65	0.03
R5	Residential - Fox's Bank Lane	18.24	18.26	0.02
R6	Residential - Fox's Bank Lane	16.62	16.64	0.02
R7	Residential - Fox's Bank Lane	16.80	16.84	0.04
R8	Residential - Lickers Lane	17.35	17.36	0.01
R9	Residential - Lickers Lane	16.74	16.75	0.01
R10	Residential - M57	27.48	27.49	0.01
R11	Residential - M62	26.18	26.19	0.01
R12	Residential - Cronton Road	22.25	22.26	0.01
R13	Residential - Cronton Road	23.32	23.32	0.00

7.90 As indicated in Table 7.19, predicted annual mean NO₂ concentrations were below the AQO of 40µg/m³ at all sensitive receptors in both scenarios.

7.91 Annual mean PM₁₀ concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. These are summarised in Table 7.20.

Table 7.20 Road Traffic Exhaust Emissions - Predicted Annual Mean PM₁₀ Concentrations

Receptor		Predicted Annual Mean PM ₁₀ Concentration (µg/m ³)		
		DM	DS	Change
R1	Residential - Fox's Bank Lane	15.46	15.49	0.02
R2	Residential - Fox's Bank Lane	16.48	16.51	0.03
R3	Residential - Cronton Road	16.51	16.53	0.02
R4	Residential - Cronton Road	15.74	15.75	0.01
R5	Residential - Fox's Bank Lane	15.75	15.76	0.01
R6	Residential - Fox's Bank Lane	15.49	15.50	0.01
R7	Residential - Fox's Bank Lane	15.61	15.63	0.01
R8	Residential - Lickers Lane	15.76	15.77	0.01
R9	Residential - Lickers Lane	15.55	15.55	0.00
R10	Residential - M57	17.76	17.76	0.00
R11	Residential - M62	16.85	16.85	0.00
R12	Residential - Cronton Road	17.08	17.09	0.00
R13	Residential - Cronton Road	17.74	17.74	0.00

7.92 As indicated in Table 7.20, predicted annual mean PM₁₀ concentrations were below the AQO of 40µg/m³ at all sensitive receptors in both scenarios.

7.93 Annual mean PM_{2.5} concentrations were predicted at the sensitive receptor locations for the DM and DS scenarios. These are summarised in Table 7.21.

Table 7.21 Road Traffic Exhaust Emissions - Predicted Annual Mean PM_{2.5} Concentrations

Receptor		Predicted Annual Mean PM _{2.5} Concentration (µg/m ³)		
		DM	DS	Change
R1	Residential - Fox's Bank Lane	7.84	7.85	0.01
R2	Residential - Fox's Bank Lane	8.38	8.40	0.02
R3	Residential - Cronton Road	8.41	8.43	0.01
R4	Residential - Cronton Road	8.00	8.01	0.00
R5	Residential - Fox's Bank Lane	8.02	8.03	0.00
R6	Residential - Fox's Bank Lane	7.86	7.86	0.00
R7	Residential - Fox's Bank Lane	7.92	7.93	0.01
R8	Residential - Lickers Lane	8.00	8.00	0.00
R9	Residential - Lickers Lane	7.89	7.89	0.00

Receptor		Predicted Annual Mean PM _{2.5} Concentration (µg/m ³)		
		DM	DS	Change
R10	Residential - M57	9.27	9.27	0.00
R11	Residential - M62	8.74	8.74	0.00
R12	Residential - Cronton Road	8.75	8.75	0.00
R13	Residential - Cronton Road	9.07	9.07	0.00

- 7.94 As indicated in Table 7.21, predicted annual mean PM_{2.5} concentrations were below the Concentration Target of 10µg/m³ at all sensitive receptors in both scenarios.

Significance of Effects

- 7.95 Predicted effects on annual mean NO₂ concentrations at sensitive receptor locations as a result of operational phase road vehicle exhaust emissions are summarised in Table 7.22.

Table 7.22 Road Traffic Exhaust Emissions - Effect Significance NO₂

Receptor		Sensitivity	Magnitude of Effect	Effect Significance
R1	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R2	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R3	Residential - Cronton Road	Very Low	Negligible	Negligible
R4	Residential - Cronton Road	Very Low	Negligible	Negligible
R5	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R6	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R7	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R8	Residential - Lickers Lane	Very Low	Negligible	Negligible
R9	Residential - Lickers Lane	Very Low	Negligible	Negligible
R10	Residential - M57	Very Low	Negligible	Negligible
R11	Residential - M62	Very Low	Negligible	Negligible
R12	Residential - Cronton Road	Very Low	Negligible	Negligible
R13	Residential - Cronton Road	Very Low	Negligible	Negligible

- 7.96 As shown in Table 7.22, effects on annual mean NO₂ concentrations as a result of operational phase road vehicle exhaust emissions were predicted to be **negligible** at all receptor locations.

- 7.97 Predicted effects on annual mean PM₁₀ concentrations at sensitive receptor locations as a result of operational phase road vehicle exhaust emissions are summarised in Table 7.23.

Table 7.23 Road Traffic Exhaust Emissions - Effect Significance PM₁₀

Receptor		Sensitivity	Magnitude of Effect	Effect Significance
R1	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R2	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R3	Residential - Cronton Road	Very Low	Negligible	Negligible
R4	Residential - Cronton Road	Very Low	Negligible	Negligible
R5	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R6	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R7	Residential - Fox's Bank Lane	Very Low	Negligible	Negligible
R8	Residential - Lickers Lane	Very Low	Negligible	Negligible
R9	Residential - Lickers Lane	Very Low	Negligible	Negligible
R10	Residential - M57	Very Low	Negligible	Negligible
R11	Residential - M62	Very Low	Negligible	Negligible
R12	Residential - Cronton Road	Very Low	Negligible	Negligible
R13	Residential - Cronton Road	Very Low	Negligible	Negligible

- 7.98 As shown in Table 7.23, effects on annual mean PM₁₀ concentrations as a result of operational phase road vehicle exhaust emissions were predicted to be **negligible** at all receptor locations.

- 7.99 Predicted effects on annual mean PM_{2.5} concentrations at sensitive receptor locations as a result of operational phase road vehicle exhaust emissions are summarised in Table 7.24.

Table 7.24 Road Traffic Exhaust Emissions - Effect Significance PM_{2.5}

Receptor		Sensitivity	Magnitude of Effect	Effect Significance
R1	Residential - Fox's Bank Lane	Low	Negligible	Negligible
R2	Residential - Fox's Bank Lane	Low	Negligible	Negligible
R3	Residential - Cronton Road	Low	Negligible	Negligible
R4	Residential - Cronton Road	Low	Negligible	Negligible
R5	Residential - Fox's Bank Lane	Low	Negligible	Negligible
R6	Residential - Fox's Bank Lane	Low	Negligible	Negligible
R7	Residential - Fox's Bank Lane	Low	Negligible	Negligible

Receptor		Sensitivity	Magnitude of Effect	Effect Significance
R8	Residential - Lickers Lane	Low	Negligible	Negligible
R9	Residential - Lickers Lane	Low	Negligible	Negligible
R10	Residential - M57	Low	Negligible	Negligible
R11	Residential - M62	Low	Negligible	Negligible
R12	Residential - Cronton Road	Low	Negligible	Negligible
R13	Residential - Cronton Road	Low	Negligible	Negligible

7.100 As shown in Table 7.24, effects on annual mean PM_{2.5} concentrations as a result of operational phase road vehicle exhaust emissions were predicted to be **negligible** at all receptor locations.

7.101 Predicted effects from the Proposed Development are considered to be adverse and permanent in nature.

Potential Future Exposure

7.102 The Proposed Development has the potential to expose future residents to elevated pollution levels as a result of road vehicle exhaust emissions in the vicinity of the Site. Dispersion modelling was therefore undertaken with the inputs described in *Appendix G1* to quantify air quality conditions across the Site. Reference should be made to *Figures 7.4* to *7.6* for graphical representations of predicted annual mean NO₂, PM₁₀ and PM_{2.5} concentrations.

7.103 As shown in *Figure 7.4*, annual mean NO₂ concentrations were predicted to be below the AQO of 40µg/m³ at all sensitive locations across the Site. The maximum level was 25.86µg/m³.

7.104 As shown in *Figure 7.5*, annual mean PM₁₀ concentrations were predicted to be below the AQO of 40µg/m³ at all sensitive locations across the Site. The maximum level was 17.05µg/m³.

7.105 As shown in *Figure 7.6*, annual mean PM_{2.5} concentrations were predicted to be below the Concentration Target of 10µg/m³ at all sensitive locations across the Site. The maximum level was 8.87µg/m³.

7.106 Based on the assessment results, future residents are not predicted to be exposed to pollutant concentrations above the relevant AQOs and Concentration Target. As such, the Site is considered suitable for the proposed use from an air quality perspective.

Overall Operation Phase Road Vehicle Exhaust Emissions Effect Significance

- 7.107 The overall significance of operational phase road vehicle exhaust emissions effects was determined as **negligible**. This was based on the conservative predicted impact at any discrete receptor location and the considerations outlined previously. Further justification is provided in Table 7.25.

Table 7.25 Overall Operation Phase Road Vehicle Exhaust Emissions Effect Significance

Guidance	Control Measure
The existing and future air quality in the absence of the Proposed Development	Predicted annual mean NO₂, PM₁₀ and PM_{2.5} concentrations were below the relevant AQOs and Concentration Target at all locations in the DM and DS scenarios The predicted concentrations are considered unlikely to change significantly in the absence of the proposals given the established nature of the area
The extent of current and future population exposure to the effects	The Proposed Development is not predicted to have significant effects on the population exposed to exceedances of the AQOs and Concentration Target
The influence and validity of any assumptions adopted when undertaking the prediction of effects	It was assumed that vehicle exhaust emission rates and background concentrations will not reduce in future years. This provides conservative results when compared with DEFRA and National Highways methodologies Due to the adopted assumptions it is considered the presented results are sufficiently robust for an assessment of this nature

- 7.108 The IAQM guidance²⁰ states that only if the impact is above **slight**, the effect is considered **significant**. As effects were predicted to be **negligible**, overall effects are considered **not significant**, in accordance with the stated methodology.

Interim Planning Guidance for PM_{2.5}

- 7.109 Interim Planning Guidance²¹ on the consideration of the PM_{2.5} targets identified in the Environment Act (2021) in planning decisions has been produced by DEFRA. This requires evidence that the key sources of air pollution within a development have been identified and appropriate action to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable be provided in support of planning applications. To assist the process, two questions and associated considerations

²⁰ IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality.

²¹ <https://uk-air.defra.gov.uk/pm25targets/planning>. Accessed on 6/10/2025.

are provided. These are summarised in Table 7.26, along with the Proposed Development response.

Table 7.26 Interim Planning Guidance Questions

Question	Response
How has exposure to PM_{2.5} been considered when selecting the development site? Factors to consider include: ■ Site proximity to people (particularly large populations and / or vulnerable groups, e.g. schools, hospitals, care homes, areas of deprivation) and the impact of the development on these; ■ Site proximity to pollution sources and the impact of these on users of the development; and ■ Exposure and emissions during both construction and in-use.	The Site is bordered by the M62 to the north, industrial properties to the south and agricultural fields to the west and the east. There are no residential properties, schools, hospitals or care homes within the immediate vicinity of the Site. As such, the scheme is distanced from large populations and vulnerable groups. Emissions from the Proposed Development are unlikely to have an impact on any receptor. This is supported by the assessment results The Site is adjacent to the M62. However, the proposed development area is set back approximately 50m from the M62. As outlined in the assessment results, PM_{2.5} concentrations at all sensitive locations across the Site were predicted to be below the Concentration Target As outlined in Table 7.27, a number of mitigation measures will be used throughout the construction phase in order to reduce fugitive dust emissions as far as practicable. This will control potential exposure at off-site locations

Question	Response
What actions and / or mitigations have been considered to reduce PM_{2.5} exposure for development users and nearby receptors and to reduce emissions of PM_{2.5} and its precursors? Factors to consider include: ■ Site layout; ■ The development's design; ■ Technology used in the construction or installed for use in the development; and ■ Construction and future use of the development.	The Proposed Development has been designed with residential properties located approximately 50m from the M62 and associated road vehicle exhaust emissions. As such, PM_{2.5} exposure for future residents are reduced In order to reduce emissions of PM_{2.5} with associated impacts at nearby receptors and on Site, the following measures have been included within the scheme: ■ Provision of Electric Vehicle charging points to reduce reliance on diesel and petrol vehicles ■ Provision of secure cycle storage to encourage the use of sustainable transport modes ■ Provision of Travel Plan to encourage the use of sustainable transport modes Further to the above, in order to reduce emissions during the construction phase, a number of mitigation measures will be used to minimise dust generation from associated activities. These are outlined in Table 7.27

- 7.110 Based on the responses provided in Table 7.26 and the results of the assessment, as outlined in the previous Sections, it is considered that the Proposed Development has identified key sources of air pollution and taken appropriate action to minimise emissions of PM_{2.5}.

Mitigation Measures

Construction Phase

- 7.111 Due to the size and nature of the Proposed Development, a Construction Environmental Management Plan (CEMP) will be produced to control potential air quality effects during the construction phase. This can be secured through planning condition. The measures outlined in Table 7.27 will be included within the CEMP to mitigate fugitive dust emissions during construction. These are based on the advice provided within the IAQM guidance²² and are therefore considered suitable for the Site.

²² IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction V2.2.

Table 7.27 Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Communications	■ Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site ■ Display the name and contact details of person(s) accountable for air quality and dust issues on the Site boundary. This may be the environment manager/engineer or the Site manager ■ Display the head or regional office contact information ■ Develop and implement a Dust Management Plan (DMP) or similar, which may include measures to control other emissions, approved by KC
Site management	■ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken ■ Make the complaints log available to KC upon request ■ Record any exceptional incidents that cause dust and/or air emissions, either on- or off- Site, and the action taken to resolve the situation in the log book
Monitoring	■ Undertake daily on-site and off-site inspection to monitor dust, record inspection results, and make the log available to the KC upon request ■ Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the KC upon request ■ Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions

Issue	Control Measure
Site preparation	■ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible ■ Erect solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on site ■ Fully enclose specific operations where there is a high potential for dust production and they are active for an extensive period ■ Avoid site runoff of water or mud ■ Keep site fencing, barriers and scaffolding clean using wet methods ■ Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used ■ Cover, seed or fence stockpiles to prevent wind whipping
Operating vehicle/machinery and sustainable travel	■ Ensure all vehicles switch off engines when stationary - no idling vehicles ■ Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
Operations	■ Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques ■ Ensure an adequate water supply on the Site for effective dust suppression, using non-potable water where possible and appropriate ■ Use enclosed chutes and conveyors and covered skips ■ Minimise drop heights and use fine water sprays wherever appropriate ■ Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	■ No bonfires and burning of waste materials

Issue	Control Measure
Demolition	■ Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground ■ Avoid explosive blasting, using appropriate manual or mechanical alternatives ■ Bag and remove any biological debris or damp down such material before demolition
Construction	■ Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out ■ Avoid scabbling (roughening of concrete surfaces) if possible ■ Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos to prevent escape of material
Trackout	■ Use water-assisted dust sweeper on access and local roads, if required ■ Avoid dry sweeping of large areas ■ Ensure vehicles entering and leaving site are covered to prevent escape of materials ■ Implement a wheel washing system, if required ■ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the Site exit ■ Access gates to be located at least 10m from receptors where possible

Operational Phase

7.112 Air quality effects as a result of operational phase road vehicle exhaust emissions were predicted to be **not significant**. As such, additional mitigation was not considered necessary. However, a number of measures have been proposed in accordance with the requirements of the IAQM guidance²³ to encourage the use of sustainable transport modes, manage vehicle flow and reduce pollution around the Site. These included the following:

²³ IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality.

- Provision of a Travel Plan to encourage sustainable modes of transport to and from the Site;
 - Provision of secure and covered cycle parking spaces; and,
 - Provision of EV charging points.
- 7.113 The above methods can be secured through planning condition and would further reduce the overall pollutant burden of the Proposed Development.

Residual Effects

- 7.114 Following the effective implementation of the mitigation measures, the **residual effects** arising from the Proposed Development during the construction or operational phases are predicted to be **not significant**.

Cumulative Effects

- 7.115 A number of development schemes were identified within the vicinity of the Site. These may lead to a cumulatively significant effect as a result of fugitive dust emissions and road vehicle exhaust emissions. These have been considered in the following Sections.

Construction Phase

- 7.116 Should permission be granted for other committed developments within 500m of the Site, it is possible that cumulative dust effects may occur during construction. However, fugitive dust emissions associated with the Proposed Development will be minimised through the outlined mitigation measures. A similar level of control would also be expected for any other scheme. Therefore, residual cumulative effects are predicted to be **not significant**.

Operational Phase

- 7.117 Cumulative vehicle exhaust emission effects may occur during operation as a result of additional traffic movements associated with committed developments in the vicinity of the Site. However, the traffic data utilised for the assessment included predicted changes in flows as a result of committed developments and Local Plan traffic. As outlined previously, residual effects were predicted to be **not significant**. As such, residual cumulative effects are also predicted to be **not significant**.

Summary

- 7.118 The Proposed Development has the potential to cause air quality effects as a result of dust and road traffic exhaust emissions. As such, an assessment was undertaken in order to determine baseline conditions and assess the significance of predicted effects.

- 7.119 The desktop study indicated that there were no AQMAs in the vicinity of the Site and background pollutant concentrations were below the relevant AQOs and Concentration Target. Local air quality monitoring results also indicated that pollutant levels were below the relevant AQOs.
- 7.120 During the construction phase of the Proposed Development there is the potential for air quality effects as a result of fugitive dust emissions. These were assessed in accordance with the IAQM methodology²⁴. The results indicated that subsequent to the implementation of mitigation measures, potential air quality effects from dust generated during demolition, earthworks, construction and trackout were classified as **not significant**.
- 7.121 During the operational phase of the Proposed Development, there is the potential for air quality effects as a result of road traffic exhaust emissions associated with vehicles travelling to and from the Site. These were assessed using dispersion modelling and best practice guidance. Review of the results indicated that effects were predicted to be **not significant**.
- 7.122 The potential for exposure of future residents to poor air quality was also assessed using dispersion modelling. This indicated that pollutant concentrations were below the relevant criteria across the Site. As such, the predicted effect is **not significant**.
- 7.123 A CEMP will be produced in support of the Proposed Development. Measures outlined within the document will be reviewed and updated as necessary. They will then continue to be implemented in order to reduce potential effects associated with fugitive dust emissions as far as practicable. Based on the inclusion of these measures, air quality effects associated with dust emissions were predicted to be **not significant**. As such, additional mitigation is not considered necessary.
- 7.124 The results of the assessment indicated that air quality effects associated with operational phase road vehicle exhaust emissions were **not significant**. As such, additional mitigation is not considered necessary though a number of measures have been suggested as enhancements to further reduce the overall pollutant burden of the Proposed Development.
- 7.125 Based on the results of the assessment, effects associated with the Proposed Development are considered to be **not significant**.

²⁴ IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction V2.2.

8.0 Noise and Vibration

Introduction

- 8.1 This Chapter of the Environmental Statement ('ES') has been prepared by Hepworth Acoustics on behalf of Onward Homes Ltd and Starship Build Ltd ('the Applicant'). It assesses the Proposed Development described in Chapter 3 in relation to noise and vibration.
- 8.2 The baseline situation is considered before the likely environmental effects of the Proposed Development are identified during its construction and operational phases. Mitigation measures to reduce any negative environmental effects are identified as appropriate, before the residual environmental effects are assessed.
- 8.3 This Chapter is supported by the following technical appendices provided at Volume 2 of this ES:
- Appendix H1 - Noise Impact Assessment for Proposed Residential Development - Halsnead Farm (& Baseline Noise Survey Data)
- 8.4 This chapter has been prepared by James Shaw MIOA, who is a full corporate Member of the Institute of Acoustics and holds a Diploma in Acoustics and Noise Control from the Institute of Acoustics. James has more than 10 years' professional experience working as an acoustic consultant.
- 8.5 Over this period, James has been responsible for the preparation of ES chapters relating to noise and vibration for a broad range of development types, including residential, commercial, and infrastructure schemes.
- 8.6 The preparation of this ES Chapter has also been overseen and reviewed by Donald Quinn BSc FIOA, who is a Fellow of the Institute of Acoustics, holds a BSc (Hons) in Audio Technology from the University of Salford, has over 25 years of professional experience working as an acoustic consultant and has been working on projects with ES Chapters for over 20 years.

Legislation, Policy and Guidance

National Planning Policy Framework

- 8.7 The National Planning Policy Framework ('NPPF') December 2024 states that "Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

8.8 In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;”

8.9 In the accompanying Planning Practice Guidance (‘PPG’) on noise there is some general guidance including relevant factors to be considered and possible approaches to mitigation, which have been taken into account in the assessment described in this Chapter.

8.10 However, the relevant PPG does not contain any specific technical guidance or acoustic design criteria which is relevant to the development proposed at the assessment site.

Noise Policy Statement for England

8.11 The Noise Policy Statement for England (‘NPSE’) 2010 which is referred to in the NPPF, includes three aims:

- Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development;
- Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development;
- Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

Professional Practice Guidance on Planning & Noise

8.12 The Professional Practice Guidance on Planning & Noise (‘ProPG’) provides *‘guidance on a recommended approach to the management of noise within the planning system in England’*, for proposed new residential developments on land that is exposed to transportation noise.

8.13 ProPG recommends a staged approach to assessment. Stage 1 is an initial site noise risk assessment, indicating whether the proposed site is considered to pose a negligible, low, medium or high risk from a noise perspective. Stage 2 is a full assessment to consider good acoustic design. The guidelines in terms of suitable acoustic design criteria are broadly consistent with the guidance of BS8233 (see below).

Statutory Powers

- 8.14 Additional statutory powers to control noise exist outside of the planning system, and the granting of planning permission does not remove the need to comply with these controls. The major legislative instruments are:
- 8.15 Part III of the Environmental Protection Act 1990, as amended by the Noise and Statutory Nuisance Act 1993, which requires local authorities to serve notices where noise emitted from premises constitutes a statutory nuisance.
- 8.16 Part III of the Control of Pollution Act 1974 which gives local authorities certain powers to control noise from construction sites.
- 8.17 It is usual for the implementation of this legislation to be applied under delegated powers by the Environmental Health Department of the relevant local authority, in this instance Knowsley Metropolitan Borough Council (KMBC’).

Local Planning Policy

- 8.18 The development plan policies relevant to noise are set out in the Knowsley Local: Core Strategy (KLCS) adopted in January 2016.
- 8.19 Policy CS2 of the KLCS ('Development Principles') states that:

“New development in Knowsley and the preparation of subsequent stages of the Local Plan will be expected to support the following development principles:

Principle 4: Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote quality of place by:

...

e) Mitigating potential negative impacts of traffic growth and road traffic on highway safety, air quality, noise and health;

...

j) Minimising negative impact upon flood risk, air quality, water quality, land quality, soil quality, and noise or vibration levels and ensuring any negative impacts are appropriately mitigated”

- 8.20 In the transition to the Local Plan system, a number of the original Knowsley UDP policies were saved. As a result, a number of UDP policies remain in effect, as listed in Appendix C of the Core Strategy.
- 8.21 Among these, Policy ENV2: Noise and Vibration remains extant.

8.22 Policy ENV2: Noise and Vibration states that:

1. *Development that will either cause an unacceptable increase in noise or vibration levels or itself be subject to unacceptable noise or vibration from an existing source will not be permitted.*
2. *Where developments are permitted, conditions may be attached to the planning permission to ensure effective noise insulation or other required mitigation measures are carried out.*

8.23 The Site forms part of the wider Halsnead Garden Village allocation, which is supported by the *Halsnead Garden Village Masterplan Supplementary Planning Document* (SPD). The SPD provides detailed guidance on the delivery of sustainable development across the Garden Village, including the integration of environmental mitigation.

8.24 Paragraphs 6.22 and 6.23 of the SPD specifically address motorway noise and air quality, stating that attenuation measures will be required along the M62 boundary to create an acceptable residential environment. The SPD further promotes a strategic approach to noise and air quality mitigation that is integrated with green infrastructure and surface water management, by creating an environmental corridor immediately north of the M62.

British Standards and Other National Guidance

8.25 The following documents have been used in the assessment described in this chapter:

- 8.26 BS5228-1:2009+A1:2014 – ‘*Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1*’. This document (which is referred to hereafter in this chapter as BS5228-1) contains useful guidance on the measurement, prediction and control of construction noise. In particular it describes practical measures to minimise the impact of construction noise which have been taken fully into account in the remedial measures recommended in this chapter for the proposed development.
- 8.27 Department of Transport Memorandum ‘*Calculation of Road Traffic Noise*’ (1988) (which is referred to hereafter in this chapter as CRTN) describes a formal procedure for calculating traffic noise for proposed new or altered highways. The procedure considers a number of factors including the volume of traffic, the speed of traffic, and the composition of the traffic flow. For environmental assessment purposes it is also used as a basis for undertaking comparative traffic noise calculations i.e. to compare the ‘with development’ and ‘without development’ scenarios.

- 8.28 Institute of Environmental Management and Assessment (IEMA) '*Guidelines for environmental noise impact assessment*' (2014) was originally published in draft format in 2002 by a joint working party of IEMA (now known as ISEP) and the Institute of Acoustics. The final published version represents the most relevant 'best practice' guidance for undertaking noise studies for EIA purposes. It includes examples of tables of scales of significance of noise change, but these are only examples, and it is stated that it is necessary for the individual assessor to define appropriate scales of significance for the particular type of noise/development being evaluated.
- 8.29 Highways England '*Design Manual for Roads and Bridges*' (2020) set out the requirements for assessing and reporting the effects of highways noise and vibration from construction, operation and maintenance projects. For environmental assessment purposes it also provides a basis for the determination of the significance of the effect depending upon both the magnitude of change of road traffic noise levels as predicted using the methodology with CRTN.
- 8.30 BS8233:2014 '*Guidance on sound insulation and noise reduction for buildings*' (which is referred to hereafter in this chapter as BS8233). This document contains guidance on the control of noise in and around buildings. It is applicable to the design of new buildings but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of existing buildings. In particular the standard includes recommended acoustic design criteria, as absolute values, for habitable rooms and gardens of proposed new dwellings.

Assessment Methodology

Effects Not Considered to be Significant

- 8.31 The following effects are not considered significant and are not considered further in this Chapter:
- Ground-borne vibration during construction, as the development is not expected to require piled foundations and therefore there will be no significant vibration producing activities during construction; and
 - Operational vibration, as completed residential developments do not typically generate perceptible vibration at on or off-site receptors.

During Construction

- 8.32 The methodology for assessing noise impacts of the temporary construction phase of the Proposed Development has by necessity been qualitative rather than quantitative. This is because at this stage (i.e., planning application stage) contractors have not been appointed and there is no detailed information available regarding the type of construction plant, operations, programme, etc.

- 8.33 The assessment has therefore focussed on the need to mitigate construction noise as far as is reasonably practicable by implementing appropriate measures in accordance with the 'best practice' guidance that is set out in BS5228-1.
- 8.34 The assessment of construction noise has been undertaken based on reasonable assumptions that typical construction activities will be carried out during standard daytime working hours using conventional plant and equipment operating at representative sound power levels derived from BS5228-1. In the absence of finalised construction phasing or plant schedules, indicative traffic flows associated with material deliveries and workforce movements have also been assumed
- 8.35 For the construction phase, the study area for this Chapter has been defined as the Site and the existing residential properties that adjoin the Site boundary, as these receptors are anticipated to be the most exposed to periods of construction-related noise. Baseline noise levels have been measured at representative locations within these areas.
- 8.36 The identified receptors include two existing dwellings to the west of the site identified as receptors R1 & R2 on Figure 1 in Appendix H1 and two dwellings to the east boundary of the site marked as receptors R3 & R4 on Figure 1 in Appendix H1. The study area also includes any new dwellings that become occupied during phased construction of the Proposed Development, which would be considered becoming noise-sensitive receptors at the point of occupation.

During Operation

- 8.37 Besides the potential impact of existing noise on proposed new dwellings, the potential noise impact associated with the completed development will be limited to changes in road traffic noise on the existing local road network. Changes in traffic noise resulting from such changes in traffic flow on existing roads can be predicted on the basis of the calculation procedure set out in the Department of Transport document '*Calculation of Road Traffic Noise*', 1988 ('CRTN').
- 8.38 In this Chapter, potential long term traffic noise impacts resulting from operation of the completed development have been assessed using a comparative approach. This involves investigating the difference between calculated traffic noise levels for the 'without development' and 'with development' scenarios, based upon the anticipated future traffic flows.
- 8.39 Potential traffic noise changes have been assessed for existing dwellings on (or near) Fox's Bank Lane, and for a sample of other roads in the wider area. Traffic noise calculations are based on traffic flow data supplied by Curtins for the corresponding do-nothing and with-development scenarios.

Significance Criteria

During Construction

- 8.40 Potential noise impacts associated with the temporary construction phase of the Proposed Development have been assessed using the 'ABC Method' described in Section E.3.2 of BS5228-1:2009+A1:2014. This method establishes threshold values for the onset of potential significant effects at noise-sensitive receptors, depending on the prevailing ambient sound level.
- 8.41 Where predicted construction noise levels are available, these should be compared to the relevant BS5228 threshold values. The magnitude of potential construction noise impact may then be determined according to the difference between predicted and threshold levels.
- 8.42 The following scale of significance has been adopted for this assessment:
- More than 5 dB below BS5228 ABC threshold value: Negligible impact;
 - 0 to 5 dB below BS5228 ABC threshold value: Minor Adverse impact;
 - 0 to 5 dB above BS5228 ABC threshold value: Moderate Adverse impact; and
 - More than 5 dB above BS5228 ABC threshold value: Substantial adverse impact.
- 8.43 In accordance with accepted EIA practice, impacts classified as Moderate Adverse or Substantial Adverse are considered to be significant in EIA terms.

During Operation

- 8.44 There are no legally defined methodologies or criteria to employ when determining the magnitude of the noise impact resulting from the operation of a proposed residential development on the external environment (i.e. potential gradual changes in traffic noise on existing roads).
- 8.45 The assessment of operational traffic noise has been undertaken for two scenarios: a 'do-nothing' scenario, representing future baseline traffic flows without the Proposed Development, and a 'with-development' scenario, representing predicted traffic flows inclusive of the Proposed Development. Traffic growth has been accounted for using TEMPro-derived growth factors, which provide a robust, area-based method for forecasting future conditions.
- 8.46 Although site-specific committed development data have not been explicitly modelled, the TEMPro approach inherently captures background traffic increases associated with Local Plan growth and is therefore considered appropriate and precautionary for Environmental Statement purposes.

- 8.47 ISEP has produced guidelines for noise impact assessment which include examples of tables of impacts relating to changes in noise level specifically for use in Environmental Statements.
- 8.48 A scale of significance of traffic noise impacts has therefore been developed for the operation of the Proposed Development which is based upon the ISEP guidelines and is set out in Table 8.1 below.

Table 8.1 Noise Impact of Traffic Generated by the Proposed Development

Increase in Traffic Noise Level in dB(A)	Subjective Response	Significance
0 – 0.9	No change to barely perceptible increase	Negligible impact
1.0 – 2.9	Low but perceptible increase	Minor Adverse impact
3.0 – 4.9	Noticeable increase	Moderate Adverse impact
5.0 – 9.9	Up to a doubling of loudness	Major Adverse impact

- 8.49 In line with EIA guidance, effects assessed as Moderate Adverse or Major Adverse are considered significant in EIA terms, whereas Negligible and Minor Adverse effects are not considered significant.
- 8.50 For assessing traffic noise impact on the proposed new dwellings, the relevant guidance is set out in absolute terms in BS8233:2014. As described in Section 2 of Appendix H1 (Volume 2 to this ES), appropriate acoustic design criteria have been adopted from BS 8233 in order to fully protect residential amenity.
- 8.51 These criteria are as follows:
- Daytime (07:00-23:00) levels below 35 dB $L_{Aeq(16 \text{ hour})}$ inside living rooms;
 - 55 dB L_{Aeq} in private rear gardens as far as is reasonably practicable; and
 - Night-time (23:00-07:00) noise levels not exceeding 30 dB $L_{Aeq(8 \text{ hour})}$ and generally not exceeding 45 dB L_{Amax} in bedrooms.
- 8.52 Achieving these criteria would ensure that there would be Negligible impact. The assessment of noise impact has taken into account not only the magnitude of the predicted noise level but also the duration and temporal characteristics of exposure at receptors, consistent with ISEP guidance.
- 8.53 Where noise occurs intermittently or for limited durations, this has been reflected in the assessment of significance, as the potential for disturbance is reduced compared to continuous exposure.

- 8.54 Baseline noise measurements and the proposed site layout indicate that some form of noise mitigation will be required to achieve the recommended internal and external design criteria set out in BS 8233:2014. The specific measures such as façade treatments, ventilation specifications, and garden boundary screening are detailed in the accompanying Planning Noise Assessment (Appendix H1) These recommendations will be refined and implemented at the detailed design stage to ensure compliance with relevant standards and the protection of residential amenity.

Limitations and Assumptions

- 8.55 The assessment of construction noise has by necessity been qualitative rather than quantitative. This is because at this stage there is no detailed information available regarding the type of construction plant to be deployed, the construction operations, programme, etc.
- 8.56 The assessment has therefore focussed on the need to mitigate likely significant effects of construction noise as far as is reasonably practicable by implementing appropriate measures in accordance with the ‘*best practice*’ guidance that is set out in BS 5228.
- 8.57 Mitigation measures set out this chapter are necessarily outline in nature at this stage. The need, type and extent of mitigation measures is established, however detailed specification is a detailed design matter. implementation of an adequate scheme of noise mitigation measures can be ensured by the use of an appropriately worded planning condition in the usual way.
- 8.58 The construction noise assessment has been undertaken based on reasonable assumptions regarding the type of construction activities, plant usage, working hours and sequencing, as detailed construction methodologies are not yet available at this stage of the planning process. It has been assumed that traditional strip foundations will be used, with no requirement for piling, and that construction works will take place during standard daytime hours only, with no night-time or Sunday working.
- 8.59 These assumptions reflect typical practices for residential development of this scale and represent a conservative worst-case scenario for assessment purposes. The outcomes of the assessment may therefore be subject to refinement at the detailed design and construction planning stage; however, the adoption of a Construction Environmental Management Plan (CEMP) will ensure that noise is controlled in accordance with best practice.
- 8.60 Operational traffic data have been provided for the opening year scenarios with and without the Proposed Development. Wider cumulative traffic growth has not been explicitly modelled; however, the traffic data incorporate background growth factors

derived from TEMPro, which provides a reasonable allowance for general development-related increases in traffic across the local network. On this basis, the assessment is considered to provide a suitably robust representation of likely future conditions.

Baseline Conditions

Current Conditions

- 8.61 A baseline noise monitoring survey was carried out to determine the ambient noise climate in the daytime at a location representative of the nearest proposed dwellings to the boundary of the Site. The noise monitoring locations are indicated on Figure 1 within Appendix H1.
- 8.62 Additional baseline noise measurements were taken on the Site at locations representative of the nearest existing residential properties in connection with the assessment and control of construction site noise.
- 8.63 The noise survey dates were between 11:00 on Wednesday 29 January and 11:00 on Thursday 30 January 2025. All noise measurements were carried out in suitable weather conditions. On-site calibration checks of the measurement equipment were carried out before and after the noise surveys with no significant variance in levels observed. Noise levels were measured at a height of 1.4 metres above the ground in free-field conditions. Full details of the noise survey period, instrumentation, weather conditions and results are set out in Appendix H1.
- 8.64 Impact of noise on existing dwellings adjoining existing roads in the area, from traffic generated by the Proposed Development, is assessed wholly on the basis of comparative noise calculations for the 'without development' and 'with development' scenarios, the 'without development' being the baseline position.
- 8.65 The results of the daytime baseline noise monitoring survey at locations selected in connection with construction site noise are summarised in Table 8.2.

Table 8.2 Baseline Noise Levels

Monitoring Location	Measured Noise Levels in Daytime (07:00:19:00) dB $L_{Aeq}(2mins)$
Rear of dwellings to West and East	62-68

- 8.66 The results in Table 8.2 indicate that existing dwellings adjacent to, or near, the Site are exposed to daytime ambient noise levels in the range of 62-68 dB L_{Aeq} . These values represent a moderately elevated noise environment influenced primarily by local road traffic from the M62.

- 8.67 According to BS5228, the appropriate daytime threshold value for assessing construction noise impacts using the ABC method depends on the prevailing ambient noise level.
- 8.68 The measured noise levels straddle the boundary between Category A (≤ 65 dB) and Category B (65-70 dB) environments. In such cases, BS5228 advises that professional judgement should be applied, taking account of local sensitivity and the need for a precautionary approach.
- 8.69 To ensure that potential impacts are not underestimated, this assessment has adopted the Category A threshold value of 65 dB L_{Aeq} for daytime construction activities.
- 8.70 This represents a conservative approach, recognising that while parts of the site experience ambient levels approaching Category B, nearby residential receptors may experience lower background conditions at certain times of day. The use of the Category A threshold therefore provides a robust basis for evaluating construction noise significance in accordance with EIA best practice.

Future Baseline

- 8.71 In the absence of the Proposed Development, baseline conditions at the Site are expected to remain broadly similar. A modest increase in local traffic flows of approximately 3% has been assumed, consistent with TEMPro-derived growth factors for the opening year. No other material changes to surrounding land uses or the existing noise environment are anticipated.
- 8.72 Traffic flow data used in this assessment has been provided by Curtins and is based on outputs from the TEMPro growth model. The TEMPro dataset applies area-specific growth factors that reflect projected traffic increases associated with the adopted Local Plan, incorporating an allowance for committed development within the wider Knowsley area.
- 8.73 Accordingly, the 'do-nothing' or future baseline scenario represents conditions with general traffic growth only, while the 'with-development' scenario includes the contribution from the Proposed Development alongside background growth captured within TEMPro.
- 8.74 This approach is considered suitable and robust for assessing cumulative traffic-related noise effects in the absence of site-specific committed development data.

Assessment of Environmental Impacts

- 8.75 The potential noise impacts resulting from the construction phase and after the completion of the Proposed Development (prior to the implementation of any necessary mitigation measures) are described in this section.

Embedded Mitigation

- 8.76 Embedded mitigation for the construction phase is assumed through the implementation of a Construction Environmental Management Plan (CEMP), which will apply industry best practice measures in accordance with BS 5228 to control noise at source.
- 8.77 These measures are inherent to the scheme design and have therefore been taken into account within the assessment. The embedded measures are expected to include, but not be limited to, the following:
- Restricting construction activities to daytime hours only (07:00–19:00 Monday to Friday and 08:00–13:00 Saturday), with no working on Sundays or Bank Holidays.
 - Use of well-maintained plant fitted with silencers, engine covers and noise enclosures, with engines turned off when not in use.
 - Designing vehicle routes and site logistics to minimise reversing manoeuvres and associated warning alarms.
 - Adoption of appropriate speed limits on-site and provision of directional signage.
 - No percussive piling unless agreed in advance with the Local Planning Authority.
 - Locating any fixed plant, compounds and haul routes away from noise-sensitive receptors where practicable.
 - Provision of site inductions and toolbox talks to ensure all personnel are aware of noise control requirements.
- 8.78 These measures represent embedded mitigation and are assumed as part of the baseline for the purpose of determining construction noise effects.
- 8.79 The layout incorporates embedded design measures to reduce noise impacts during operation. In particular, the majority of new dwellings are set back from existing residential properties, and a significant landscaped green buffer between the motorway and first row of dwellings is included as part of the inherent site design.

Major Hazards and Accidents

- 8.80 No such risks have been identified that would be relevant to the assessment of noise and vibration effects. This topic is therefore not considered further.

Phasing

- 8.81 Construction activities will be phased progressively across the Site. The phasing strategy will influence the proximity of construction works to sensitive receptors at

any given time, resulting in variations in noise levels throughout the construction period.

- 8.82 Although detailed phasing plans are not yet available, the assessment has considered a conservative scenario where construction occurs at the closest reasonable point to receptors during each phase. Phasing controls and sequencing will be confirmed within the CEMP to minimise noise impacts through appropriate scheduling, plant management and communication with residents.

During Construction

- 8.83 The Site currently comprises stables and paddocks associated with equestrian use. Limited demolition works will be required to remove existing stable structures and associated hardstanding prior to the commencement of construction. Demolition activities are expected to be of short duration and undertaken using standard mechanical equipment (e.g. excavators, breakers and loading plant).
- 8.84 Given the small scale of the structures and the temporary nature of the works, demolition noise is expected to give rise to at most Minor to Moderate Adverse short-term impacts at the nearest dwellings. With the adoption of good practice measures in accordance with BS 5228 such as maintaining plant in good condition and avoiding simultaneous operation of the noisiest equipment impacts are predicted to be no more than Minor Adverse and therefore not significant in EIA terms.
- 8.85 There will be some earthworks and road works associated with construction of the improved access onto the Site. Nevertheless, the majority of the construction programme will be taken up by construction of the new houses and associated on-site roadways, services, etc, on the main development site itself. Construction works will incorporate embedded best practice noise controls as part of the CEMP, including the selection of quieter plant, maintenance regimes, and the use of temporary acoustic barriers where necessary.
- 8.86 However, there will be periods during the phased construction programme when building activities occur closer to the site boundaries, and some temporary noise may be experienced by nearby existing residents during these phases.
- 8.87 Construction of houses does not usually generate significant levels of noise. The 'worst case' period is usually the initial ground preparation/foundation works because this is when heavy plant and machinery is required (e.g. tracked excavator, backhoe, truck, dumpers, etc.) with less machinery deployed, and thus lower noise levels generated, thereafter. We understand that foundations at this site are likely to be constructed by traditional strip footings, with trench fill, and therefore no piled foundations are envisaged as being necessary at this stage. Thus, none of the likely construction activities will involve unduly noisy construction methods.

- 8.88 Also, no requirement for out of hours working (e.g. at night or on Sundays) is anticipated. Construction activities are temporary, and the level of noise generated at any one location will vary considerably throughout the duration of the works. Depending on the proximity of construction works to noise sensitive residential properties, construction noise has the potential to give rise to short-term noise impacts, unless appropriate, best practice, noise mitigation measures are implemented.
- 8.89 The results of the baseline noise survey have identified that, in accordance with the ABC threshold approach of BS 5228-1, the lowest threshold value of 65 dB L_{Aeq} for daytime construction works applies. In the absence of mitigation, it is anticipated that construction activities occurring at the closest points to existing receptors may give rise to short-term noise impacts of up to Moderate Adverse significance. In accordance with established EIA methodology, a Moderate Adverse effect is considered to be significant.
- 8.90 These short-term significant effects would be limited to periods when the noisiest construction activities are undertaken in proximity to existing noise-sensitive receptors. These comprise two dwellings to the west of the Site and the two dwellings to the eastern boundary of the site. This assessment also applies to any future dwellings that become occupied within the development during the construction period.
- 8.91 However, with the implementation of embedded and best practice noise mitigation measures secured through the Construction Environmental Management Plan (CEMP), construction noise levels are anticipated to be reduced such that the residual effects would not exceed Minor Adverse significance. As Minor Adverse effects are not considered significant in EIA terms, the overall residual impact of construction noise is assessed as not significant and temporary in nature
- 8.92 Construction noise will be controlled through the implementation of embedded best practice measures secured by the Construction Environmental Management Plan (CEMP).
- 8.93 The CEMP will be required by planning condition prior to commencement of development and will set out measures compliant with BS 5228-1 for the control of environmental noise from construction activities. These measures will include the selection of quieter plant, maintenance regimes, use of temporary acoustic barriers where appropriate, and adherence to agreed working hours. As such, these controls are considered embedded mitigation for the purposes of this assessment. Adoption of Best Practicable Means (BPM), as defined under the Control of Pollution Act 1974, will further ensure that construction noise at receptors is minimised as far as reasonably practicable. In addition, Section 61 of the Act enables developers to agree construction protocols with a local authority prior to

works commencing. These powers present the best method for minimising any noise effects that may arise during the construction phase of the development.

- 8.94 There will also be some 'off site' noise during the construction phase due to associated traffic movements on existing roads (i.e., deliveries of materials, employee vehicles, etc). The volume of daily construction traffic will be less than that likely to be generated by the completed development. Given that this is the case, and that the significance of the noise impact of traffic generated by the completed development is Negligible, it can also be concluded that the traffic noise impact during the construction phase will be Negligible and for a temporary period only. The construction noise impacts are summarised in Table 8.3 below.

Table 8.3 Residual Noise Impact – During Construction

Construction Activity	Receptors	Noise Impact prior to Noise Mitigation
On site works	Existing bordering the site	Up to Moderate Adverse impact (Temporary)
On site works	Any new houses that are in situ on the application site itself	Up to Moderate Adverse impact (Temporary)
Off-site Construction Traffic	Existing dwellings on roads used by construction vehicles	Neutral/ Negligible

During Operation

- 8.95 Traffic flow data has been provided by Curtins in terms of 18-hour Average Annual Weekly Traffic ('AAWT') two-way flow rates.
- 8.96 The Traffic flow data used in this assessment has been provided by Curtins and is based on a development of 90 dwellings. The data incorporates forecast growth derived from the TEMPro model, which applies area-specific factors that account for projected traffic increases associated with the adopted Local Plan. The TEMPro dataset provides a reasonable representation of cumulative traffic conditions across the local network. This approach is therefore considered suitably robust for the purposes of environmental noise assessment.
- 8.97 The calculated noise level changes in dB $L_{A10(18\text{hour})}$ for noise-sensitive locations on a representative selection of local roads, based on the supplied traffic flow data, are presented in Table 8.4.

Table 8.4 Noise Impact of Traffic Generated by the Proposed Development

Location	Baseline Traffic Flow	Baseline Traffic + Development Traffic	Calculated Increase in Traffic Noise in dB(A)	Significance of Noise Impact
Cumber Lane	5881	6129	0.2	Negligible
Fox Bank Lane - North	3390	3597	0.3	Negligible
Fox Bank Lane - South	3390	3806	0.5	Negligible
Cronton Road - East	10617	10999	0.2	Negligible
Cronton Road - West	111334	11863	0.2	Negligible

- 8.98 With the fully completed development in place, the range of increases in road traffic noise would be 0.2 – 0.5 dB $L_{A10(18\text{hour})}$. This would equate to a Negligible noise impact (and not significant).

Mitigation Measures

- 8.99 This section describes the measures which are recommended to mitigate any Significant environmental impacts.

During Construction

- 8.100 No further specific mitigation measures are required during the construction phase, as all noise control measures are embedded within the CEMP
- 8.101 No mitigation measures are necessary in respect of “off-site” noise from construction traffic during the construction phase because the magnitude of such an impact is Negligible in any event.

During Operation

- 8.102 In determining appropriate mitigation in respect of the impact of existing noise on the proposed dwellings, the guidance in BS8233 has been used. BS8233 recommends appropriate acoustic design criteria for different types of buildings including residential buildings and includes useful guidance on the sound insulation of buildings against external sources.
- 8.103 The guidance provided in BS8233 includes appropriate internal and external noise level criteria which are applicable to dwellings for steady external noise sources. It

is stated that it is desirable that the internal ambient noise level does not exceed the following criteria set out in Table 8.5.

Table 8.5 BS 8233 Internal Noise Criteria

Activity	Location	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Resting	Living room	35 dB $L_{Aeq(16hour)}$	-
Dining	Dining room/area	40 dB $L_{Aeq(16hour)}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq(16hour)}$	30 $L_{Aeq(8hour)}$

- 8.104 Whilst BS8233 provides guidance in terms of ‘peak’ noise in terms of L_{AFmax} for the assessment of regular individual noise events that can cause sleep disturbance during the night-time, a specific criterion is not stipulated. ProPG does however recommend that peaks of noise inside bedrooms at night do not exceed a limit of 45 dB L_{AFmax} more than 10 times per night.
- 8.105 With respect to external amenity spaces such as gardens and patios, it is desirable that noise levels do not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ considered acceptable in noisier environments. Given the Site’s proximity to the strategic road network, the application of the upper guideline value of 55 dB $L_{Aeq,T}$ is considered appropriate in this instance.
- 8.106 As set out in Appendix H1, the above noise criteria can be achieved for all proposed dwellings at the Site, subject to the implementation of a suitable scheme of noise mitigation.
- 8.107 These measures include acoustically rated double glazing and ventilation systems for dwellings closest to the M62. In addition, acoustic fencing is proposed in locations where the earth bunding and landscaping do not extend along the northern site boundary with the M62, together with localised acoustic fencing to private rear gardens facing towards, or with a view of, the M62.
- 8.108 Full details of these measures, including specification and performance requirements, are provided within the accompanying Noise Impact Assessment (Appendix H1).

Residual Effects

- 8.109 This Section comments on the residual noise impact taking into account the implementation of the noise mitigation measures described above.

During Construction

- 8.110 Taking into account the embedded construction noise mitigation measures included as part of the Proposed Development, residual construction noise levels are predicted to be reduced to a level that would not be significant in EIA terms.
- 8.111 Temporary Minor Adverse effects may occur during peak construction activities when works are closest to receptors; however, these effects will be short-term and managed through the CEMP. This is summarised in Table 8.6.

Table 8.6 Residual Noise Impact – During Construction

Construction Activity	Receptors	Noise Impact prior to Noise Mitigation	Residual Noise Impact with Noise Mitigation
On site works	Existing dwellings close to site	Moderate Adverse impact (Significant)	Minor Adverse impact (Not Significant)
On site works	Any new houses that are in situ on the application site itself	Moderate Adverse impact (Significant)	Minor Adverse impact (Not Significant)
Off site Construction Traffic	Existing dwellings on roads used by construction vehicles	Negligible (Not Significant)	Negligible

During Operation

- 8.112 The negligible noise impact of traffic generated by the development means that no further mitigation measures are necessary.
- 8.113 With the noise mitigation measures that have been recommended, traffic noise impact from the M62 motorway on the nearest of the proposed new dwellings would be Negligible. The residual noise impacts following the completion of the development with mitigation measures are summarised in Table 8.7

Table 8.7 Residual Noise Impact - After Completion

Noise Source	Receptors	Noise Impact prior to Noise Mitigation	Residual Noise Impact
Additional traffic on existing roads in the area generated by the development	Dwellings alongside existing roads in the area	Negligible (Not Significant)	Negligible (Not Significant)

Noise Source	Receptors	Noise Impact prior to Noise Mitigation	Residual Noise Impact
Traffic noise from M62	Proposed new dwellings on northern part of development	Negligible (Not Significant)	Negligible (Not Significant)

Cumulative Effects

- 8.114 The cumulative assessment considers whether noise effects associated with the proposed development, when combined with other committed developments in the surrounding area, would give rise to significant cumulative effects.
- 8.115 For the purposes of this assessment, it is assumed that the traffic flow data provided by Curtins for the With Development scenario incorporates all committed development within the wider area that is reasonably expected to come forward. As such, the operational noise assessment presented in Chapter 8 (Noise) already represents a cumulative assessment scenario.

Cumulative Effects During Construction

- 8.116 Construction noise from the Proposed Development will be temporary and phased. Construction activities associated with other schemes within the area, if occurring at the same time, would also be subject to standard construction noise controls secured through planning conditions and Construction Environmental Management Plans (CEMPs).
- 8.117 Accordingly, cumulative construction noise effects are considered as Minor Adverse and not significant.

Cumulative Effects During Operation

- 8.118 Under the cumulative traffic scenario (as modelled by Curtins), predicted increases in road traffic noise on the local highway network range from less than 0.2 dB to 0.5 dB $L_{A10(18\text{hour})}$. These changes represent low-level increases which fall within the “negligible” impact range, and are not significant in environmental impact assessment terms.
- 8.119 With suitable mitigation measures incorporated into the Proposed Development (limited to dwellings closest to the M62 motorway), acceptable internal and external noise levels will be achieved in accordance with BS8233. Therefore, no significant cumulative effects are expected for future residents.

Summary

- 8.120 This chapter has assessed the noise impact of the proposed development on existing (and proposed) noise-sensitive receptors (dwellings) in the area.
- 8.121 The assessment has included the potential impact (and mitigation) of construction site noise and the impact of any additional traffic noise generated on the local highway network as a result of the completed development. The noise impact of traffic on the Proposed Development itself has also been assessed.
- 8.122 A detailed technical report prepared by Hepworth Acoustics Ltd (including the baseline noise survey data) accompanies this Chapter at Appendix H1.
- 8.123 The approach to the noise assessment has been agreed with the relevant Environmental Health Officers at SHBC. Reference has been made to relevant national planning guidelines, British Standards and local planning policies. A baseline noise monitoring survey has been undertaken to establish the prevailing noise climate of the area at relevant locations.
- 8.124 It has been concluded that, with the implementation of appropriate mitigation measures that have been described, the noise impact at any one location during the construction phase will be no more than Minor Adverse (not Significant) and for a temporary period only.
- 8.125 For the fully completed development, calculated increases in traffic noise for a sample of roads in the area, resulting from traffic generated by the development, range from less than 0.1 to 0.5 dB(A). These are very low levels of increase which amount to a Negligible noise impact without the need for further mitigation.
- 8.126 It is also concluded that, with implementation of appropriate noise mitigation measures, traffic noise impact from the new spine road on the proposed dwellings nearest to the road will be Negligible (not Significant).
- 8.127 For the proposed new houses that will be nearest to Gorsey Lane, some noise mitigation measures have been recommended to ensure that acceptable noise levels will be achieved as defined in BS 8233. Thus, noise impact on the new residents with mitigation will be Negligible (not Significant).

9.0 Transport and Access

Introduction

- 9.1 This report has been prepared by Curtins. The report author is Danny Jones MPlan MCIHT MRTPI, who is a Transport Planning Associate at Curtins with over 12 years' experience in development planning. He leads the Liverpool transport planning team, managing projects at all stages of the planning process from initial development feasibility to detailed planning submission and the discharge of planning conditions. He prepares Transport Assessments, Travel Plans and transport chapters of Environmental Statements as part of the Environmental Impact Assessment (EIA) process.
- 9.2 The chapter should be read alongside an accompanying documentation:
- Transport Assessment, found in Appendix I1.
 - Interim Travel Plan, found in Appendix I2.

Legislation, Policy and Guidance

National Planning Policy

- 9.3 This Transport EIA Chapter is produced in consideration of relevant local and national planning policy. Within this context, Section 9 of the NPPF is entitled Promoting Sustainable Transport and outlines the important role that transport policies have to play in facilitating sustainable development. Paragraph 110 states that:
- “The planning system should actively manage patterns of growth ...Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.”*
- 9.4 Paragraph 116 of the NPPF states 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.”*
- 9.5 The Development accords with the principles of the NPPF. This position is discussed further throughout the accompanying Transport Assessment, found in Appendix I1.

Local Planning Policy

Knowsley Local Plan Core Strategy 2016

- 9.6 The Knowsley core plan sets out the strategic framework of development for Knowsley up to 2028 and beyond. The document provides guidance for development and regeneration for the Borough. The Local Plan outlines 9 strategic objectives as part of its vision: The 3 Transport Accessibility and Connectivity policies are outlined below:

"Sustainable Transport- To ensure new development in Knowsley encourages a reduction in the overall need to travel, and prioritises sustainable transport such as walking, cycling and public transport. This will help to ensure accessibility and linkage between housing areas and employment locations, shopping, leisure, culture, health care, education, community and sporting facilities, green spaces and other services.

Manage Environmental Resources- To manage environmental resources in Knowsley prudently by focusing on sustainable development, recycling and renewable technologies, minimising pollution, reducing carbon emissions and responding to the impacts of climate change.

Green Infrastructure in Rural Areas- To support and strengthen the role of Knowsley's Green Infrastructure (in rural and urban areas), promote biodiversity, and maintain the character of rural settlements including Cronton, Tarbock and Knowsley Village."

Merseyside Local Transport Plan

- 9.7 The Local Transport Plan sets out implementation plans for the medium and long term and aims to improve transport within the Merseyside region. The Third Local Transport Plan envisions the following;

"A city region committed to a low carbon future, which has a transport network and mobility culture that positively contributes to a thriving economy and the health and wellbeing of its citizens and where sustainable travel is the option of choice".

- 9.8 The Local Transport Plan has six goals;

"Help create the right conditions for sustainable economic growth by supporting the priorities of the Liverpool City Region, the Local Enterprise Partnership and the Local Strategic Partnerships.

Provide and promote a clean, low emission transport system which is resilient to changes to climate and oil availability.

Ensure the transport system promotes and enables improved health and wellbeing and road safety.

Ensure equality of travel opportunity for all, through a transport system that allows people to connect easily with employment, education, healthcare, other essential services and leisure and recreational opportunities.

Ensure the transport network supports the economic success of the city region by the efficient movement of people and goods.

Maintain our assets to a high standard.”

9.9 The Proposed Development is in line with the LTP goals.

Assessment Methodology

Scope of Assessment

9.10 Curtins attended a pre-application meeting (via Microsoft Teams) with Highways Officers from Knowsley Council on 30th July 2025 to discuss the latest development proposals and scope of planning documentation. The bullets below provide a summary of discussions:

- Access: It was agreed a priority T-junction would be a suitable arrangement to accommodate the development. Notwithstanding, Knowsley Highways indicated a preference for futureproofing by providing dedicated right-turn provision.
- Car Parking: Highways officers explained that they have accepted a lower car parking provision in the past for affordable housing sites and was therefore agreed that the same principle would apply for our site. It was also noted that there is a preference for good quality cycle storage facilities for those choosing to cycle.
- Pedestrian Connectivity (north): As the site forms part of the wider Halsnead Masterplan, the site will provide connections north into the consented Fox Wood Garden Village site. It was agreed the Fox Wood Garden Village site is expected to deliver onwards connections throughout the wider masterplan area, and that this will be reviewed by the Knowsley S38/S278 team. It was also agreed that other Masterplan users would benefit from this connection through the proposed development site.

- Pedestrian Connectivity (south): There will be pedestrian links to the south via the Tritax Symmetry site. This will facilitate a pedestrian route from the Proposed Development site into Symmetry Park (an industrial unit being brought forwards by Tritax Symmetry). From here, the footpaths will continue south into County Park and the A5080 Cronton Road. Again, it was agreed the Tritax Symmetry site is expected to deliver onwards connections, and that this will be reviewed by the Knowsley S38/S278 team. It was also again agreed that other Masterplan users would benefit from this connection through the proposed development site.

9.11 A key agreed item was in relation to accessibility. It was agreed during Curtins' discussions with Knowsley Council that the site is accessible in principle, providing it delivers its 'share' of the pedestrian connections. The Fox Wood Garden Village and Tritax Symmetry sites are required to deliver connections onwards through the Masterplan.

9.12 As part of the Transport Assessment scoping, it was agreed capacity analysis was only necessary at the site access. Working with Air Quality consultants Redmore however, Curtins has been asked to consider a wider scope of assessment that considers links associated with the following junctions:

- Site access/Fox's Bank Lane
- Lickers Lane/Cumber Lane
- Fox's Bank Lane/Cronton Road/Prescot Road Mini roundabout
- M57
- M62

9.13 In order to provide a thorough assessment, the above scope has been applied to this EIA Chapter.

Method of Baseline Data Collection

9.14 Traffic flows have been taken from various sources, including a combination of an ATC commissioned by Curtins and flows commissioned by other planning applications in the surrounding area. The table below summarises the data source by link:

Table 9.1 Sources of Traffic Flow Data

Link		Data Source
1	Cumber Lane	Halsnead Garden Village North TA 23/02755/FUL Land to the south of Lickers Lane, Windy Arbour Road, Halsnead Garden Village

Link		Data Source
2	Lickers Lane	Halsnead Garden Village North TA 23/02755/FUL Land to the south of Lickers Lane, Windy Arbour Road, Halsnead Garden Village
3	Fox's Bank Lane	ATC
4	Site Access	n/a
5	Fox's Bank Lane	ATC
6	A5080 (Cronton Road)	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
7	Prescot Road	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
8	A5080 (Cronton Road)	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
9	M57 south	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
10	M62 West	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
11	Cronton Road	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR
12	M57 North	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR

Link		Data Source
13	M62 East	Symmetry Park TA 20/00494/HYB Former Site of Cronton Colliery Cronton Road Halsnead Garden Village Knowsley L35 1QR

Limitations and Assumptions

- 9.15 Traffic flows have been taken from various sources, including a combination of an ATC commissioned by Curtins and flows commissioned by other planning applications in the surrounding area. Curtins assumes the accuracy of these vehicle flows.
- 9.16 Curtins has derived future year baseline flows using TEMPro factors. Curtins has derived the development flows following a TRICS assessment and using Census Journey to Work statistics for traffic distribution. These are all forecasted flows and therefore are subject to limitations. The full details of these calculations are provided within the accompanying Transport Assessment, found in Appendix I1.
- 9.17 Capacity assessments have been undertaken using the industry-standard junction modelling software packages LinSig and Junctions 9 programs, more details of which are provided within the accompanying Transport Assessment, found in Appendix I1. These programs are an accurate reflection of junction capacities when used appropriately, but there are various assumptions included within each model.
- 9.18 Annual Average Daily Traffic (AADT) flows have been derived from a combination of obtained 24-hour Automatic Traffic Counts (ATCs) and calculated from peak hour flows from surrounding approved planning applications. These calculations are therefore forecasts, and there are both limitations and assumptions associated with factoring traffic counts from peak hours to 24-hour AADT flows.

Baseline Conditions

Surrounding Highway Network

Fox's Bank Lane

- 9.19 Fox's Bank Lane is a two-directional single lane road, with a typical carriageway width of c.6m and c.2m footways on the eastern side of the carriageway, supported by streetlighting.
- 9.20 There is a 60mph to 30mph speed limit change, approximately 60m south of the M62 as it bridges over Fox's Bank Lane

Cronton Road (A5080)

- 9.21 Cronton Road is located to the south of the development site and forms the western and eastern roundabout arms with Fox Bank Lane. Cronton Road is a two-directional single lane road with a typical carriageway width of c.7m and operates at a 40mph speed limit. Footways are present along both sides of Cronton Road, supported by street lighting.
- 9.22 There is pedestrian infrastructure in the form of tactile paving at the roundabout junction, as well as footway provision, although this does not extend for the entirety of Cronton Road

Baseline Traffic Data Calculations

- 9.23 The following Table provides baseline (2024) 2-way AADT flows for the assessment scope:

Table 9.2 Baseline (2024) two-way AADT flows

Link		2024 Base	
		AADT	HDV%
1	Cumber Lane	5118	1%
2	Lickers Lane	4179	1%
3	Fox's Bank Lane	2950	0%
4	Site Access	n/a	n/a
5	Fox's Bank Lane	2950	0%
6	A5080 (Cronton Road)	9239	1%
7	Prescot Road	5745	2%
8	A5080 (Cronton Road)	9862	1%
9	M57 south	58651	10%
10	M62 West	79077	4%
11	Cronton Road	17705	2%
12	M57 North	76700	15%
13	M62 East	104898	10%

- 9.24 The following table provides opening year flows (2028). Upon reviewing the cumulative sites, it was noted that some sites had negligible traffic generation and/or did not share the same scope of assessment.
- 9.25 In order to recognise an overall increase in traffic as a result of developments in the region, and any others that may come forward as part of future development in Knowsley, a blanket TEMPro traffic growth factor has therefore been applied across

all links to 2028 (i.e. the year of opening). TEMPro is the industry-standard program used to generate area-specific traffic growth factors. They account for a level of growth that references the most recent Local Plan status for given local geographies. TEMPro growth factors by their nature accommodate a level of committed development/Local Plan traffic and are, in the absence of tangible flow data, an appropriate tool to calculate committed development traffic in the context of EIA.

Table 9.3 Development Opening Year Traffic Flows

Link		2028 Opening Year No Dev		Development Traffic		2028 Opening Year With Dev	
		AADT	HDV%	AADT	HDV%	AADT	HDV%
1	Cumber Lane	5260	1%	74	1%	5333	1%
2	Lickers Lane	4295	1%	25	1%	4320	1%
3	Fox's Bank Lane (n)	3032	0%	98	0%	3130	0%
4	Site Access	0	n/a	379	0%	379	0%
5	Fox's Bank Lane (s)	3032	0%	280	0%	3312	0%
6	A5080 (Cronton Road)	9429	1%	76	1%	9571	1%
7	Prescot Road	5904	2%	17	2%	5921	2%
8	A5080 (Cronton Road)	10135	1%	187	1%	10323	1%
9	M57 south	60275	10%	32	10%	60307	10%
10	M62 West	81267	4%	97	4%	81364	4%
11	Cronton Road	18196	2%	18	2%	18214	2%
12	M57 North	78824	15%	40	15%	78864	15%
13	M62 East	107803	10%	0	10%	107803	10%

Baseline Highway Safety Calculations

- 9.26 Personal Injury Accident (PIA) data for the highway network adjacent to the site has been obtained from CrashMap for the most recent five years.
- 9.27 The records show that there have been 2 recorded accidents in the study area over a five-year assessment period. A total of 1 accident resulted in slight severity injuries, with the remaining accident resulting in a serious injury. No fatal accidents were recorded. This number of accidents over a 5-year period is not considered to be of high value for the study area considered in this review. Additionally, there have been no recorded accidents within the vicinity of the site access point within the accident data study period.

- 9.28 Following a review of the records, it is not considered that there is an existing safety issue that is likely to be exacerbated by the proposed development. This position is discussed further throughout the accompanying Transport Assessment, found in Appendix I1.

Assessment of Environmental Impacts

Construction Phase

- 9.29 The construction of the Development will result in a temporary increase of HGVs and LGVs transporting materials and construction workers to/from the Site. This has potential impacts in relation to noise, air, dust, and dirt which are considered elsewhere within the wider ES.
- 9.30 With relation to transport impacts, the volume of construction traffic has not been determined in detail at this stage as the CEMP (including anticipated construction vehicle volumes and prescribed construction vehicle routings) has not yet been developed. However, it would be reasonable to assume vehicles would route to/from the Strategic Road Network (SRN) efficiently and using appropriate roads that can safely accommodate HGVs.
- 9.31 Based on previous experience, the increase in traffic attributable to construction operations is highly unlikely to breach the 10% increase in traffic set out in the ISEP guidance. Vehicles would route to/from the SRN via roads that already accommodate AADT flows that are in the thousands.
- 9.32 As the impact is considered to be less than 10%, no further assessment is necessary. The impact of the Development at the construction phase is considered to be Negligible (Temporary).

Operational Phase

- 9.33 In order to recognise an overall increase in traffic as a result of developments in the region and any others that may come forward as part of future development in Knowsley a blanket TEMPro traffic growth factor across all links to 2028 (i.e. the year of opening) has been applied.
- 9.34 On that basis, the following Table provides a percentage impact assessment of all links. The assessment compares the 2028 Opening year with and without development scenarios.

Table 9.4 Percentage Impact Assessment of All Links

Link		Opening Year No Development	Opening Year with Dev	% Impacts
		AADT	AADT	AADT
1	Cumber Lane	5260	5333	1.4%
2	Lickers Lane	4295	4320	0.6%
3	Fox's Bank Lane (North)	3032	3130	3.2%
4	Site Access	0	379	n/a
5	Fox's Bank Lane (South)	3032	3312	9.2%
6	A5080 (Cronton Road) East	9429	9571	0.8%
7	Prescot Road	5904	5921	0.3%
8	A5080 (Cronton Road) West	10135	10323	1.8%
9	M57 south	60275	60307	0.1%
10	M62 West	81267	81364	0.1%
11	Cronton Road	18196	18214	0.1%
12	M57 North	78824	78864	0.1%
13	M62 East	107803	107803	0.0%

- 9.35 The table above demonstrates that all links are within the 10% and 30% assessment threshold, and there are no links that breach these figures.
- 9.36 Following a thorough review of the above links, and based on professional judgment, there is nothing to suggest any specific link should be assessed further in the context of the EIA guidance. The impact of the Proposed Development on surrounding receptors is therefore Negligible (Permanent).

Mitigation Measures

Construction Phase

- 9.37 The impacts of the construction vehicles upon the traffic and transport-related environmental factors are anticipated to be Negligible (Temporary). No specific mitigation measures are therefore proposed with the exception of a CEMP.
- 9.38 A CEMP will ensure that any disruption caused during the construction phase of the Development will be minimised.
- 9.39 Precise details of the plan will be secured via planning condition and will be agreed with KCC, but it is envisaged that the plan will include:
- Agreed traffic management measures to restrict construction vehicles in certain locations and routes at certain times of the day;

- Travel Plan initiatives to encourage workers to travel to the Site in a sustainable manner. The travel plan would regulate construction employee traffic, this is separate to the operational travel plan; and
- Considerate construction practices (such as wheel washing) to mitigate impacts which are considered elsewhere in the noise, air and dust and dirt section of this ES (Chapter 6 (Air Quality) and Chapter 7 (Noise and Vibration)).

Operational Phase

- 9.40 The precise details of mitigation measures required during the operational phase will be secured via planning conditions and will be agreed with KCC. As no significant adverse effects have been identified, it is considered that operational phase mitigation measures will promote active travel at the Site to ensure that single occupancy car use is minimised.
- 9.41 At this stage it is envisaged that this will comprise a full Travel Plan document, which will include the distribution of travel surveys to be completed by prospective residents.

Residual Effects

Construction Phase

- 9.42 The residual effects of construction vehicles upon the traffic and transport-related environmental factors are anticipated to be Negligible (Temporary). As discussed, the Construction Phase will be supported by a CEMP to ensure that any disruption caused during the construction phase of the Development will be minimised.

Operational Phase

- 9.43 The highway impacts of the traffic predicted to be generated by the Development have been properly assessed at key junctions on the road network within the Transport Assessments. For all of the junctions assessed, the Development would be acceptable from an operational highways' perspective as the Development's residual traffic effects would be Negligible (Permanent).

Cumulative Effects

Construction phase

- 9.44 There may be some cross-over with construction of the committed development sites considered, however, it is considered the net volume of construction vehicles would be minor.

- 9.45 The volume of construction traffic has not been determined in detail at this stage but based on previous experience it is not expected to represent a significant increase in traffic, and additional flows on any one link would be below the 10% increase in traffic set out in the ISEP Guidelines. Further to this there is nothing to suggest the cumulative impact of any adjacent projects would breach the 10% threshold.
- 9.46 As the impact is considered to be less than 10%, no further assessment is necessary. The significance of the effects of the Development at the construction phase on severance, driver delay, pedestrian delay and amenity, fear and intimidation and accidents and safety are considered to be Negligible (temporary).

Operational Phase

- 9.47 In order to capture the cumulative impact of the Committed Development sites and the Proposed Development, the following table compares the 2024 Base flows with the 2028 Opening Year with Development flows (incorporating a blanket TEMPro traffic growth factor across all links to 2028):

Table 9.5 Comparison of 2024 base flows and 2028 opening year with development flows

Link		2024 Base No Development	2028 Opening Year with Dev	% Impacts
		AADT	AADT	AADT
1	Cumber Lane	5118	5333	4.2%
2	Lickers Lane	4179	4320	3.4%
3	Fox's Bank Lane (North)	2950	3130	6.1%
4	Site Access	0	379	n/a
5	Fox's Bank Lane (South)	2950	3312	12.3%
6	A5080 (Cronton Road) East	9239	9571	3.6%
7	Prescot Road	5745	5921	3.1%
8	A5080 (Cronton Road) West	9862	10323	4.7%
9	M57 south	58651	60307	2.8%
10	M62 West	79077	81364	2.9%
11	Cronton Road	17705	18214	2.9%
12	M57 North	76700	78864	2.8%
13	M62 East	104898	107803	2.8%

- 9.48 The table above demonstrates that all links are within the 30% assessment threshold. An impact of c.12% is reported along Fox's Bank Lane (South of the

Access). This link is not considered a particularly sensitive link warranting further consideration.

- 9.49 Following a thorough review of the above links, and based on professional judgment, there is nothing to suggest any specific link should be assessed further in the context of the EIA guidance. The impact of the Proposed Development on surrounding receptors is therefore Negligible (Permanent).

Summary

- 9.50 This chapter of the ES has been prepared by Curtins and assesses the likely significant effects of the Development on the environment in respect of Transport and Access. The chapter should be read alongside accompanying documentation:
- Transport Assessment, found in Appendix I1; and
 - Interim Travel Plan, found in Appendix I2.
- 9.51 With regards to the construction phase of the Development, this will result in a temporary increase in HGVs and cars carrying construction workers and materials on roads surrounding the Site. This has potential impacts in relation to noise, air, dust and dirt which are considered elsewhere within the wider ES. The volume of construction traffic has not been determined in detail at this stage but based on previous experience it is not expected to represent a significant increase in traffic when considering either the Proposed Development in isolation, or cumulatively alongside committed development in the surrounding area. Any impacts will be suitably mitigated Construction Environment Management Plan so that residual effects will be Negligible (Temporary).
- 9.52 With regards to the operational phase of the Development, this will result in a permanent increase in vehicles arriving/departing the site. This increase is not expected to represent a significant one. None of the links considered breached the ISEP thresholds for further assessment in isolation, or cumulatively alongside committed development in the surrounding area. The impact of the Proposed Development on surrounding receptors is therefore Negligible (Permanent).

10.0 Socio-Economics

Introduction

- 10.1 This chapter assesses the socio-economic effects of the Proposed Development. The chapter describes the methods used to assess the likely significant effects, baseline conditions, and the potential direct and indirect effects of the Proposed Development comprising:
- Housing market effects - assessment of the Proposed Development on the operation of the local housing market.
 - Labour market effects - assessment of the population to be accommodated in the Proposed Development and the impact this will have on the operation of the local labour market.
 - Local economic effects – via (i) construction phase expenditure and associated temporary construction employment and (ii) permanent off-site employment effects derived from residents' off-site expenditure.
 - Social infrastructure effects - assessment of the effects the Proposed Development will have on the education and health care system.
 - Fiscal effects - this category comprises an assessment of all additional Council Tax receipts from the Proposed Development.
- 10.2 Any mitigation measures required to prevent, reduce, or offset the identified significant effects and the residual effects are also covered.
- 10.3 This chapter has been written by Darren Wisher of Wisher Consulting. Darren has 30 years-experience of preparing socio-economic impact assessments. His experience covers major infrastructure projects, leisure/cultural and commercial development and residential schemes. He was previously Managing Director of Regeneris Consulting, a specialist socio-economics consultancy, and the UK economics consulting arm of Hatch Ltd with a team of 40 staff.

Legislation, Policy and Guidance

- 10.4 The National Planning Policy Framework has evolved incrementally over the period since 2017, with the current version dated December 2024. The current version makes clear more than ever the Government's objective of significantly boosting the supply of homes:

"...it is important that a sufficient amount and variety of [housing] land can come forward where it is needed, that the needs of groups with specific housing requirements are addressed and that land with permission is developed without unnecessary delay. The overall aim should be to meet an area's identified housing

need, including with an appropriate mix of housing types for the local community". NPPF Para 61.

- 10.5 The latest version of the NPPF contains a new standard method for calculating housing need. The new method is based on a fixed 0.8% increase to the existing housing stock with upward affordability adjustments, instead of an approach based on population and household projections. The new method results in a higher requirement for most local authority areas, and in Knowsley the new standard method requires delivery of 600 new dwellings per annum.
- 10.6 The adopted Knowsley Local Plan Core Strategy is dated 2016 and contains a clear policy imperative on housing delivery:
- "It [the Plan] will deliver a wide range of new high-quality housing, to rebalance the housing market in order to meet the needs and aspirations of both existing and new residents" Local Plan Foreword.*
- Provision will be made for 8,100 new dwellings to be delivered in Knowsley between 2010 and 2028, at an annual average of 450 dwellings per annum. Policy CS3(1)*
- The tenure, type and size of new housing delivered in Knowsley will support the rebalancing of the housing market to better meet housing needs and demands arising in Knowsley. Policy CS3(4)*
- 10.7 Paragraph 5.21 of the adopted Core Strategy explains that rebalancing the housing market in Knowsley is necessary to meet the needs of local people and address projected out migration. Rebalancing will include widening the choice of market sector housing across the borough whilst also helping to meet established needs for affordable housing.
- 10.8 The Core Strategy Vision also prioritises the regeneration of local town centres:
- Kirkby, Prescott and Huyton Town Centres will have defined and enhanced roles, be regenerated, vibrant and welcoming, providing focal points where local residents will choose to shop and access health care, cultural and other key services and facilities. Core Strategy p36*
- 10.9 The Core Strategy makes clear that for this vision to be realised the town centres will require enhanced footfall and enhanced resident expenditure. The town centre renewal agenda is closely linked to the housing renewal agenda.
- 10.10 Given both the age of the adopted Local Plan and the fact and it is no longer aligned with the government's requirements for enhanced housing delivery, a new Local Plan will be initiated later in 2025/early 2026.

- 10.11 In addition to the adopted Core Strategy, three adopted Supplementary Planning Documents (SPDs) are also relevant to this assessment:
- Halsnead Masterplan SPD. The Proposed Development sits within the Halsnead Masterplan area. The SPD Vision states that Halsnead will become an attractive place of choice offering a very high-quality residential environment and strategic employment space in a distinctive setting, with immediate access to a range of established community facilities in both the immediate and wider area.
 - Adding Social Value to Development SPD. This SPD outlines how the Council will secure additional benefits (known as social value) from local housing and other development opportunities. It outlines how major developments - over 30 residential units - will trigger the requirement for a Social Value Strategy for the scheme.
 - Developer Contributions SPD. This SPD outlines how certain types of development will trigger the need for, amongst other things, both education and health infrastructure contributions.

Assessment Methodology

Scope of Assessment

- 10.12 The scope of the socio-economic assessment covers the following receptors:
- Receptor 1 - the local housing market.
 - Receptor 2 - the local labour market/population base.
 - Receptor 3 - the local economy
 - Receptor 4 - social infrastructure, in the form of education and health facilities.
 - Receptor 5 - local government finances.
- 10.13 The sensitivity of each receptor is assessed by reference to the baseline conditions and also by reference to the local and national policy context.
- 10.14 Effects are quantified and then their significance is categorised using the framework shown below in Table 10.1. Both temporary (short term) and permanent (long term) effects are assessed. Temporary effects are those which will materialise over an assumed 2-year construction period. All permanent effects relating to the completed development assume a fully occupied development with all (up to) 95 new residential units occupied
- 10.15 Impacts are primarily measured at the Knowsley local authority level. Substantial effects are considered to be Significant in EIA terms.

Table 10.1 Framework Assessing Significance of Beneficial Effects

Sensitivity of Receptor	Magnitude of Effects			
	High	Medium	Low	Negligible
High	Substantial	Substantial	Moderate	Negligible
Medium	Substantial	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Sensitivity of Receptors

- 10.16 Based on the baseline conditions set out below and also by reference to the local and national policy context, the sensitivity of each receptor has been assessed - as set out in Table 10.2.

Table 10.2 Sensitivity of Receptors

Receptor	Sensitivity	Rationale
Receptor 1 - Local housing market	High	The need for new housing is strong in Knowsley. The proposed new standard method for housing need proposes a need of 600 new dwellings per year. There is a recognised and urgent need for affordable housing.
Receptor 2 - Local population/labour force	Medium	Continued local population growth and diversification is important, to both improve the depth of the local labour market and to underpin town centre renewal.
Receptor 3 - Local economy	High	Town centre vacancy rates remain high. New expenditure and new footfall are required to boost the economy of local centres and is a key policy priority for Knowsley Council.
Receptor 4 - Social infrastructure	Medium	Provision of appropriate education and health infrastructure is essential for expanding communities.
Receptor 5 - Local government finances	High	The Council's budget is under continual pressure. Council Tax receipts constitute approximately 30% of all income and will be a key mechanism for boosting income.

Limitations and Assumptions

- 10.17 There are no limitations to this assessment. All the component parts of a typical socio-economic assessment have been able to be addressed.
- 10.18 All key assumptions are identified the Assessment of Environmental Impacts section set out below.

Baseline Conditions

Households & Population

- 10.19 There are currently some 66,000 households residing in Knowsley. Housing delivery rates in Knowsley have generally been strong over the duration of the current Local Plan period - with net completions above the Local Plan target of 450 per annum but still below the new Standard Method of Need of 600 per annum. Some 28% of all new houses constructed have been affordable units.

Table 10.3 Housing Delivery Over Plan Period (2010-11 to 2023-24)

	Average	Total
Gross - total	650	8,462
Gross - of which affordable	180	2,345
Net of losses	580	7,578

Source: Knowsley Council Planning Policy Team

- 10.20 The total population of Knowsley stands at 155,000 (as at the latest 2021 Census). The borough population grew by 5.9% between the 2011 and 2021 Census, slightly below the growth rate for England as a whole (+6.6%). Continued local population growth and diversification is important for the following reasons:
- To offset the natural ageing of the population and maintain a strong and diverse labour force, across all occupational grades.
 - To provide additional footfall and expenditure to help town centre renewal.
 - To maintain the viability of local services and facilities, including schools, leisure and health facilities.

Economy & Town Centres

- 10.21 According to the Business Register and Employment Survey undertaken by the ONS, there are approximately 68,000 jobs located in Knowsley. In addition to this there are some 10,000 self-employed residents - giving a total employment base of 78,000.

- 10.22 The jobs density - the ratio of total jobs to population aged 16-64 - stands at 0.79. This ratio is slightly below the Great Britain average of 0.86 meaning there is a continued need to grow the local employment base.
- 10.23 Improved town centre vitality is one of the main ways in which Knowsley Council is seeking to grow the employment base of the borough and to improve quality of life for local residents. Despite recent and planned investment the challenge of boosting the town centres is a significant one, and one which will require a considerable increase in footfall and town centre expenditure. Recent town centre vacancy rates are in the range of 12% to 16% (see Table 10.4), higher than the UK average of 11%.

Table 10.4 Town Centre Vacancies (2023/24, Min - Max)

Kirkby	19 - 29
Prescot	18 - 21
Huyton	8 - 13
All town centres	45 - 63
All town centres – % of all units	12% - 16%

Source: Knowsley Council Planning Policy Team.

Social Infrastructure

- 10.24 Table 10.5 lists the three primary schools that are within a circa 1.5 mile walking distance of the Proposed Development. These three are identified in the Halsnead Masterplan SPD are the key 'local' primary facilities. More primary school facilities are found within a circa 2 to 2.5-mile radius.
- 10.25 Current data from the UK government (see Table 10.5) shows capacity of 138 places across the three primary schools. This capacity may well be due to the planned expansion of one of more of the facilities that has been funded through recent developer contributions.

Table 10.5 Primary School Provision within c. 1.5 miles Walking Radius

School and postcode	Walking Distance from Site	Age Range	Gender	Capacity	Pupils on Roll	Surplus Spaces
St Leo's & Southmead Primary. L35 3SR	1.2	3-11	Mixed	261	219	42

School and postcode	Walking Distance from Site	Age Range	Gender	Capacity	Pupils on Roll	Surplus Spaces
Whiston Willis Primary School. L35 2XY	1.5	3-11	Mixed	353	391	(38)
Halsnead Primary School. L35 3TX	1.6	3-11	Mixed	420	286	134
Total				1,034	896	138

Source: Get-Information-Schools-Service, UK government.

- 10.26 Secondary schools have wider catchments than primary schools. There is one secondary school within a 2-mile walking distance of the Proposed Development site, this being Rainhill High School in St Helens district. UK government data shows that this school is currently over-subscribed. There are a number of other secondary school facilities slightly further afield but all within the Knowsley borough.
- 10.27 The Proposed Development may also place demand on healthcare facilities such as GP surgeries. A search of GP surgeries within a 2-mile radius shows that the Whiston Health Centre is the main facility that would serve the Proposed Development. According to data provided by NHS England this facility is currently accepting new patients.

Council Finances

- 10.28 Knowsley Metropolitan Borough Council's Statement of Accounts for 2024/25 showed a net revenue expenditure budget for 2024/25 of some £239 million. Council Tax receipts were a prime income source to support this budget. Council Tax receipts of £71 million were estimated - accounting for 30% of all revenues.
- 10.29 The final 2024/25 Budget Monitoring Report to the Cabinet on 11 June 2025 confirms that a balanced position was achieved at the end of the 2024/25 financial year. This balanced budget should not disguise fact that all Local Authority budgets are under extreme pressure in the current fiscal climate and that a continual expansion of revenue sources is required.

Assessment of Environmental Impacts

Construction Phase Effects

Receptor 3 - Local Economy

- 10.30 The construction of up to 95 dwellings and associated infrastructure will help support construction firms operating in the locality and provide jobs in the construction industry.
- 10.31 The construction process requires a range of occupational levels including unskilled or labouring jobs to more senior positions, as well as a range of professional disciplines – some of whom will be based locally.
- 10.32 The construction industry offers very accessible employment opportunities, with extensive use of apprenticeships and trainees. The construction sector also offers more social mobility than any other sector of the UK economy, with 53% of those in management or professional roles in construction being from families where the main earning parent was from a skilled trade of a lower occupational group²⁵.
- 10.33 The total construction investment is estimated by the scheme applicant at circa £20 million and the construction phase will last approximately two years. The Home Builders Federation (HBF) has created an on-line tool to help measure the employment effects of building new housing²⁶. The tool suggests that the completion of 95 units over a two-year period will support some 150 on and off-site construction jobs. These jobs span the full UK construction supply chain and will be sustained throughout the build programme.
- 10.34 The provision of construction employment is of relevance to the local economy receptor, which itself is judged to have a high sensitivity. Construction effects will be temporary (short term), beneficial and of a low scale given their time-limited duration. Given the sensitivity of the receptor, the significance of the effect will be Moderate Beneficial.

Operational Phase Effects

Receptor 1 - Local Housing Market

- 10.35 The Proposed Development will deliver up to 95 new homes spanning both apartments and houses. The homes will all be affordable units, and split across three tenures - social rent, rent to buy and shared ownership. The homes will be a range of sizes spanning one-bedroom through to four-bedroom.

²⁵ The Real Face of Construction 2020. Chartered Institute of Building.

²⁶ <https://www.hbf.co.uk/research-insight/hbf-housing-calculator/>

- 10.36 On average there have been some 180 affordable homes delivered in Knowsley each year over the past 15 years. There is a recognised need for the continued delivery of affordable housing at this level, and indeed beyond.
- 10.37 The provision of affordable housing is of relevance to the local housing receptor, which itself is judged to have a high sensitivity. The new affordable housing effect will be permanent (long term), beneficial and of a high scale. Given the sensitivity of the receptor, the significance of the effect will be Substantial Beneficial.

Receptor 2 - Labour Market/Population Base

- 10.38 It is estimated that the scheme when fully occupied will house a population of approximately 220 residents.
- 10.39 This estimate is based on the total bed space capacity of each proposed unit and with a 33% reduction applied (on the basis that under typical occupancy patterns there will be a number of households that choose to maintain a spare bedspace or use a spare bedroom for a study etc). This population yield equates to an average household size of 2.3 persons in the scheme, which is comparable to the current UK average household of 2.4 persons per unit across all types of housing.
- 10.40 This population yield will represent a helpful influx of new residents/retention of existing residents in Knowsley - which in turn will be of benefit to local employers and potentially broaden the pool of local entrepreneurs with at least some residents likely to be self-employed/owners of small businesses.
- 10.41 The expansion of the population base is of relevance to the local labour market receptor, which itself is judged to have a medium sensitivity. Local labour market effects will be permanent (long term), beneficial and of a medium scale. Given the sensitivity of the receptor, the significance of the effect will be Moderate Beneficial.

Receptor 3 - Local Economy

- 10.42 The most significant economic effect of the Proposed Development when operational will be the considerable household expenditure effects in the local economy.
- 10.43 It is estimated that the scheme will support £3.5 million of additional household expenditure each year. This is based on:
- The latest reliable data for household spending in the UK which shows expenditure at £592 per week for 2019, inflated to £700 in 2025 prices.
 - Over the course of a year, and across 95 new homes, this sums to annual household expenditure of £3.5 million.
- 10.44 Of the £3.5 million of additional annual household expenditure, it is estimated that at least 40% (circa £1.4 million per annum) will be retained in the borough of

Knowsley. There is no definitive data source on local retail/service sector expenditure retention but a figure of 40% for the whole authority area is considered reasonable in view of both the varied nature of household expenditure and the range of outlets and services based locally.

- 10.45 The provision of local expenditure is of relevance to the local economy receptor, which itself is judged to have a high sensitivity. Local expenditure effects will be permanent (long term), beneficial and of a medium scale. Given the sensitivity of the receptor, the significance of the effect will be Substantial Beneficial.

Receptor 4 - Social Infrastructure

- 10.46 There are no specific formulae contained in the Knowsley Local Plan, or related documents, to quantify the educational or healthcare needs arising from the Proposed Development.
- 10.47 However other approaches are possible to quantify the scale of the effect/need:
- 10.48 On child yield, current Census data can be used to establish the age profile of the estimated 220 residents at the Proposed Development. On this basis, there will be:
- 9 pre-school aged children, aged 2 to 4.
 - 19 primary school children, aged 5 to 11.
 - 13 secondary school children, aged 12 to 16.
- 10.49 On healthcare needs, NHS Digital reports that as of August 2025 there were on average 2,249 registered patients per GP across England. This can be used as a benchmark to estimate the additional GP requirement associated with an extra 220 residents. Using the benchmark, 220 residents would require an additional 0.1 of a GP.
- 10.50 The education and healthcare needs are of relevance to the social infrastructure receptor, which itself is judged to have a medium sensitivity. Social infrastructure effects will be permanent (long term), negative and of a low scale. Given the sensitivity of the receptor, the significance of the effect will be Minor Negative.

Receptor 5 - Local Government Finances

- 10.51 As set out above, the Proposed Development will deliver up to 95 new homes.
- 10.52 For the purposes of this assessment, it is assumed that all of the new homes will be Council Tax Band B properties. Some may be on a higher or lower banding, but this is considered to be a reasonable assumption for the average level.
- 10.53 The current average Knowsley Council Tax charge for Band B properties is £1,875 per annum. For the purposes of this assessment, it is assumed that some of the

properties receive some form of low-income reduction and/or single person discount - the assumption being that 25% of the properties receive a 50% reduction.

- 10.54 The Council Tax yield across 95 new homes would therefore be circa £155,000 ((71 x £1,875) + (24 x £938)). This will flow to Knowsley Borough Council each and every year on a recurring basis.
- 10.55 The provision of Council Tax receipts is of relevance to the local government finances receptor, which itself is judged to have a high sensitivity. Council Tax effects will be permanent (long term), beneficial and of a low scale. Given the sensitivity of the receptor, the significance of the effect will be Moderate Beneficial.

Mitigation Measures

- 10.56 Two mitigation measures are proposed in relation to socio-economic effects.
- 10.57 First, the production of a Social Value Strategy to accompany the application. The Strategy will ensure that the benefits of the construction phase, as set out in the chapter, are localised and that the flow of benefits to Knowsley residents is optimised.
- 10.58 Second, an appropriate s106 financial contribution will be agreed. The s106 will include specified contributions towards (i) primary school places (ii) early year provision and (iii) healthcare provision, alongside contributions on other matters such as outdoor sports/activity contributions.

Residual Effects

- 10.59 The residual effects of the Proposed Development post-mitigation are set out in Table 10.6. Mitigation leads to two considerations in the assessment:
- The preparation of the Social Value Strategy will help localise the construction phase benefits. The assessment of construction phase effects on the local economy however remains unchanged at Moderate Beneficial because of the short-term nature of these effects.
 - The s106 payments for education and health will avoid the Minor Negative effects of the Proposed Development on the social infrastructure receptor. As such, the assessment is changed to Negligible.

Table 10.6 Residual Effects

Receptor	Level of significance, in the absence of mitigation	Mitigation	Residual effect, after mitigation
Construction Phase			

Receptor	Level of significance, in the absence of mitigation	Mitigation	Residual effect, after mitigation
Receptor 3 - Local economy	Moderate Beneficial, in the short term at the district level.	Social Value Strategy	Moderate Beneficial, in the short term at the district level.
Operation Phase			
Receptor 1 - Local housing market	Substantial Beneficial, in the long term at the district level.	None	Substantial Beneficial, in the long term at the district level.
Receptor 2 - Local population/ labour force	Moderate Beneficial, in the long term at the district level.	None	Moderate Beneficial, in the long term at the district level
Receptor 3 - Local economy	Substantial Beneficial, in the long term at the district level.	None	Substantial Beneficial, in the long term at the district level.
Receptor 4 - Social infrastructure	Minor Negative, in the long term at the district level.	Appropriate financial contribution via s106	Negligible, in the long term at the district level.
Receptor 5 - Local government finances	Moderate Beneficial, in the long term at the district level.	None	Moderate Beneficial, in the long term at the district level.

Cumulative Effects

- 10.60 A series of ten cumulative schemes are set out in Chapter 2 of this Environmental Statement. Five of the ten schemes involve residential development and as such will deliver similar effects to those assessed within the scope of this socio-economic chapter. Five of the ten schemes are employment schemes and deliver different effects - as such they are not included in this cumulative assessment.
- 10.61 The five residential schemes in combination will deliver:
- 923 houses, plus a 100-unit apartment scheme for the over-55s - so 1,023 unit in total.
 - Construction jobs of 1,200 sustained over an assumed three-year build programme.

- A population yield of 2,450 using the UK average household size of 2.4 persons per unit across all types of housing.
- Total household expenditure of £37 million per annum, 40% of which (circa £15 million) is expected to be retained in Knowsley.
- Council Tax receipts of £1.65 million per annum.
- Child yield of 410 (aged 2-16).
- Healthcare requirement for 1.1 GPs.

10.62 These effects, which are largely quantified using the same methodologies as for the Proposed Development, are tabulated and assessed in Table 10.7 alongside the effects of the Proposed Development.

Table 10.7 Cumulative Effects

Receptor	Cumulative Schemes, excluding Proposed Development	Cumulative Schemes, including Proposed Development	Level of significance, Cumulative + Proposed Development, in the absence of mitigation
Construction Phase			
Receptor 3 - Local economy	Construction jobs of 1,200	Construction jobs of 1,350	Moderate Beneficial, in the short term at the district level.
Operation Phase			
Receptor 1 - Local housing market	1,023 residential units	1,118 residential units	Substantial Beneficial, in the long term at the district level.
Receptor 2 - Local population/ labour force	Population growth of 2,450	Population growth of 2,670	Substantial Beneficial, in the long term at the district level.
Receptor 3 - Local economy	£15 million of household expenditure in Knowsley	£16.4 million of household expenditure in Knowsley	Substantial Beneficial, in the long term at the district level.

Receptor	Cumulative Schemes, excluding Proposed Development	Cumulative Schemes, including Proposed Development	Level of significance, Cumulative + Proposed Development, in the absence of mitigation
Receptor 4 - Social infrastructure	410 children/school places (aged 2-16) Requirement for 1.1 GPs	451 children/school places (aged 2-16) Requirement for 1.2 GPs	Moderate Negative, in the long term at the district level.
Receptor 5 - Local government finances	Council Tax of £1.65 million per annum	Council Tax of £1.8 million per annum	Substantial Beneficial, in the long term at the district level.

- 10.63 The consequence of adding in the cumulative schemes is to boost further and intensify the scale of the positive socio-economic effects. The impact of an additional 1,118 residential units on the operation of the local housing market and on the local economy is highly significant.
- 10.64 The social infrastructure requirements flowing from an additional 1,118 residential units are assessed as a Moderate Negative. However, it is envisaged that all cumulative schemes will make appropriate s106 payments for education and health (and other relevant policy areas) and that these will avoid the negative effects. Post mitigation, the social infrastructure effects will be Negligible.

Summary

- 10.65 During the circa two-year construction phase, the Proposed Development will support some 150 on and off-site construction jobs, including apprentice and training opportunities.
- 10.66 A Social Value Strategy has been prepared to accompany the application. The Strategy will ensure that the benefits of the construction phase are localised and that the flow of benefits to Knowsley residents is optimised. The construction employment/training effect is short-term and assessed as Moderate Beneficial.
- 10.67 Once operational, the Proposed Development will give rise to a series of positive long-term (permanent) socio-economic effects, as follows:
- The provision of up to 95 affordable housing units is assessed as a Substantial Beneficial effect. This effect is considered significant in EIA terms.

- The generation of £3.5 million of additional annual household expenditure, at least 40% of which (£1.4 million per annum) will be retained in the borough of Knowsley. The provision of additional local expenditure at this level is assessed as a Substantial Beneficial effect. This effect is considered significant in EIA terms.
- The accommodation of approximately 220 residents. This population yield will be of benefit to local employers and potentially broaden the pool of local entrepreneurs. This effect is assessed as Moderate Beneficial.
- Council Tax receipts of circa £155,000 each and every year on a recurring basis. This effect is assessed as Moderate Beneficial.

10.68 The Proposed Development will place additional demands on education and health infrastructure, an effect that is assessed as a Minor Negative. However, s106 payments for education and health are proposed that will avoid these Minor Negative effects. The effect of the Proposed Development on social infrastructure, post mitigation, is therefore Negligible.

11.0 Summary of Impacts and Mitigation

- 11.1 The Environmental Statement has presented the findings of the Environmental Impact Assessment process for the Proposed Development at Halsnead Farm.
- 11.2 Where applicable, each of the technical chapters have presented mitigation measures aimed at avoiding, reducing or compensating for potential significant environmental effects. Mitigation measures have been classified based on their deliverability:
- Inherent mitigation measures - those 'designed in' to the scheme and certain to be delivered, i.e. what is proposed by plans and quantum;
 - Standard mitigation measures - e.g. construction mitigation with a high degree of certainty over delivery i.e. measures to be included in a draft Construction Environmental Management Plan (CEMP); and
 - Actionable mitigation measures - those that require a controlling mechanism or legal undertaking to be implemented, but are under the control of the applicant, Knowsley Council or Statutory Bodies and therefore, have a good certainty over delivery, e.g. planning conditions.
- 11.3 Potential significant impacts as a result of the Proposed Development have been assessed firstly with inherent and standard mitigation measures implemented. The residual impacts have then been assessed with inherent, standard and actionable (under the control of the applicant) mitigation measures implemented.
- 11.4 Table 11.1 presents a summary of the proposed mitigation measures and the residual impacts that are predicted to remain in place once these mitigation measures are in place.

Table 11.1 Summary of effects and mitigation

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Landscape and Visual Impact	A comprehensive landscape strategy will diversify site green infrastructure. Tree planting on the western boundary will strengthen the green interface with Old Halsnead and minimise intervisibility. There will also be tree planting along Fox's Bank Lane. Directional lighting will minimise light spill	Through the approved design and planning conditions to secure specific elements.	Significant effects on landscape receptors are not expected. Development is contained by mature vegetation, which will be strengthened by new planting. There will be a minor significance of effect on the setting of Old Halsnead Significant effects on visual receptors are not expected. Long distance views of the site are not possible. Significance of effect from all viewpoints is minor in the long term. It is however impossible to fully mitigate the loss of agricultural fields, although this is in accordance with the Halsnead Garden Village Masterplan.

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Biodiversity	Bat roosts will be lost due to demolition works, it is proposed that new roosting features would be provided in new structures. Use of a bat sympathetic lighting plan to reduce light spill onto roosting and foraging areas. Construction Environmental Management Plan (CEMP) to include measures to reduce dust impacts on nearby habitat.	Planning conditions to secure replacement bat roosting features, bat sympathetic lighting and CEMP. It will be a condition of development that the scheme obtains a suitable EPS bat mitigation license to allow lawful demolition and re-erection of the bat roost.	Following mitigation, no residual effects are anticipated on designated nature conservation sites or species. Potential long-term positive effects in combination with the Garden Village due to net gain in habitat, improved ecological connectivity and long-term management. Some habitat loss during construction.
Cultural Heritage	Rebuilding and repair of the Halsnead Park Wall would be done sympathetically, primarily using existing materials. The wall would be left in a much better state of repair. Good practice construction guidelines will be adhered to, as set out in the CEMP. Evergreen trees will be planted to reinforce the existing mature deciduous woodland to screen views towards Old Halsnead.	Planning condition to secure sympathetic rebuilding of Halsnead Park Wall. Planning condition to secure CEMP. Evergreen tree planting to be included in the design and will be shown in drawings to be approved.	Negligible adverse effects at the construction phase on Halsnead Park Wall, Halsnead Park and temporary impacts on the setting of Old Halsnead. Negligible adverse effect at operational stage, a permanent indirect impact on the setting of Old Halsnead.

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Air Quality	As a major development, a CEMP will be produced to control air quality effects. Measures to be included in the CEMP are provided in Table 7.27, including site management and monitoring measures and operating requirements for plant and machinery. Additional mitigation measures are not required at the operational stage.	Planning condition to secure CEMP requirement.	Residual effects during construction and operation are predicted to be not significant. During construction, the main effects would be from fugitive dust emissions, no significant impacts are predicted. Potential human health impacts from dust from demolition, earthworks, construction and trackout are predicted to be minor. During operation, air quality effects are likely to result from road traffic exhaust emissions, only negligible and not significant impacts are predicted.

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Noise and Vibration	During construction, noise control measures will be embedded within the CEMP. Measures include restricted construction hours, carefully designed vehicle routes and good maintenance of equipment. During operation, acoustically rated double glazing and ventilation systems will be used on dwellings closest to the M62. Acoustic fencing is proposed in locations where earth bunding does not extend along the northern site boundary with the M62, together with localised acoustic fencing to private rear gardens facing towards the M62.	Planning condition to secure CEMP requirement. Planning condition to secure noise mitigation measures.	Temporary Minor Adverse effects may occur during peak construction activities when works are closest to receptors; however, these effects will be short-term and managed through the CEMP. The negligible noise impact of traffic generated by the development means that no further mitigation measures are necessary. With the noise mitigation measures that have been recommended, traffic noise impact from the M62 motorway on the nearest of the proposed new dwellings would be Negligible.

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Transport and Access	The construction phase will be supported by a CEMP to minimise transport-related disruption. It is envisaged that the CEMP will include traffic management measures, a travel plan to encourage sustainable travel to Site and considerate construction practices. A travel plan will also be implemented during the operational stage, to promote active travel and reduce single occupancy car use.	Planning conditions to secure CEMP and Travel Plan.	The increase in traffic attributable to construction operations (HGVs and cars carrying construction workers and materials) is highly unlikely to breach a 10% increase and is therefore negligible and not significant. At the operational stage, for all the junctions assessed, the Development would be acceptable from an operational highways' perspective as the Development's residual traffic effects would be Negligible (Permanent). There are also no significant cumulative impacts.

Environmental Topic	Mitigation Measures	Means by which mitigation will be delivered	Residual Impacts
Socio-economics	As a major development, a Social Value Strategy is required; this will ensure that construction stage benefits are localised and the flow of benefits to Knowsley residents is optimised. This will improve the local economy An appropriate financial contribution to fund local health and education facilities will be agreed. This will mitigate negative impacts on social infrastructure.	Preparation of a Social Value Strategy at application and payments secured via Section 106 agreement to fund local health and education facilities.	It is anticipated that the Proposed Development would deliver: ■ Moderate beneficial effects for the local economy. ■ Substantial beneficial effects to the local housing market. ■ Moderate beneficial effects to the local population and labour force. ■ Negligible effects on the availability of social infrastructure. ■ Moderate beneficial effect on Local Government finances.



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