

An aerial photograph showing a rural landscape. In the foreground, there is a large, irregularly shaped field with a light-colored, possibly sandy or silty, surface. To the right of this field, there is a dense, dark forest. In the background, a small cluster of buildings, including what appears to be a church with a steeple, is visible. The overall scene is captured in a black and white, halftone-style image.



**LAND EAST OF WESTERGATE,
WESTERGATE**

Environmental Statement
Volume 1 Main Technical Assessments

February 2024

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1. Introduction

- 1.1 Project Background
- 1.2 Purpose of this Environmental Statement
- 1.3 Project Team
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1 Introduction

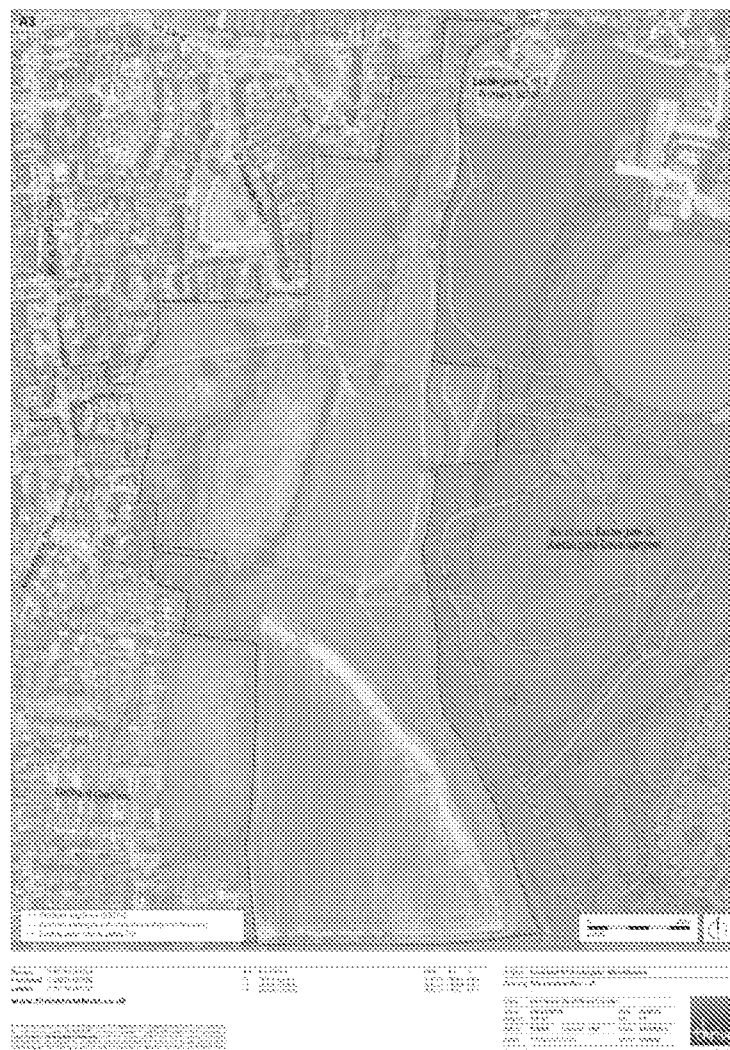
1.1 Project Background

- 1.1.1 This Environmental Statement (ES) has been prepared by Luken Beck mdp Ltd on behalf of CALA Homes (South Home Counties) Ltd and is the Environmental Statement (as defined by the EIA Regulations) to accompany a planning application that has been submitted to Arun District Council for the development of land east of Westergate (identified in Figure 1.2).

Figure 1.1: The Applicant, CALA Homes South Counties

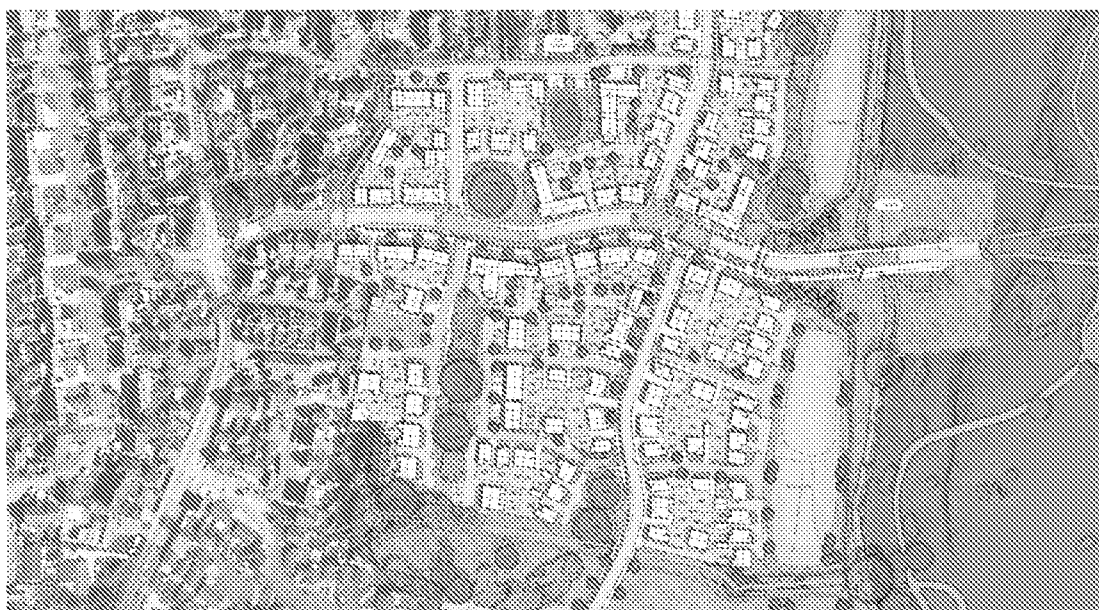


Figure 1.2: Site Location Plan



- 1.1.2 The planning application seeks hybrid consent for the following: 1) Full Permission sought for alterations to site access off Westergate Street and through Pine Close; east-west link road, including a bridge over the Lidsey Rife, drainage, landscaping & associated works; 2) Outline Planning Consent with all matters reserved except access for up to 400 No. dwellings with associated works. A plan identifying the area of the full element of the application is shown in Figure 1.3 outlined in orange. Figure 2.2 shows the Indicative site layout with Outline and Full Areas

Figure 1.3: Extract from Indicative Site Layout showing the Full application area (outlined in orange)



- 1.1.3 The site falls wholly within the jurisdiction of Arun District Council in West Sussex, which is the local planning authority for the site and the authority that the planning application has been submitted to for determination.

Figure 1.4: The Local Authority



- 1.1.4 As explained in the planning policy section in Chapter 4 – Planning Policy Context, the site forms part of the wider Barnham/ Eastergate/ Westergate strategic housing site (SD5) set out at Policy H SP1 of the adopted Arun Local Plan 2011-2031. The requirements for this strategic allocation are set out at Policy H SP2c, which includes that “this allocation is located around the small settlements of Barnham Eastergate and Westergate. This Strategic Allocation will provide at least 2,300 dwellings over the plan period, and up to 3,000 in total (a further 700 beyond 2031)” (see Figure 4.2).

- 1.1.5 A non-technical summary of the information contained in this ES is available as a separate document.

1.2 Purpose of this Environmental Statement

- 1.2.1 The Environmental Impact Assessment (EIA) methodology and purpose of this ES are set out in Chapter 3 – EIA Process and Approach. This ES however has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (hereinafter referred to as the ‘EIA Regulations’) which came into force on 16th May 2017. These regulations implement the EU Directive 2014/52/EU on the “assessment of the effects of certain public and private project on the environment” and describes and assesses the likely significant environmental effects of the development. The information contained within this ES must be taken into consideration by the decision maker and used to inform the determination of the planning application.

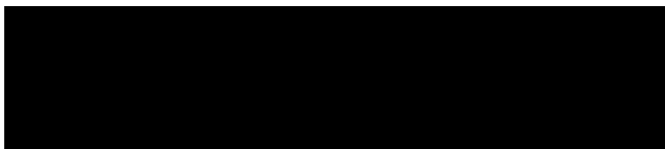
1.3 Project Team

- 1.3.1 The ES has been prepared by Luken Beck mdp Ltd with the assistance of the EIA team who are listed above. The assessment team includes specialist expertise from appropriately qualified and competent professionals who are suitably experienced in the relevant environmental topic to consider and assess environmental impacts and propose mitigation where necessary.

1.4 Copies of Environmental Statement

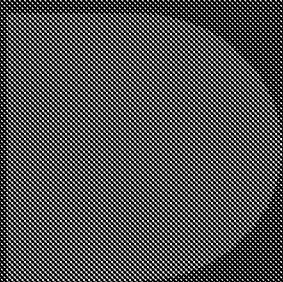
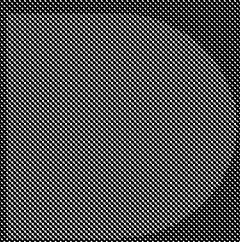
- 1.4.1 A copy of this Environmental Statement can be obtained from Luken Beck mdp Ltd, contact details below. The ES can be provided in either paper or electronic format. A charge of £500 will be made per paper copy and £15 in electronic (.pdf) format, to cover the costs of preparing these documents. The non-technical summary is available free of charge.

Luken Beck mdp Ltd
30 Carlton Crescent
Southampton
SO15 2EW



2. Site Description and Proposed Development

- 2.1 Site Location & Description
- 2.2 The Proposed Development



2 Site Description and Proposed Development

2.1 Site Location & Description

- 2.1.1 The three villages of Barnham, Eastergate and Westergate are located in Arun District between the A27 and the south coast of the Sussex Coastal Plain, east of Chichester, north of Bognor Regis and north-west of Littlehampton in West Sussex. Barnham and Eastergate are located on the B2233 and Westergate on the A29.
- 2.1.2 The villages of Eastergate and Westergate are separated by a small stream through the Lidsey Rife which will necessitate a bridge between the eastern and western parts of the allocation. The two villages have a population of c.6000. The West Coastway Line runs through the two parishes and provides services as far as Cardiff and into Central London.
- 2.1.3 The site forms the north western part of the BEW Allocation. It is an irregularly shaped piece of land which measures 19.35 ha in area. The site is defined by the built edge of Westergate on the western edge, the railway line along its southern edge and the Lidsey rife along its eastern edge. The site sits within Aldingbourne Parish and borders the Barnham and Eastergate Parish on its eastern boundary.
- 2.1.4 The site will be set within the context of the wider allocated BEW sites.
- 2.1.5 A site location plan is provided in Figure 2.1.

Surrounding Area

- 2.1.6 Eastergate and Westergate have developed from historic communities which were predicated at the junctions of important movement routes, while Barnham developed substantially in the 20th Century to the north and west of the new railway station. The characteristics of the Coastal Plain define the area with low lying fields which are often small in size, divided by planting and/or watercourses. Much of the open land is use for agriculture and horticulture.
- 2.1.7 Although collectively identified as three villages, each community has a distinct sense of identity which is reinforced by a number of green gaps and wedges which separate the communities and avoid coalescence. To move eastwards along Barnham Road from Eastergate into the centre of Barnham is to experience a distinct sense of arrival at the hear of the settlement.
- 2.1.8 The A29 runs to the west of the site through Westergate and provides a strategic link between Bognor Regis and the A27 to the north. The B2233 provides an important east-west route through Eastergate and Barnham before continuing eastwards to Ford and Littlehampton.

2.1.9 There are two Conservation Areas: Church Lane to the south of Eastergate and along Church Lane to the south of Barnham. An area along the B2233 is designated as an Area of Special Character.

2.1.10 Watercourses, which are part of the wider network of the West Sussex streams, run through the western and eastern parts of the overall site. The Lidsey Rife runs north – south along the eastern edge of the site and will generate a distinctive character along its eastern edge. The Lidsey Rife has been identified as a Biodiversity Opportunity Area.

Transport

2.1.11 Barnham Station provides frequent services to Brighton, London, Southampton and Portsmouth and more locally to Littlehampton, Chichester and Bognor Regis.

2.1.12 Bus route 66 / 66a serves Barnham on the Bognor Regis to Walberton and Yapton route, while the 85 / 85a connects Barnham and Westergate to Arundel and Chichester.

2.1.13 A Transport Assessment is included in this application and is summarised below setting out the potential improvements to encourage non-car modes of travel.

Local Amenities

2.1.14 Barnham, Westergate and Eastergate each have their own primary schools. There are 2 secondary schools in the area, the Westergate Community School and the St Philip Howard Catholic High School. Early years childcare provision is available at the Westergate Nursery and Hopscotch Pre-School in Westergate. Provision is also available at the Eastergate Nursery and the Barnham Community Pre-School.

2.1.15 Healthcare provision is available at The Croft Surgery in Eastergate and the Chantry House Dental Care Surgery in Barnham. Community facilities are available at the Eastergate Village Hall and Aldingbourne Community and Sports Centre. Sports and Leisure facilities are available at the Six Villages Sports Centre in Westergate. A local play space is available at Olivers Meadow, Aldingbourne, Westergate.

Figure 2.1: Site Location Plan



Romey Porthead
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Rev Description
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06/08/23 MK

Scale 1:1000
0 10 20 30 40 50 60 70 80 90 100

Project Land East of Westergate, Aldingbourne
Drawing Location Plan

Client	Colt Homes South Herts Counties	Date	06/08/23
Job no.	CAIA230709	Revision	PI
Dwg no.	LP01	Scale	A2:50 in A1
Author	MK	Checker	
Status		Office	Romey
Client ref.			



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2.2 The Proposed Development

2.2.1 The planning application seeks hybrid consent, with full permission sought for the site access off Westergate Street and through Pine Close; east-west link road, including a bridge over the Lidsey Rife and associated landscaping, drainage and works and outline permission with all matters reserved (except for access) for up to 400 residential dwellings and associated works. A Reserved Matters application will be prepared for the details of the outline elements of the scheme following approval of this application.

2.2.2 The proposals include:

- Up to 400 residential dwellings, with up to 40 dwellings provided as Affordable Housing (10% of the overall total);
- 7.33 ha of public open space, 0.11 ha of play spaces and other associated public open space;
- Dedicated footpath and cycle paths throughout the site;
- Access to existing and future bus routes, cycle routes and footpaths via Westergate Street/Pine Close and eastwards following construction of road bridge and footpath connections;
- Construction of the first section of the East/West link, including the delivery of a road bridge on the eastern boundary (restricted to bus, cycle and Pedestrian use until the A29 realignment is completed);
- Policy compliant provisions for parking, cycle storage and electric vehicle charging;
- Sustainable construction with modern specification housing;
- Contributions to infrastructure via CIL and S106

2.2.3 The proposed layout is shown in Figure 2.2.

[illegible]

3. EIA Process and Approach

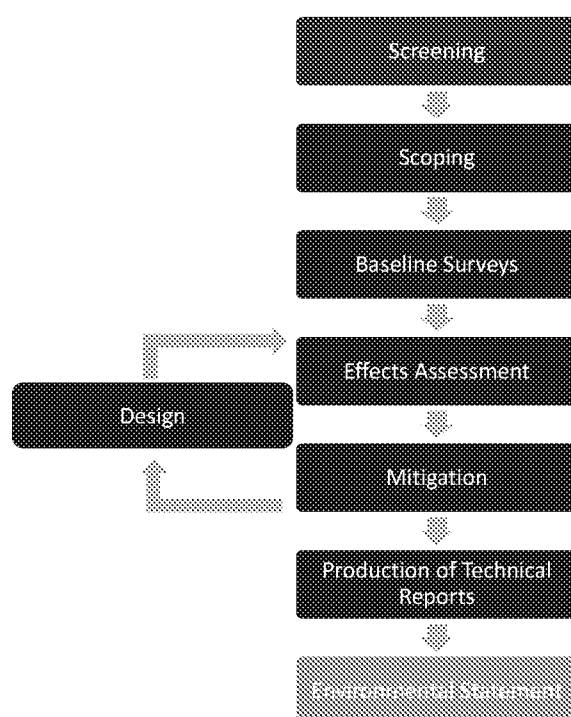
- 3.1 Introduction
- 3.2 The Environmental Impact Regulations 2017
- 3.3 Environmental Impact – Scoping and Screening
- 3.4 The Environmental Statement
- 3.5 Assessing Cumulative Effects

3 EIA Process and Approach

3.1 Introduction

- 3.1.1 This chapter describes the Environmental Impact Assessment (EIA) process used to prepare this ES and describes the general structure and content and explains the process of identifying and assessing likely significant environmental effects of the development.

Figure 3.1: EIA Process



3.2 The Environmental Impact Assessment Regulation 2017

- 3.2.1 The need for EIA was derived from the EU Directive 2014/52/EU on “the assessment of certain public and private projects on the environment” and was incorporated into UK planning legislation through the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, which came into force on 16th May 2017. An ES must be submitted as part of a planning application for EIA development and this ES has been prepared in accordance with the EIA Regulations. The environmental information contained within an ES must then be taken into account by the decision maker in determining the planning application.
- 3.2.2 The EIA Regulations define two categories of EIA Development – Schedule 1 and Schedule 2 developments. Schedule 1 developments are those identified in Schedule 1 of the Regulations, where EIA is always mandatory,

for example nuclear power stations. Schedule 2 developments are those developments identified in Column 1 of the table in Schedule 2 of the Regulations where “any part of that development is to be carried out in a sensitive area; or... any applicable threshold or criterion in the corresponding part of Column 2 of that table is respectively exceeded or met in relation to that development” where EIA is only required for those developments where there is a likelihood of significant environmental effects. A ‘sensitive area’ is defined in the Regulations as a Site of Special Scientific Interest (SSSI), National Park, the Broads, a property appearing on the World Heritage List, a scheduled monument, an Area of Outstanding Natural Beauty (AONB) or a European site.

- 3.2.3 The proposals are not Schedule 1 development but is development that comprises an ‘Infrastructure Project’ as identified by Section 10, Column 1 of the table at Schedule 2 of the EIA Regulations. Section 10(b) concerns ‘urban development projects’ and whilst the proposal is not located within a ‘sensitive area’ (as defined by the Regulations) it exceeds the indicative thresholds set out Column 2, as it includes more than 150 dwellings and the site area exceeds 5 hectares. As such the proposals are Schedule 2 development.

3.3 Environmental Impact – Screening and Scoping

- 3.3.1 A development falling within Schedule 2 is not automatically EIA development and EIA is only required for Schedule 2 developments where there is a likelihood of significant environmental effects. The need for EIA for Schedule 2 development is determined through the Screening process, in accordance with Part 2, Regulation 5 of the EIA Regulations. This can be either through the applicant accepting that a development is EIA development and submitting an environmental statement with a planning application, whereinafter an application is considered to be EIA Development and determined in accordance with the EIA Regulations or the local planning authority adopting a Screening Opinion confirming whether a development is EIA development (following the consideration of initial environmental information).
- 3.3.2 In relation to this scheme, although it is not considered that in isolation the proposed development would have likely significant environmental effects, there are a number of large scale developments that have been approved or are under consideration in the local area and when considering the in-combination effects of proposals in the local area there is the potential for the proposed development to have significant environmental effects and as such it is considered to be EIA development.
- 3.3.3 To determine the extent (scope) and level of environmental information to be presented within an Environmental Statement, a request can be made to the local planning authority for a ‘Scoping Opinion’, in accordance with Part 4, Regulation 15 of the EIA Regulations. In adopting a Scoping Opinion, the local planning authority undertakes relevant consultation to identify those aspects of a development where significant environmental effects may occur and as such which should be considered as part of an EIA (‘scoped in’) and included within an ES and those aspects where significant environmental effects are unlikely to occur and do not need to be considered within the EIA (‘scoped out’).

- 3.3.4 A request for a Scoping Opinion for the proposals was submitted to Arun District Council in June 2022 and a Scoping Opinion was adopted by them on 21st November 2022 that confirms the scope of the EIA and information to be presented in this ES. A copy of the Scoping Opinion is included in Appendix 3.2.

3.4 The Environmental Statement

Approach to Assessment

- 3.4.1 The EIA Regulations require, at Paragraph 4(2), that the EIA “identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors;
- (a) population and human health;
 - (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(a) and Directive 2009/147/EC(b);
 - (c) land, soil, water, air and climate;
 - (d) material assets, cultural heritage and the landscape;
 - (e) the interaction between the factors referred to in sub- paragraphs (a) to (d).”
- 3.4.2 Paragraph 4(3) further states that “the effects referred to within Paragraph (2) on the factors set out in that paragraph must include operations effects of the proposed development where the proposed development will have operational effects” and Paragraph 4(4) further states that “the significant effects to be identified, described, and assessed under Paragraph (2) include the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development”.
- 3.4.3 Paragraph 18(3) of the EIA Regulations confirms that an ES must include “*at least:*
- (a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;
 - (b) a description of the likely significant effects of the proposed development on the environment;
 - (c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
 - (d) a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;
 - (e) a non-technical summary of the information referred to in sub- paragraphs (a) to (d); and
 - (f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.”

- 3.4.4 This document is the ES that has been produced in accordance with the EIA Regulations and follows good practice from the Government and other bodies such as the Institute of Environmental Management and Assessment (IEMA), with a consistent format to provide easily accessible information. This is intended to make it easy for readers interested in a particular issue or aspect of the scheme to be able to quickly identify those components.

EIA Process and Methodology

- 3.4.5 As this ES includes consideration of many different issues each with different methodologies for considering the significance of any impacts, each individual chapter identifies the methodology adopted. The general approach however is identified below.

Study Area

- 3.4.6 The boundaries of the topic study areas are individually identified. The individual study areas are sufficiently extensive to ensure that all likely impacts of significance have been identified. The extent of any study however does not imply the extent of any impact.

Methodology

- 3.4.7 The methodology of each assessment varies depending on the issue under consideration. Each chapter contains a section which specifies the appropriate methodology adopted. Qualitative techniques rely on professional judgement, previous experience and knowledge. Quantitative techniques seek to model the environment. The assessments are informed by statutory requirements and based upon good practice. The methodologies make clear the basis of the assessment and whether it is based on fact, professional judgement or on opinion. Furthermore, any difficulties encountered or assumptions made during the assessment process are also clearly stated.

Planning Policy Context

- 3.4.8 The planning policy context for the overall site is contained in Chapter 5, however each topic section includes topic specific policy (planning and otherwise) which forms the background to the issue.

Existing Environment and Sensitivity

- 3.4.9 The consideration of the existing environment provides a benchmark for assessing the significance of impacts. It includes the identification of significant and sensitive receptors within the study area, a consideration of the likely variation in conditions without the proposal, the robustness of the environment and sensitivity to change.

Consideration of Alternatives

- 3.4.10 As stated above, the EIA Regulations state at Paragraph 18(3)(d), the ES shall include [inter alia] “a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its

specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment”.

- 3.4.11 The Institute of Environmental Management and Assessment (IEMA) produced good practice in respect of the consideration of alternatives under the previous EIA Regulations, which is still considered relevant, and encouraged practitioners to consider the following:

- Alternative locations and scale of development
- Alternative site layouts and access arrangements
- Different approaches to scheme design
- Alternative processes and alternative phasing of construction

Consideration of Cumulative Effects

- 3.4.12 Although each application should be considered on its own merits, the EIA Regulations require the consideration of cumulative effects, although cumulative effects is not defined. The NPPG however identifies that there are occasions where an existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development.

- 3.4.13 In addition to assessing the environmental impacts of this site, the ES also considers the cumulative impacts from other planned development proposals within the area, where there is a likelihood that the development will be delivered. This includes development with:

- An extant planning consent that has not been implemented or is currently under construction, but not complete
- An allocation for development in an adopted development plan, where there is a significant level of publicly available environmental information to enable in-combination effects to be considered and confidence that it will be delivered during the plan period
- An undetermined planning application, where the principle of development accords with the adopted planning policy

Impact Assessment

- 3.4.14 Suitable impact assessment techniques have been selected by the specialist consultants, which follow appropriate, tried and tested models, appropriate standards, best practice and legislative factors. Where there are no accepted standards the consultants have used their professional judgements, with appropriate evidence to justify the approach adopted.

Mitigation

- 3.4.15 'Mitigation' is an umbrella term used to identify actions or designs that reduce a significant impact of a development on the environment. Mitigation may not necessarily reduce the impact on the feature to nil but may mitigate for any percentage of the impact or bring it within acceptable limits.
- 3.4.16 In order to reduce the magnitude of an impact and reduce the significance of an environmental effect, mitigation measures can be implemented. The following hierarchy is used when considering mitigation measures.
- Prevention – to avoid adverse effects as far as possible by designing out from a proposal or using preventative measures during the construction process
 - Reduction – to minimise adverse effects as far as possible
 - Compensation – the prevention of measures of the same value to off-set the impact
 - Enhancement – to identify opportunities where enhancement can be incorporated into the scheme where effects have been neutralised, where the feature is enhanced
- 3.4.17 There is a distinction between types of mitigation measures and how they can be incorporated as follows:
- Inherent mitigation – this is the provision through the design process, where the proposal design has been changed or a feature integrated to take account of an environmental impact
 - Additional mitigation – this is mitigation which is identified as a result of the significant impacts that have been identified during the assessment process

Residual Impacts

- 3.4.18 Residual impacts are identified to consider impacts of the proposal following the implementation of mitigation and the extent to which the mitigation measures proposed are effective in addressing impacts and if mitigation cannot bring an impact within acceptable limits this is identified.

Monitoring

- 3.4.19 Proposals for on-going monitoring, particularly for residual impacts predicted to be significant are set out.

Defining the Significance of Impacts

- 3.4.20 The significance of impacts has been derived from a standardised appraisal system. Impacts are defined as those where the effect of an activity exceeds the normal or anticipated variation in baseline conditions, as predicted in the 'no scheme world' but does not indicate the relative importance of that impact and not all impacts are significant. The EIA Regulations requires the identification of significant impacts and significance is determined by considering the value of a receptor and the sensitivity of the environment. The residual impact, impacts after mitigation, are of greatest importance.

- 3.4.21 Where possible a consistent approach has been taken in assessing significance, including consideration of the sensitivity of the receiving environment and magnitude of the impact.

Sensitivity of the Receiving Environment

- 3.4.22 The sensitivity of the receiving environment refers to its importance, i.e. its environmental value/ attributes and is a measure of the adaptability and resilience of an environment when affected by an impact. The terminology used to define sensitivity can vary according to discipline or the methodology being used, however 'sensitivity' is generally defined in Table 3.1.

Table 3.1: Sensitivity of the Receiving Environment

High	The environment is fragile and an impact is likely to leave it in an altered state from which recovery will be difficult
Medium	The environment has a degree of adaptability and resilience and is likely to cope with the changes caused by an impact, although there may be some residual modification as a result
Low	The environment is adaptable and is resilient to change. Nearly all impacts can be absorbed without modifying baseline conditions.

Magnitude of the Impact

- 3.4.23 This is the scale of change that the impact causes compared to the baseline and how the change relates to accepted limits and standards; this is defined in Table 3.2.

Table 3.2: Magnitude of the Impact

Substantial	A large change compared to the natural variations in background levels. A clear breach of limits and standards may also occur
Moderate	Change which is noticeable and may be a breach of limits and standards
Slight	Change which when compared to background levels is only just noticeable. Limits and standards will not be breached.
Negligible	Minor changes to baseline environment that is not perceptible.
No impact	No change to baseline environment

Significance of Impact

- 3.4.24 The significance of an impact is determined by considering magnitude in relation to sensitivity, this is defined in Table 3.3.

Table 3.3: Significance of Impact

Sensitivity of Receptor	Magnitude of Impact				
	Substantial	Moderate	Slight	Negligible	No Impact
High	Major	Major-Moderate	Moderate	Moderate-Minor	Neutral
Medium	Major-Moderate	Moderate	Moderate-Minor	Minor	Neutral
Low	Moderate	Minor	Minor-Neutral	Minor-Neutral	Neutral

Type of Impact

- 3.4.25 The assessment will identify the type of impact, identified in Table 3.4.

Table 3.4: Type of Impact

Adverse	Detrimental or negative effect to an environmental resource or receptor
Neutral	An effect that on balance, is neither beneficial nor adverse to an environmental resource or receptor or an effect that is equally beneficial and adverse to an environmental resource or receptor
Beneficial	Advantageous or positive effect to an environmental resource or receptor
Direct	Direct effects are those which arise as a direct consequence of a project action, e.g. the loss of habitat or the run-off of surface water to a watercourse
Indirect (secondary)	Indirect effects include, for example, the decline in the abundance of a species as a result of the loss of habitat or the damage to aquatic vegetation as a result of water pollution. Other common examples include the effect on air quality and ambient noise as a result of increased traffic flows
Cumulative	The combined effects of impacts

Spatial Extent of an Impact

- 3.4.26 In assessing the scale of an impact it is necessary to identify the geographical area over which the effect will be experienced, identified in Table 3.5.

Table 3.5: Spatial Extent of an Impact

National/ International	The impact is likely to affect an interest of supra-regional concern, such as a national or international designation
Regional	The impact is likely to affect sub-national concerns, including regional and county level concerns
Local/ Immediate	The impact is likely to affect district level concerns, or an immediate area around the proposal

Frequency of an Impact

- 3.4.27 This is the duration of the impact compared to the activity causing it. It is different to the timescale, which is the duration of the impact irrespective of the activity causing it, identified in Table 3.6.

Table 3.6: Frequency of an Impact

Continuous	The impact persists over the life of the activity
Frequent	The impact is likely to occur for a period of greater than 5% of the activity, or will be intermittent
Infrequent	The impact of the activity is likely to occur for a period of less than 5% of the life of activity

Duration of an Impact

- 3.4.28 The duration of an impact is appropriate in determining significance, with the permanent and temporary impacts distinguished. Permanent is defined as those impacts which result in an irreversible change to the baseline environment or which persist for the foreseeable future. Temporary impacts are those which persist for a limited period only.
- 3.4.29 The duration of an impact is also considered in terms of being short-term, medium-term and long-term impacts, these are defined in Table 3.7.

Table 3.7: Duration of Impact

Long Term	More than 10 years
Medium Term	From 5 years to 10 years
Short Term	Less than 5 years

Reversibility

- 3.4.30 The reversibility of impacts is discussed, with impacts identified as being either reversible (capable of being reversed so that that previous state or situation is restored) or irreversible (permanent).

3.5 Assessing Cumulative Effects

- 3.5.1 A review of other development schemes has been undertaken to identify any development sites or proposals that are likely to be delivered where cumulative effects should be assessed. This issue was considered in the request for a Scoping Opinion and included those sites where possible cumulative effects may be identified and as such was considered by Arun District in adopting the Scoping Opinion. No additional sites were added by the Council in the Scoping Opinion and as such it is assumed that this list was accepted. The sites are identified in Table 3.8.

Table 3.8: Sites for Assessment of Cumulative Impacts

Site Address		Parish	Applicant	Reference	Application	Status
Developments Located within the BEW Strategic Allocation						
1	Land to the North of Eastergate and North-West of Barnham, PO22 ODF	Aldingbourne & Eastergate	West Sussex County Council	WSCC/052/20	Construction of a single carriageway with shared cycleway / footway, roundabouts, road markings, traffic signals, bus stops, provision of hard and soft landscaping, construction of a substation building, installation of a noise barrier, and other associated works.	Approved, 30 th June 2021
2	Land North of Barnham Road and East of Fontwell Avenue Eastergate	Barnham & Eastergate	Barratt David Wilson Homes	BN/195/22/PL	Hybrid application: 1)- Full planning application for the demolition of existing dwelling and outbuildings and the construction of residential dwellings, public open space including recreation space and associated infrastructure and works to be constructed in 5 distinct areas (A-E) each one independent from the other and 2)-Outline application with all matters reserved other than means of access for a care home. This application falls within Strategic Site HD5, CIL Zone 1 and 2 (Zero Rated) and may affect the setting of listed buildings. This application is subject to an Environmental Statement.	Application for 551 dwellings, submitted 13 th January 2023
3	Barnham, Eastergate, Westergate BEW Parcel SC1 Barnham	Barnham & Eastergate	CC Projects	BN/11/22/OUT	Outline application with all matters reserved (except for the A29 Realignment) for the demolition of existing structures and mixed use development to provide up to 1,250 residential dwellings (Use Class C3), Care Home/Senior Living Accommodation (Use Class C2/C3), flexible retail and community floorspace (Use Classes E/F2/Sui Generis), a Primary School plus open space,	Submitted, 4 th February 2022

					landscaping, drainage and all other associated ancillary works; and realignment of the A29 and early connection to existing A29 including construction of a new road carriageway, junctions and associated infrastructure. This application also lies within the parish of Aldingbourne, affects the setting of listed buildings, affects the character & appearance of the Eastergate Church Lane Conservation Area and affects a Public Right of Way. This application is the subject of an Environmental Statement.	
4	Woodgate Centre, Oak Tree Lane, Woodgate, PO20 3GU	Aldingbourne	Pye Homes	AL/107/21/PL	Demolition of the Woodgate Centre buildings (including 3 No. residential dwellings) & the construction of 180 No. residential dwellings with the creation of new vehicular access with footways and cycleways, ancillary road infrastructure, emergency access arrangements, associated parking, public open space, including children's play space, landscape planting, surface water attenuation & drainage & other associated infrastructure. This site is in Cil Zone H SP2, BEW Strategic Site and is not CIL Liable.	Submitted, 16 th August 2021 and resolution to grant approved at Committee on 30 th November 2022 subject to S106
5	Boweries Barnham Road Eastergate PO20 3RT	Barnham & Eastergate	Domusea Developments	BN/135/20/PL	Construction of 30 no. dwellings, new access, public open space, landscaping and associated works (submission following EG/22/19/OUT). This site is a Strategic Site in SP2 (Zero Rated).	Approved, 30 th July 2021
6	Warwick Nursery Barnham Road Eastergate Barnham PO203RT	Barnham & Eastergate	Landacrew (Eastergate) Ltd	BN/153/20/PL	44 No. dwellings & associated infrastructure. This site falls within the BEW Strategic Site, CIL Zone 1 (Zero Rated).	Approved, 10 th December 2021
Other Development Sites						

7	Land at former Eastergate Fruit Farm, Eastergate, PO20 3RP	Barnham & Eastergate	Linden Ltd	EG/71/14/OUT	Outline for the erection of 60 residential dwellings with new vehicular access, open space and other ancillary works.	Approved, 3 rd February 2015
			Linden Homes (South) Ltd	EG/6/18/RES	Approval of reserved matters following outline consent EG/71/14/OUT for the erection of 60 No. dwellings with new vehicular access, open space & ancillary works.	Approved, 25 th May 2018
8	Land south and west of Barnside and east of Pond, Hook Lane	Aldingbourne	Whitgift Estates	AL/8/16/OUT	Outline application with all matters reserved for a residential development of up to 14No. dwellings and associated works including access, landscaping and open space. This application is a departure from the development plan.	Allowed at appeal, 3 rd May 2018
			Metis Homes	AL/33/19/RES	Approval of reserved matters following the consent of AL/8/16/OUT (APP/C3810/W/16/3155330) for the erection of 14 No. dwellings with associated access, parking, landscape and open space.	Approved, 15 th July 2019
9	Land at Nyton Road and Northfields Lane, Westergate and Land off Fontwell Lane, Eastergate	Walberton	Land Fund Ltd	AL/61/13/OUT	Outline application with some matters reserved for the demolition of existing glasshouses, residential bungalow, stables and various outbuildings and residential development of up to 268 dwellings including 30% affordable housing (incorporating 60 senior living units), with associated access, public open space and landscaping, This is a Departure from the Development Plan.	Allowed at appeal, 23 rd February 2015
			Taylor Wimpey UK Ltd	AL/102/17/RES	Application for approval of Reserved Matters following outline application AL/61/13/OUT for the demolition of existing glasshouses, residential bungalow, stables and various outbuildings and residential development of 268 dwellings including 30% affordable housing	Approved, 24 th January 2018

					(incorporating 60 senior living units), with associated access, public open space and landscaping.	
10	Wings Nursery	Aldingbourne	Mr S Keet	AL/32/19/OUT	Outline application with some matters reserved for the erection of 55 No. dwellings, access arrangements, sustainable drainage measures, public open space landscaping and all other associated works (resubmission following AL/115/17/OUT). This application is a Departure from the Development Plan.	Approved, 3 rd October 2020
11	Land North of Lee's Yard, Lidsey Road, Woodgate, PO20 3SU	Aldingbourne	Mr T Johnson	AL/21/20/OUT	Outline application with some matters reserved for the erection of 38 No. dwellings consisting of 5 No. 4-bed houses, 14 No. 3-bed houses & 19 No. 2-bed houses, with communal work hub and associated car parking & landscaping (resubmission following AL/57/18/OUT). This application is a Departure from the Development Plan.	Approved, 22 nd October 2020
12	Land West of Fontwell Avenue, Eastergate	Barnham and Eastergate	Reside Developments Ltd	BN/50/20/PL	Demolition of existing structure on-site and erection of 42 No. dwellings with access, parking, landscaping & associated works. This application is a Departure from the Development Plan.	Approved, 11 th December 2020
13	Land South of Barnham Station, Barnham	Barnham and Eastergate	Gleeson Strategic Land Ltd	BN/142/20/OUT	Outline planning application with all matters reserved, other than principal means of access, for up to 200 No. dwellings, with access taken from Marshall Close, associated infrastructure and landscaping and demolition of existing buildings. his application is a Departure from the Development Plan, may affect the setting of listed buildings, may affect the Church Lane, Barnham Conservation Area & affects a Public Right of Way.	Allowed at appeal, 5 th January 2022

			Barratt David Wilson Homes	BN/147/22/RES	Approval of reserved matters following BN/149/22/PL for 200 dwellings respect of appearance, landscaping, layout and scale. This application may affect the setting of listed buildings, may affect the Church Lane, Barnham Conservation Area & affects a Public Right of Way.	Submitted, 4 th November 2022 and decision deferred at Committee on 28 th June 2023
14	Land at Bayards, Level Mare Lane, Eastergate, PO20 3RZ	Aldingbourne	Reside Developments Ltd	AL/113/21/OUT	Outline application with all matters reserved, apart from access, for up to 69 No dwellings with access, parking, landscaping & associated works. This application is a Departure from the Development Plan.	Approved 25 th May 2022
			Miller Homes Ltd	AL/96/22/RES	Approval of reserved matters following outline consent AL/113/21/OUT for 67 No houses. This application is a Departure from the Development Plan and is in CIL Zone 3 and is CIL Liable as new dwellings.	Approved, 30 th November 2022
15	Land adjacent to Woodgate Nurseries, Lidsey Road, Aldingbourne, PO20 3SU	Aldingbourne	Hanbury (AM) Ltd	AL/129/21/OUT	Outline planning application with all matters reserved (except access) for residential development with up to 95no. dwellings (Use Class C3), informal and formal public open space, landscaping, drainage and other associated works. This application is a Departure from the Development Plan	Approved, 22 nd August 2022

3.6 Description of Alternatives Considered

- 3.6.1 As outlined above, the EIA Regulations require a description of the reasonable alternatives considered, the following have been considered as part of these proposals:

Do Nothing, Alternative Locations and Scales for Growth

- 3.6.2 To 'do nothing' will mean that the site will contribute nothing towards the three objectives to sustainable development and will not result in the potential benefits arising from the proposed housing provisions, facilities and open spaces. Arun District Council has allocated the development site as part of the wider BEW site in the adopted Arun Local Plan 2011-2031 as offering a sustainable extension to Barnham, Eastergate and Westergate in order to assist in meeting the District's housing need and which was examined and accepted by the Inspector as appropriate as part of the Local Plan preparation process. As a consequence, if the site was not developed and the characteristics remained as existing it will fail to contribute towards housing land supply and will lead to pressure being placed on other sites to accommodate the required levels of growth.

- 3.6.3 The Inspector comprehensively considered housing need, growth and the strategic housing sites at the Local Plan examination and concluded at paragraphs 84 and 85 in respect of housing growth that:

"Taking the OAN together with the housing needs from elsewhere in the HMA results in a housing requirement of some 1,000 dpa or 20,000 homes over the LP period. This represents a significant level of growth. However, the SA and HRA together with other parts of the evidence base such as the SFRA and the SSWMS indicate that the level of growth can be accommodated without significant negative effects. This is supported by my analysis of the strategic housing allocations set out below. As a result meeting the full OAN and some needs from elsewhere would be consistent with policies in the NPPF.

Policy H SP1 reflects the requirement for 20,000 homes. However, in the light of the objective to boost significantly the supply of housing, the figure should be seen as a minimum figure rather than a target. This change to ensure that the LP is positively prepared and consistent with national policy would be achieved by MM25"

- 3.6.4 In terms of considering the acceptability and sustainability of the wider BEW site to accommodate the level of growth set out in the allocation, the Inspector concluded at Paragraphs 159-165:

"159. The BEW allocation proposes up to 3,000 dwellings around the 3 villages (SD5). The significant number of dwellings is justified by the level of services and facilities available in the 3 villages as a whole and the scope for new facilities to be provided on the back of the allocations, including a new community hub which would improve the overall level of services in the villages. A new secondary school would come forward in the area. Employment development is also incorporated within the

allocation. Barnham Railway Station is close to the allocation, providing regular rail services to Chichester, the coastal towns and beyond. Development would facilitate the realignment of the A29 to improve links between Bognor Regis and the A27 and relieve congestion in locations such as the Woodgate Level Crossing.

160. The allocation would extend the built-up areas of the villages into existing open countryside. However, overall the site is visually contained by existing development to the north, west and east and by vegetation to the south. Development would not have wider landscape impacts. That said some parts of the allocation are particularly sensitive to change principally because of their role in providing separation between Eastergate and Barnham.

161. Criterion a. of Policy H SP2c (SD5) seeks to conserve the separation of the villages. However, given the potential for development to further erode the gap, this element of the policy requires greater clarity so that it is positively prepared (MM32). The landscape impact would be within acceptable bounds with the MM proposed.

162. Highway improvements would be necessary to ensure that the allocations would have safe and suitable accesses and the highway network would be able to operate safely and efficiently. The residual cumulative impacts of the developments on the transport network would be less than severe taking into account improvements set out within criterion g. of Policy H SP2c and Policy T SP3, including the provision of a new route for the A29. The new A29 route is capable of being designed so that it can serve the dual functions as both a through-route and local distributor. The wider highway network impacts are capable of mitigation, including the A27 junctions, as set out in the ATS.

163. 90% of the allocation is in Flood Zone 1 but there is a system of drains and ditches affecting the site linking to the Lidsey Rife and a high water table. Ground and surface water infiltration of the sewerage system within the Lidsey WWTW catchment has led to foul water flooding and pollution. However, the evidence indicates that flood risk and drainage issues are capable of being mitigated taking into account the scope to avoid development in Flood Zones 2 and 3 and the use of SUDs. Section 3 of Policy W DM1 provides safeguards in this respect. However, given the network of watercourses, existing problems and the scale of the development Policy H SP2c (SD5) should recognise the need to pay particular attention to a strategy for surface water management. This change to ensure that the policy is positively prepared would be achieved by MM32.

164. Lidsey WWTW has limited capacity so would only be able to serve early phases of the development. Later stages would be served by a new connection to Ford WWTW which has spare capacity to serve development and potential to be upgraded during the lifetime of the LP. This is explained by MM58 and MM65 (paragraph 210 refers).

165. The challenges in delivering the site are recognised but the Council and promoters of the site agree that the allocation can deliver 2,300 dwellings in the Plan period taking into account policy and infrastructure requirements and viability issues. A hybrid planning application has been submitted for an initial phase of the development totalling some 350 dwellings. The indications are that delivery of the majority of the allocation would take place in the LP period."

- 3.6.5 It has been concluded therefore following a comprehensive selection of sites within the District to accommodate the predicted levels of growth and following independent examination that the allocations that it has been confirmed that it offers a suitable and sustainable location for development.

Alternative Site Layouts

- 3.6.6 The proposed layout was developed with regard to site's opportunities and constraints and the principles contained within the BEW Framework masterplan that was endorsed by Arun District Council in November 2020 and which seeks to guide the development the BEW strategic allocation. The framework includes an indicative masterplan for the wider site allocation (including the proposed development site), identifying access locations, development parcels and open spaces.
- 3.6.7 The location of the housing (including the proposed density and building heights parameters) and open spaces has been influenced by potential landscape impacts and also to avoid any areas of flood risk and ecological sensitivity and to respect existing vegetation where possible (especially veteran trees) and the setting of heritage assets. The proposed indicative layout acknowledges these constraints and demonstrates a form of development which responds positively to the site's context. A number of layouts were considered in finalising the proposals for submission which have been discounted for sound planning reasons. These are discussed in more detail within the accompanying Design and Access Statement, which shows the evolution of the indicative proposals.
- 3.6.8 The proposed site access arrangements have been the subject of comprehensive technical review and extensive discussions with the Highway Authority. Access opportunities to the site are constrained by the availability of appropriate connections to the highway network, with the site access off Westergate Street and via Pine Close and with a bridge over the Lidsey Rife consistent with the principles envisaged in the Framework Masterplan and enabling sustainable connections to be created the wider BEW site allocation and providing necessary highway safety standards. Alternative alignments of the east-west access route through the site and location of the bridge were considered, with the finalised alignments providing a suitable and direct connection through the site, with the location of the bridge selected to respect the open spaces and form of development shown on the masterplan for the site to the east.

4. Planning Policy Context

- 4.1 National Planning Policy
- 4.2 Local Planning Policy

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4 Planning Policy Context

4.1 National Planning Policy

4.1.1 National Planning Policy Framework (NPPF)

4.1.1.1 Guidance is provided by the central government in the form of the NPPF published in December 2023 which is a significant material consideration in the determination of planning applications. The NPPF confirms the purpose of the planning system is to ‘*contribute to achieving sustainable development*’ (Paragraph 7). Furthermore, Paragraph 8 advises that there are three over-arching objectives to sustainable development, namely economic, social and environmental. With regard to each objective, the NPPF defines their purpose as;

- **An Economic Objective:** To help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.
- **A Social Objective:** To support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and
- **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.

4.1.1.2 Paragraph 10 continues;

“So that sustainable development is pursued in a positive way, at the heart of the framework is a presumption in favour of sustainable development...”

4.1.1.3 It confirms at Paragraph 11 that in decision-taking this means (inter alia);

“(c) approving development proposals that accord with an up-to date development plan without delay...”

4.1.1.4 With respect to strategic plan-making, Paragraph 22 states;

“Strategic policies should look ahead over a minimum 15 year period from adoption, to anticipate and respond to long-term requirements and opportunities, such as those arising from major improvements in infrastructure. Where larger scale developments such as new settlements or significant extensions to existing villages and towns form part of the strategy for the area, policies should be set within a vision that looks further ahead (at least 30 years), to take into account the likely timescale for delivery.”

4.1.1.5 With respect to allocated sites, Paragraph 23 of the NPPF advises;

“Broad locations for development should be indicated on a key diagram, and land-use designations and allocations identified on a policies map.”

4.1.1.6 With respect to decision-making, Paragraph 38 of the NPPF advises;

“Local planning authorities should approach decisions to proposed development in a positive and creative way. They should use the full range of planning tools available, including brownfield registers and permission in principle, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible.”

4.1.1.7 Paragraph 58 relates to viability and states that

“Where up-to-date policies have set out the contributions expected from development, planning applications that comply with them should be assumed to be viable. It is up to the applicant to demonstrate whether particular circumstances justify the need for a viability assessment at the application stage. The weight to be given to a viability assessment is a matter for the decision maker, having regard to all the circumstances in the case, including whether the plan and the viability evidence underpinning it is up to date, and any change in site circumstances since the plan was brought into force...”

4.1.1.8 On delivering and maintaining a sufficient supply of new homes, Paragraph 60 sets out;

“To support the Government’s objective of significantly boosting the supply of homes, it is important that a sufficient amount and variety of 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...”

4.1.1.9 Paragraph 74 continues;

“The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities (including a genuine choice of transport modes). Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities should identify suitable locations for such development where this can help to meet identified needs in a sustainable way..”

4.1.1.10 With regard to Making Effective Use of Land, Paragraphs 123 and 124 states;

“123. Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or ‘brownfield’ land.

124. Planning policies and decisions should:

- a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside;*
- b) recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;*
- c) give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land;*
- d) promote and support the development of underutilised land and buildings, especially if this would help to meet identified needs for housing where land supply is constrained and available sites could be used more effectively (for example converting space above shops, and building on or above service yards, car parks, lockups and railway infrastructure); and*
- e) support opportunities to use the airspace above existing residential and commercial premises for new homes. In particular, they should allow upward extensions where the development would be consistent with the prevailing height and form of neighbouring properties and the overall street scene, is well-designed (including complying with any local design policies and standards), and can maintain safe access and egress for occupiers”.*

- 4.1.1.11 With respect to design of any proposals, the NPPF provides guidance in its chapter 'Achieving Well-Designed Places' in which Paragraph 131 sets out that;

"The creation of high quality, beautiful and sustainable buildings and places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities..."

- 4.1.1.12 Paragraphs 135, 136, 137 and 139 provide additional advice;

"135. Planning policies and decisions should ensure that developments;

- a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;*
- b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;*
- c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);*
- d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;*
- e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and*
- f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users, and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.*

136. Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that... opportunities are taken to incorporate trees elsewhere in developments, that appropriate measures are in place to secure the long-term maintenance of newly planted trees, and that existing trees are retained wherever possible...

137. Design quality should be considered throughout the evolution and assessment of individual proposals. Early discussion between applicants, the local planning authority and local community about the design and style of emerging schemes is important for clarifying expectations and reconciling local and commercial interests. Applicants should work closely with those affected by their proposals to evolve designs that take account of the views of the community. Applications that can demonstrate early,

proactive and effective engagement with the community should be looked on more favourably than those that cannot.

139. Development that is not well designed should be refused, especially where it fails to reflect local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents such as design guides and codes. Conversely, significant weight should be given to:

- a) development which reflects local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents such as design guides and codes; and/or*
- b) outstanding or innovative designs which promote high levels of sustainability, or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings.”*

4.1.2 National Design Guide

- 4.1.2.1 Additional guidance by national government is provided within the National Design Guide published in October 2019 and is a significant material consideration in any forthcoming determination of planning application. Paragraph 3 of the guide highlights;

“The National Planning Policy Framework makes clear that creating high quality buildings and places is fundamental to what the planning and development process should achieve. The National Design Guide illustrates how well-designed places are beautiful, enduring and successful can be achieved in practice. It forms part of the Government’s collection of planning practice guidance and should be read alongside the separate planning proactive guidance on design process and tools.”

- 4.1.2.2 The National Design Guide sets out ten different characteristics that developments should achieve to create the physical character, whilst nurturing and sustaining a sense of community and working positively to address environmental issues that are impacting the climate as specified in Paragraph 35. These characteristics include the following:

Context is the location of the development and the attributes of its immediate, local and regional surroundings. Paragraph 39 emphasises that well designed places are based on sound understanding of the features of the site and the surrounding context; integrated into their surroundings so they relate well to them; influenced by and influence their context positively; and respond to local history, culture and heritage.

Identity or character of a place comes from the way that buildings, streets and spaces, landscape and infrastructure combine together and how people experience them. Paragraph 50 states that well-

designed places, buildings and spaces have a positive and coherent identity that everyone can relate with; have character that suits the context, its history, how we live today and in the future; and are visually attractive in order to delight their occupants and users.

Built Form is the three-dimensional pattern or arrangement of development blocks, streets, buildings, or open spaces. Paragraph 62 advises that a well-designed built form can be achieved through compact forms of development that are walkable and contribute positively to well-being and placemaking; ensure sustainable development through the promotion of accessible local public transport, services and facilities; contain recognisable streets and other spaces with their edges defined by buildings, making it easy for anyone to find their way around and promoting safety and accessibility; and contain memorable features or groupings of buildings, spaces, use or activities that create a sense of place and promote inclusion and cohesion.

Movement patterns for people are integral to well-designed places. Paragraph 76 specifies that a well-designed movement network defines a clear pattern of streets that: are safe and accessible for all; function efficiently to get everyone around, taking into account the diverse needs of all potential users with a genuine choice of sustainable transport modes; limits the impacts of car use by prioritising and encouraging walking, cycling and public transport whilst identifying opportunities to improve air quality; promotes activity and social interaction; and incorporates green infrastructure.

Nature contributes to the quality of place, and to people's quality of life, and it is a critical component of well-designed places. Paragraph 91 requires well-designed places to integrate existing and incorporate new natural features that supports quality of place, biodiversity and water management whilst addressing climate change mitigation and resilience; prioritise nature so diverse ecosystems can flourish; and provide attractive open spaces in locations that are easy to access with activities for all to enjoy.

Public Spaces are streets, squares and other spaces that are open to all. Paragraph 100 emphasises that well-designed places include well-located public spaces that support a wide variety of activities that encourage social interaction; have a hierarchy of spaces that range from large and strategic to small and local spaces; that feel safe, secure and attractive for all to use; and have trees and other planting for people to enjoy whilst providing shading and air quality / climate change mitigation.

Uses mixed together encourage sustainable places that support everyday activities including to live, work and play. Paragraph 111 highlight well-designed places as having: a mix of uses including local services and facilities to support daily life; an integrated mix of housing tenures and types to suit people at all stages of life; and well-integrated housing and facilities that are designed to be tenure neutral and socially inclusive.

Lifespan of developments that help sustain their beauty over time and add to the quality of life of their users and as a result people are more likely to care for them over their lifespan. Paragraph 151 encourages places, buildings and spaces that are: designed and planned for long-term stewardship by landowners, communities and local authorities from the earliest stages; robust, easy to use and look after enabling users to establish a sense of ownership and belonging whilst aging gracefully; adaptable to users changing need; and are well-managed and maintained by their users, owners, landlords and public agencies.

A well-designed place

- Climate**
 - Energy efficiency
 - Green and cool roofs
 - Low-carbon energy production
 - Water
- Global Access**
 - International connectivity
 - Global connectivity
 - Transportation and logistics
- Urban Design**
 - Urban form and structure
 - Urban infrastructure
 - Urban services
 - Urban quality
 - Urban safety
 - Urban health
 - Urban mobility
- Urban Form**
 - Urban form and structure
 - Urban infrastructure
 - Urban services
 - Urban quality
 - Urban safety
 - Urban health
 - Urban mobility
- Urban Infrastructure**
 - Urban form and structure
 - Urban infrastructure
 - Urban services
 - Urban quality
 - Urban safety
 - Urban health
 - Urban mobility
- Urban Services**
 - Urban form and structure
 - Urban infrastructure
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 - Urban mobility
- Urban Quality**
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 - Urban mobility
- Urban Health**
 - Urban form and structure
 - Urban infrastructure
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 - Urban quality
 - Urban safety
 - Urban health
 - Urban mobility
- Urban Mobility**
 - Urban form and structure
 - Urban infrastructure
 - Urban services
 - Urban quality
 - Urban safety
 - Urban health
 - Urban mobility

4.2.1 Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires all planning applications to be determined in accordance with the relevant Development Plan unless material considerations indicate otherwise. The Development Plan for Arun District comprises various the following:

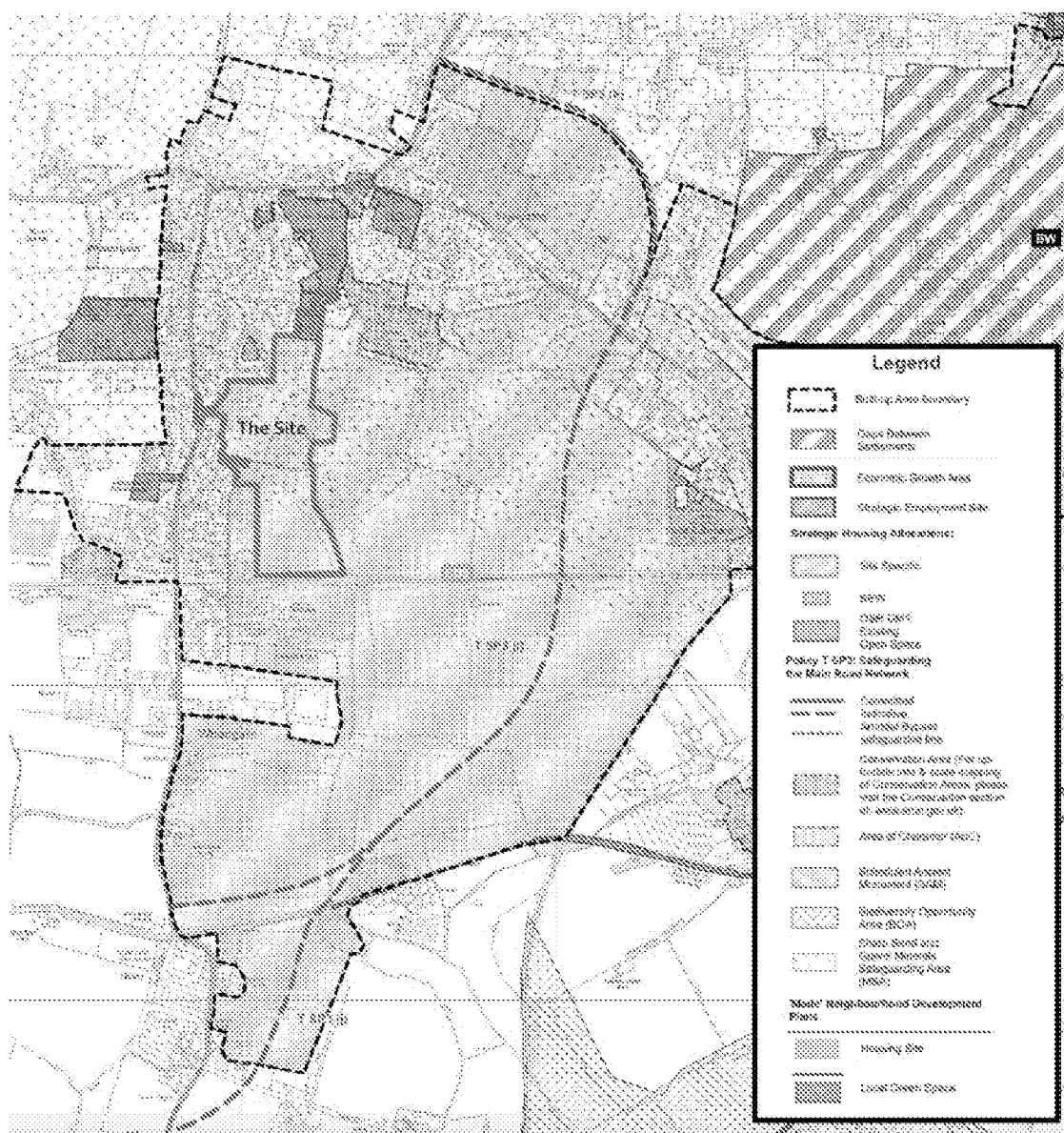
4.2.2 Adopted Arun Local Plan 2011-2031 (2018)

4.2.2.1 The Adopted Arun Local Plan (ALP) (2018) sets out the vision, and guides development that will achieve that vision, for Arun District in the period 2018-2031. In order to meet these objectives, the ALP includes the following relevant policies for the application site;

4.2.2.2 Policy H SP2c - Inland Arun: Barnham/Eastergate/Westergate (SD5) (Figure 4.2): The Strategic Allocation will provide at least 2,300 dwellings over the plan period, and up to 3,000 in total. Development proposals must demonstrate compliance with the following key design and infrastructure requirements:

- a. Preserve the separate BEW identities and further physical coalescence
- b. Design and landscaping shall ensure that there is continuity between the existing landscape setting and villages
- c. Design and layout of the development shall take account of the railway line crossing the site
- d. Housing shall be designed around a Linear Park which follows along the Lidsey Rife
- e. A comprehensive strategy for surface water management
- f. Significant views to and from the South Downs shall be incorporated within the site
- g. Provide a Community Hub with local centre; new retail, commercial and community facilities; new tier 7 Library; and healthcare facilities to serve BEW
- h. Transport requirements including a new A29 route; an east-west route north of the railway line to join the existing and new A29; access to Barnham Railway Station; regular bus services linking BEW with Bognor Regis; and, Westergate Link cycle scheme.
- i. Provide a new two-from entry primary school, a new one-from entry primary school and nursery places
- j. Incorporate two new sports pitches and changing facilities, and
- k. Incorporate planned new employment provision.

Figure 4.2: ADC Proposals Map - SDS Allocation



- 4.2.2.3 Policy SD SP1 - Sustainable Approach: Indicates a positive approach by the Council in favour of sustainable development, as required by the NPPF, to secure development that will contribute to the social, economic and environmental conditions of the district.
- 4.2.2.4 Policy SD SP1a - Strategic Approach: Highlights the aspirations to maintain the District's unique character as a coastal location set against the South Downs whilst ensuring that the needs of the community are met through sustainable growth and the provision of suitable services including through providing for growth of the sustainable villages whilst maintaining their setting within the open countryside; providing for the housing needs of the community by delivering 20,000 homes; and support development which protects, conserves and enhances the built environment.

- 4.2.2.5 Policy SD SP2 - Built-Up Area Boundary: States that development should be focused within Built-Up Area Boundaries (BUAB), and these will be supported subject to consideration of other policies.
- 4.2.2.6 Policy GI SP1 - Green Infrastructure and Development: Requires all major development proposals to protect and enhances the existing Green Infrastructure assets and the connections between them, to provide a joined up Green Infrastructure Network. which should be protected from light pollution.
- 4.2.2.7 Policy LAN DM1 - Protection of Landscape Character: Requires development to respect the landscape, with special regard to the South Downs National Park, and the historic character and development pattern of settlements of the locality.
- 4.2.2.8 Policy H SP1 - The Housing Requirement: States that within the plan period 2011 – 2031 at least 20,000 new homes will be accommodated within Arun District, including 1,120 dwellings per annum in 2020/21 and 1,310 dwellings per annum in 2021/22 – 2025/26. In Yapton, 500 units are allocated in strategic housing sites whilst additional non-strategic allocations will be made in the Neighbourhood Plan.
- 4.2.2.9 Policy H DM1 - Housing Mix: Specifies that a mix of dwelling types and sizes are required. Developments of 11 units or more should include a balanced mix of market and affordable dwelling sizes including family sized accommodation based on the most up to date SHMA recommendations. Tenure mix shall be negotiated on a case by case basis having regard to the SHMA. The housing provided should take account of the needs of older people.
- 4.2.2.10 Policy D SP1 - Design: Seeks the efficient use of land that reflects the characteristics of the site and local area in their layout, landscaping, density, mix, scale, massing, character, materials, finish and architectural detailing which should be derived from a thorough site analysis and context appraisal.
- 4.2.2.11 Policy D DM1 - Aspects of Form and Design Quality: Requires development proposals to be assessed regarding character, appearance/attractiveness, impact on neighbours' amenity, innovation, adaptability, crime prevention, trees/woodland, solar gain, public realm, layout in terms of movement and legibility, public art, density and scale. Development should also comply with the Arun Design Guide.
- 4.2.2.12 Policy AH SP2 - Affordable Housing: For developments of 11 units or more a minimum of 30% affordable housing will be required, with an affordable mix of 75% rent and 25% intermediate housing. Affordable housing should be visually indistinguishable from market housing with large groups of single tenure dwellings or property types avoided. Affordable housing mix should comprise the following (see Table 4.1);

Table 4.1: Affordable Housing Mix

1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
35-40%	35-40%	15-20%	5-10%

- 4.2.2.13 The Policy allows for a reduction in affordable housing provision where it can be proven that 30% affordable housing is not viable. The provision of a reduced level of affordable housing will only normally be allowed in very exceptional circumstances if supported by robust evidence including, where appropriate, viability evidence.
- 4.2.2.14 Policy D DM2 - Internal Space Standards: Requires the provision of internal spaces of an appropriate size to meet the requirements of all occupants and their changing needs.
- 4.2.2.15 Policy ECC SP1 - Adapting to Climate Change: Development will be supported which is located and designed to adapt to climate change impacts, notably flooding, water stress, health impacts from extreme temperatures and richness of biodiversity, taking account of location, water efficiency, shade/ solar gain, green infrastructure connectivity, layout and massing, building resilience to extreme weather events and capacity of drainage systems.
- 4.2.2.16 Policy ECC SP2 - Energy and Climate Change Mitigation: New residential development will be expected to be energy efficient, reflecting current standards. Design and layout should promote energy efficiency and incorporate decentralised, renewable and low carbon energy systems, such as solar panels. All major developments must produce 10% of total predicted energy requirements from renewable or low carbon sources, unless demonstrated to be unviable.
- 4.2.2.17 Policy HWB SP1 - Health and Wellbeing: All development should be designed to maximise the impact it can make to promoting healthy communities and reducing health inequalities. In particular regard shall be had to providing or contributing to the necessary infrastructure to encourage physical exercise and health, including accessible open space, sports and recreation facilities and safe, well promoted, walking and cycling routes.
- 4.2.2.18 Policy OSR DM1 - Open Space, Sport and Recreation: Housing development will be required to contribute towards open space provision in accordance with guidance set out in the current Open Space Study. Developments should have regard to Secure by Design guidance.
- 4.2.2.19 Policy T SP1 - Transport and Development: States that all new development should provide safe access on to the highway network, reduces congestion, works to tackle climate change and promote healthy lifestyles, contributes to highway improvements and promotes sustainable transport, including the use of low emission fuels, public transport improvements and the cycle, pedestrian and bridleway network.

- 4.2.2.20 Policy T DM1 - Sustainable Travel and Public Rights of Way: New development must ensure ease of movement, prioritising safe pedestrian and cycle access to the green infrastructure network and access to public transport and community transport services where a need has been identified. Access to alternative modes of transport including public transport services, the public right of way and cycle networks must be available and accessible to all members of the community. Proposals must be within easy access of established public transport services and sustainable transport infrastructure, make provision for cycling and pedestrian facilities to meet County Council Parking Standards and contribute towards the provision of a joined up cycle network and PROW network.
- 4.2.2.21 Policy HER SP1 - The Historic Environment: Supports proposals that conserve or enhance the historic environment of the District including designated heritage assets including listed buildings, structures, conservation areas and their settings as well as non- designated heritage assets.
- 4.2.2.22 Policy HER DM1 - Listed Buildings: Proposals affecting Listed Buildings will be required to protect, and where possible enhance the setting of the building.
- 4.2.2.23 Policy ENV SP1 - Natural Environment: States that the preservation, restoration and enhancement of biodiversity and the natural environment through the development process will be encouraged, and where possible the creation of new habitats and areas for species will be supported.
- 4.2.2.24 Policy ENV DM4 - Protection of Trees: Ensures that tree that are subject to Tree Preservation Orders, located within a Conservation Area or contribute to local amenity are protected.
- 4.2.2.25 Policy ENV DM5 - Development and Biodiversity: Seeks to achieve a net gain in biodiversity and protect existing habitats on site, through incorporating elements of biodiversity and establishing links between habitat areas and open spaces.
- 4.2.2.26 Policy W SP1 - Water: States that water efficiency measures will be encouraged in order to protect water resources and enhance the quality of the water environment. Developments will be encouraged to make active use of surface water as a design feature.
- 4.2.2.27 Policy W DM1 - Water Supply and Quality: Requires sufficient water supplies to be available prior to occupation of a development and that adequate foul drainage capacity exists or can be provided to meet the needs of a development.
- 4.2.2.28 Policy W DM3 - Sustainable Urban Drainage Systems: Requires development to incorporate SUDS drainage, appropriate to the size of development. Potential source control features include; green roofs; permeable driveways and parking; soakaways; water harvesting and storage.

- 4.2.2.29 Policy WM DM1 - Waste Management: Development proposals over £300,000 in cost must identify the volume and type of materials to be excavated and maximise opportunities to re-use material on site. New residential development must ensure that kerbside waste collection is possible.
- 4.2.2.30 Policy QE SP1 - Quality of the Environment: All development should contribute positively to the quality of the environment and not have a significant negative impact on residential amenity.
- 4.2.2.31 Policy QE DM2 - Light Pollution: Outdoor lighting must not adversely impact neighbouring uses or the wider landscape, particularly the South Downs Dark Sky Reserve.
- 4.2.2.32 Policy QE DM3 - Air Pollution: Major development proposals must mitigate negative impacts on air quality by maximising provision of cycling and pedestrian facilities.
- 4.2.2.33 Policy INF SP1 - Infrastructure provision and implementation: States that the LPA will support applications that provide or contribute towards infrastructure provision, including those set out in the Infrastructure Delivery Plan.
- 4.2.3 West Sussex Joint Minerals Plan 2018 & West Sussex Waste Local Plan 2014**
- 4.2.3.1 The plan comprises of County wide planning policies for minerals and waste designated areas for safeguarding and protection of minerals to ensure adequate ongoing access to resources.
- 4.2.3.2 The site is located within a Sharp Sand and Gravel (inc. 250m buffer) safeguarding area
- 4.2.3.3 Policy M9 - Safeguarding Minerals: Sharp sand and gravel is safeguarded against sterilisation and proposals will not be permitted unless: mineral sterilisation will not occur; or, it is appropriate and practicable to extract the mineral prior to development; or, the overriding need for the development outweighs the safeguarding of the mineral and it has been demonstrated that prior extraction is practicable or environmentally feasible
- 4.2.3.4 The site is also located in the Area of Search for waste management facilities (Policy W3) however, this does not significantly constrain the site and due to its urban location, is unlikely to be developed into a waste management facility.
- 4.2.4 Made Aldingbourne neighbourhood Plan**
- 4.2.4.1 The site sits within the Aldingbourne Parish, which benefits from a Neighbourhood Plan. The Aldingbourne Neighbourhood Plan was 'Made' in November 2016, with a revised version adopted in July 2021, and as such the plan is a material consideration in planning decisions within the Parish. Relevant policies to this application include:

- 4.2.4.2 Policy H1 - Quality of Design: Proposals for new housing or extending or altering existing dwellings should be of a high • quality design that reflects the local character and reinforces local distinctiveness. Proposals must demonstrate how they meet the policies set out in the Plan.
- 4.2.4.3 Policy H2 - Housing Mix: Proposals for new housing must deliver a range of house types, sizes and tenures and demonstrate they will meet local needs. 25% of homes shall meet (the now defunct) Lifetime Homes standard, or equivalent.
- 4.2.4.4 Policy H3 - Housing Density: The density of new development shall be appropriate to its location by virtue of size, siting and relationship to existing properties.
- 4.2.4.5 Policy H4 - Affordable Housing: Any proposal for 10 or more new dwellings should include 40% affordable units, unless this can be demonstrated to make the scheme unviable. The size and tenure of affordable units should reflect latest available housing needs evidence.
- 4.2.4.6 Policy H8 - Outdoor Space: All new dwellings must include an outdoor amenity space of adequate size and quality, either as a private garden or shared amenity area.
- 4.2.4.7 Policy H9 - Attention to Detail: The following must be considered early in the design process and be integrated into the scheme; bin stores and recycling facilities; cycle stores; meter boxes; lighting; flues and ventilation; gutters and pipes; and other features.
- 4.2.4.8 Policy EH2 - Green Infrastructure: New development within, or immediately adjacent to the Biodiversity Corridors identified on Maps A1 and A2 will only be supported where it can be clearly demonstrated that development proposals will not give rise to any significant harm to the integrity or function of the Biodiversity Corridors.
- 4.2.4.9 Policy EH6 - Protection of Trees and Hedgerows: Development that damages or results in the loss of trees of arboricultural and amenity value or loss of hedgerows and/or priority habitat, or which significantly damages ecological networks will be resisted, unless need and benefits clearly outweigh the loss. Development proposals, where appropriate, must be designed to incorporate biodiversity and enhance ecological networks, seeking to retain wherever possible ancient trees, trees of good arboricultural and amenity value and hedgerows to contribute to the Government's target to halt the decline in biodiversity by aiming for a net gain for nature. Proposals which affect sites with existing trees or hedgerows should be accompanied by a survey that establishes the health and longevity of any affected trees or hedgerows and a management plan to demonstrate how they will be so maintained.
- 4.2.4.10 Policy GA1 - Promoting Sustainable Movement: Development proposals that increase travel demand will be supported where they can demonstrate that: they extend or improve walking and cycling routes by making

land available for those purposes or by means of financial contributions through legal agreements or (when adopted for the District) the Community Infrastructure Levy; they are located in places accessible to public and community transport or can improve the accessibility of the site to public and community transport by contributing to the provision of enhanced services; they do not result in the loss of any existing footpaths or cycle paths.

- 4.2.4.11 Policy GA3 - Parking and New Development: Proposals must provide adequate parking in accordance with the standards adopted at the time. Proposals that would result in a loss of parking spaces either on or off street will be resisted.
- 4.2.4.12 Policy H4 - Affordable Housing: Any proposal for 10 or more new dwellings should include 30% affordable units; size and tenure should reflect latest evidence.

5. Transportation

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B

B

5 Transportation

5.1 Introduction

- 5.1.1 This chapter of the ES was prepared by WSP, who are competent and experienced in undertaking ES chapters relating to Transport, Accessibility and Movement. Given the scale of the proposals, it is considered that the proposed Development could affect the existing transport networks and their users and was 'scoped in' to the EIA in the Scoping Opinion adopted by Arun District Council.

5.2 Background

- 5.2.1 This transport chapter has been prepared and will outline the potential impacts of the proposed development on the local highway and transport network and the changes to travel demand during construction and once the development is occupied.

5.2.2 The Site

- 5.2.2.1 The development is located to the southern part of Westergate, West Sussex, it is east of Chichester, north of Bognor Regis and west of Littlehampton. It is located within close proximity of the neighbouring villages of Woodgate, Eastergate and Barnham.

- 5.2.2.2 The site is currently primarily agricultural land and is bounded by A29 Westergate Street, residential housing to the north and agricultural land to the east. The site location is near the junction of A29 Westergate Street and Meadow Way. The site is east of the A29 Westergate Street and adjacent to Pine Close and Meadow Way, both priority-controlled T-junctions with the A29.

- 5.2.2.3 The A29 is a classified A road which provides a link from Billingshurst to Bognor Regis. The A29 has a 30mph speed limit and street lighting. Pine Close and Meadow Way are local cul-de-sacs, providing access to approximately 18 and 79 dwellings, respectively. To the south of the site, A29 Westergate Street has a signal controlled level crossing for the West Costal railway line with services running between Barnham and Chichester stations.

5.2.3 The Scheme

- 5.2.3.1 The proposed development comprises a hybrid application with full permission for western section of East/West Link Road and new access off Westergate Street, road bridge over the Lidsey Rife and associated works and outline permission with all matters reserved (except access) for up to 400 dwellings with associated works. An assessment of the proposed development on the highway network has been undertaken as part of the Transport Assessment, included at Appendix 5.1. This presented the junctions where capacity would likely be reached or exceeded as a result of the development, allowing for mitigation measures to be proposed.

- 5.2.3.2 The creation of the East-West link road as part of the BEW strategic site will provide a direct link for pedestrians and cyclists to Barnham Station, proposed local centres within the site and Barnham village centre. To support such cycling trips, the proposed East-West Link Road includes at LTN1/20 compliant bidirectional cycle route adjacent to the southern side of the carriageway.

5.2.4 Site Access Design

- 5.2.4.1 The proposed site access will be achieved via a four-arm signalised junction with Meadow Way and A29 Westergate Street. The proposed access junction provides a new connection onto A29 Westergate Street at Pine Close, with the existing junction remaining open only for pedestrian and cycle access only. The proposed access junction is the same layout which supported the 2017 planning application, which has been subject to an independent Stage 1 Road Safety Audit and Designers Response. Given the proposed layout, the access junction was also subject to a Design Statement and Departures from Standards application. The details of this are outlined in the TA.
- 5.2.4.2 The proposed site access junction provides the western section of the proposed East-West Link Road.

5.2.5 Potential Cumulative Effects

Barnham / Eastergate / Westergate Strategic Development Site

- 5.2.5.1 As set out in Chapter 4, Arun District Council has identified land between Barnham / Eastergate / Westergate for development as part of the Local Plan (BEW Parcel SC1).
- 5.2.5.2 Proposals for the BEW strategic development includes the realignment of the A29 through the BEW Parcel SC1 to bypass the existing railway level crossing at Woodgate and provide a grade separated bridge to eliminate vehicle queues associated with the level crossing. The realignment of the A29 will run from the existing A29 via a roundabout at Eastergate Gate lane and will connect back into the existing A29 alignment just to the north of the A259. The realigned A29 will connect with the Proposed Development and existing A29 alignment, via an East-West Link Road.
- 5.2.5.3 As part of the BEW strategic development site an East – West Link Road is proposed between the site and the BEW Parcel SC1. A connection between the two sites will be facilitated by a bridge over the Lindsey Rife constructed as part of the Proposed Development.. It has agreed with WSCC during pre-application discussions that the East-West Link Road bridge will operate as a bus, pedestrian and cycle only route until the full A29 realignment is complete, mitigating concerns related to the impact of traffic associated with Parcel SC1 on the operation of the site access junction prior to the full A29 realignment being completed.
- 5.2.5.4 Other local developments are planned to be constructed within close proximity to the site and these will be included within all cumulative assessments through the use of the Chichester Area Traffic Model (CATM).

These smaller sites include Barratts, Landacre, Boweries, and Pye Homes sites, plus wider BEW site to the east of the proposed development.

5.3 Chapter Structure

5.3.1 This Transport, Accessibility and Movement Chapter sets out the technical details of the transport assessment and assesses the likely significant environmental effects that could arise from the Proposed Development during the construction and operational phases and provides descriptions and details of:

- relevant legislation and transport policy context;
- the methods used for the assessment and details of the criteria used to determine the resulting significance;
- the baseline transport conditions in the local area surrounding the Assessment Site;
- the potential impacts and effects as a result of the Proposed Development;
- any mitigation or control measures required to reduce or eliminate adverse effects; and
- the subsequent residual effects and likely significant effects associated with the Proposed Development.

5.3.2 This Chapter (and its associated figures and appendices) is not Intended to be read as a standalone assessment but with reference to the front end of this ES (Chapters 1-4). It should also be read in conjunction with other documents, supporting the application, which include the Transport Assessment (TA) and a Framework Travel Plan (FTP) provided in Appendix 5.1 and Appendix 5.2, respectively.

5.4 Transport Policy Context

5.4.1 The assessment of the transport effects of the Proposed Development in this Chapter is based on policy and current best practices exemplified in several policy documents at the national and local levels.

5.4.2 A review of the relevant law and policies that inform the EIA process is provided in Chapter 3 of the ES, with a comprehensive review of transport policy relevant to the Proposed Development provided in the TA. However, this chapter also provides a review of legislation and policies relevant only to the assessment of the potential effects on the environment generated by the transport aspects of the proposals. A review of policies that inform the assessment of other aspects of the environment is provided in their relevant chapters forming part of the ES.

5.4.3 An overview of the legislation and policies directly relevant to transport, accessibility and movement is provided below.

5.4.4 National Planning Policy Framework, DCLG, March 2012 (Updated December 2023)

- 5.4.4.1 Published on 27th March 2012 (updated December 2023), the National Planning Policy Framework (NPPF) seeks to reduce the complexity and improve the accessibility of the planning system, whilst protecting the environment and encouraging growth in a sustainable manner.
- 5.4.4.2 The NPPF sets out a presumption in favour of sustainable development which should be delivered with three main dimensions: economic; social and environmental, (Paragraphs 8 and 11).
- 5.4.4.3 The NPPF sets aims to offer genuine choice of transport modes and should be focused on areas which are or can be made sustainable. This also encourages solutions which support reductions in greenhouse gas emissions and reduce congestion, improving air quality and public health (Paragraph 109).
- 5.4.4.4 The Transport Assessment produced alongside this ES will also demonstrate how the proposed development fulfils the criteria set out in Paragraph 114 of NPPF, to account for:
- The opportunities for sustainable transport modes to be used;
 - Provision of safe and suitable access to the site for all users;
 - Design of different elements of the transport network should reflect current national guidance, such as the National Design Guide; and
 - Cost-effective improvements which can be undertaken within the transport network to cost-effectively limit any significant impacts arising from the development.

5.4.5 DFT Circular 02/2013, The Strategic Road Network and The Delivery of Sustainable Development (Updated December 2022)

- 5.4.5.1 The above document provides details of how Highways England will engage with communities and the development industry to deliver sustainable development and, thus, economic growth, whilst safeguarding the primary function and purpose of the strategic road network.
- 5.4.5.2 The document reflects the Policy stance of the NPPF of a presumption in favour of development where at paragraph 12 it states:

"New development should be facilitating a reduction in the need to travel by private car and focused on locations that are or can be made sustainable... Developments in the right places and served by the right sustainable infrastructure delivered alongside or ahead of occupancy must be a key consideration when planning for growth in all local authority areas".

5.4.6 West Sussex Transport Plan 2022 to 2036

5.4.6.1 The West Sussex County Council Local Transport Plan was formally adopted in May 2023. The WSTP sets out how the County Council, working with its strategic partners particularly in relation to funding, intends to address key challenges by improving, maintaining and managing the transport network in the period to 2036.

5.4.6.2 A number of key issues have been identified that the Plan seeks to address:

- Climate change;
- Local environmental impacts;
- Spatially variable economic performance;
- Development and regeneration pressures and opportunities;
- Growing and ageing population;
- Public health and well-being;
- Access to services; and
- Transport network performance issues.

5.4.6.3 Paragraph 7.22 to 7.43 outlines the area transport strategy for Arun District. Issues raised in the area are listed below:

- Congestion on the A27 at Arundel and Fontwell during peak hours;
- Congestion on the A29 and A259;
- Poor connectivity between Littlehampton and Bognor Regis and the A27;
- Level crossings at Wick, Woodgate and Ford which create congestion and poor air quality;
- Rat running on less suitable routes causing concerns over safety;
- Bus journey times are slow at peak times due to congestion on routes such as the A259;
- Rail services to London, Brighton and the Solent cities can be slow, and some trains lack modern facilities;
- No direct rail services between Bognor Regis and Chichester, or the Arun Valley and parts of the West Coastway route;
- The current cycle network does not meet user needs and it is limited in extent and disjointed between Bognor Regis, Littlehampton, Arundel and adjoining areas such as Chichester and Worthing where there are gaps in NCN2; and
- The A27 and railway lines cause community severance, particularly for active travel modes.

5.4.7 Arun Local Plan 2011 – 2031 July 2018 Publication Version

5.4.7.1 Arun District Council has submitted the Arun District Local Plan 2011-2031 for independent examination to the Secretary of State for Communities and Local Government in July 2018.

- 5.4.7.2 Section 15 states Arun's Local Plan strategic objectives for transport including reducing the need to travel and promote sustainable forms of transport, and contains the policies established to achieve these goals.
- 5.4.7.3 Policy H SP2c Barnham / Eastergate / Westergate has been established to ensure certain specifics are addressed in any planning proposal. The development must provide at least 2,300 dwellings, provide a new community hub, highly quality imaginative design layout for pedestrians, cyclists, equestrians and vehicles, access to local community, recreational and shopping facilities, jobs and accessible transport. A number of transport measures will be delivered as part of the allocation these include:
- Efficient and well-connected permeable road and Public Right of Way layouts that provides a choice of safe and convenient routes for car users and non-motorised mode users.
 - Provision of a new A29 route through the Barnham/ Eastergate/ Westergate site allocation, which includes a bridge over the railway to the east of the current Woodgate crossing.
 - Development proposals must facilitate the needs of pedestrians, cyclists and vehicles users in the overall design concept.
 - Provision of an east-west route that will join the existing A29 route to the new A29 route and continue eastwards to Barnham Railway Station. This route will provide access to Barnham village centre and railway station for pedestrians and cyclists.
 - Mitigation measures for the western Fontwell roundabout, to address the impact of traffic arising from the overall development of Barnham/ Eastergate/ Westergate.
- 5.4.7.4 Policy T SP1 Transport and Development is established to ensure a reduction in congestion, provide safe access to the highway network and promote sustainable transport. This policy indicates that the Council will support development that reduces the need to travel by car, incorporates into the District's green infrastructure, contributes towards new road schemes and provides appropriate levels of car parking.
- 5.4.7.5 Policy T DM1 Sustainable Travel and Public Rights of Way is established to ensure developments have access to sustainable modes of transport. This policy indicates that development must be located within easy access of established public transport services, pedestrian and cycleway networks, make provision for cycling and pedestrian facilities, and contribute towards the provision of a joined-up cycle network and Public Rights of Way network.
- 5.4.7.6 Policy T SP3 Safeguarding the Main Road Network is established to ensure identified improvements to the strategic road network within the district can be carried out. Of specific reference is the safeguarding of the A29 realignment and access route through the Barnham / Eastergate / Westergate site allocation.

5.5 Transport Assessment Methodology

5.5.1 Assessment Methodology

5.5.1.1 The approach to the assessment and, subsequently, the methodology employed in this Transport, Accessibility and Movement chapter will be based on the relevant guidance contained in IEMA Guidelines for the Environmental Assessment of Road Traffic (hereafter referred to as 'IEMA Guidelines').

5.5.1.2 IEMA Guidelines published in July 2023 provide advice specifically aimed at the environmental effects of changes in transport and traffic as a result of a development. It defines the effects that should be regarded as a material consideration and then considers the weight to which those effects should be defined. The guidelines set out, inter alia, a list of environmental effects which could be considered potentially material or significant whenever a new development is likely to give rise to changes in traffic flows. These effects include:

- Severance;
- Driver delay;
- Pedestrian delay;
- Non-motorised user amenity;
- Fear and intimidation; and
- Road safety;

5.5.1.3 The IEMA Guidelines also suggest considering dangerous or hazardous loads. However, the Proposed Development is not expected to generate any such vehicle movements and therefore, it is deemed appropriate to exclude dangerous or hazardous loads from the assessment.

5.5.1.4 Also excluded from the assessment are the effects of dust and dirt, as these are unlikely to occur at distances greater than 50m from a construction site access and depend predominantly on the management practices during construction. Practices to minimise these effects will be considered in detail in the CLP, also accompanying the application.

5.5.1.5 In addition to the above, the IEMA Guidelines discuss the assessment of noise and vibration, visual effects, air pollution, ecology and heritage. Although these effects may be related to transport, they are considered in their respective chapters of the ES.

5.5.1.6 As suggested by the IEMA Guidelines (section Geographical Boundaries of Assessment, para 2.16), '...a screening process to delimit the scale and extent of the assessment' was undertaken.

5.5.1.7 An analysis of the model data was carried out to identify the relevant highway links to be included in the assessment. The IEMA Guidelines (section Geographical Boundaries of Assessment, para 2.16) suggest the application of the following rules to identify the highway links that would form part of the assessment:

- 5.5.1.8 The IEMA Guidelines (section Rule 1, para 2.17 to 2.20 and section Rule 2, para 2.21) provide the rationale behind the thresholds specified above. However, it should be emphasised that these are relevant only to the assessment of environmental impacts as higher accuracies (i.e., changes <10%) are within daily variations of traffic on the road and create indiscernible environmental impact.
- 5.5.1.9 It should also be highlighted that non-highway links are considered in other documents accompanying the application, such as the TA and PTS.
- 5.5.1.10 Finally, it is essential to note that the TA and other associated documents consider the modelled highway links differently, and any assessment contained within them is not based upon the thresholds identified above (these are only applicable to the assessment in the ES chapter). The TA is mainly concerned about the capacity of links and junctions and the capacity impacts resulting from the changes in traffic volumes. The capacity assessments follow different industry-standard methodologies with their thresholds not directly comparable to those required for the EIA. As such, these assessments consider impacts on several links and junctions that may not be part of the assessment in the Transport, Accessibility and Movement chapter of the ES.
- 5.5.1.11 The methodology used in this chapter to assess each of the parameters (severance, pedestrian and cyclist delay, pedestrian and cyclist amenity and fear and intimidation) is set out below.

5.5.2 Severance

- 5.5.2.1 Severance is the perceived division that can occur within a residential area if it becomes separated by a major traffic artery and is used to describe the factors that separate people from other people and places. For example, severance may be created as a result of an increase in traffic that could affect the difficulty of crossing a road. The effects of severance can be applied to motorists, pedestrians or residents.
- 5.5.2.2 The IEMA Guidance notes that the Department for Transport (DfT) has historically set out a range of indicators for determining the significance of the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing "minor", "moderate" and "major" changes in severance respectively. Whilst these thresholds no longer appear in any DfT guidance it is also noted that they have not been superseded through new guidance. These thresholds can be used as a starting point for assessment, noting that full regard should also consider road width, traffic flow, traffic speeds, availability of crossing facilities and the number sensitivity of users that are likely to cross the affected route.

5.5.3 Traffic Delay

- 5.5.3.1 Traffic delays to non-development traffic can occur at several locations within the local highway network as a result of the additional traffic that would be generated by a development. The IEMA Guidance states that

delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the junction. The theoretical capacity of a particular junction can be determined by assessing the Ratio of Flow Capacity (RFC) for priority-controlled junctions and Degree of Saturation for signal-controlled junctions. When an RFC value of 0.85 or more is experienced, or a degree of saturation of 90%, queuing and congestion are likely to occur during peak travel periods.

- 5.5.3.2 The impact of the proposed development on traffic delay should usually be based on junction capacity assessments completed within the TA, taking account of a range of factors. These include consideration of the baseline traffic conditions, the location and operation of the junction assessed and the increase in delay resulting from the proposed development.

5.5.4 Pedestrian Delay

- 5.5.4.1 Changes in volume, composition or speed of traffic may affect the ability of people to cross roads, with increases in traffic levels likely to lead to a greater increase in delay. Delays are also dependent upon the level of pedestrian activity, visibility and general physical condition of the site. Given the range of local factors and conditions which can influence pedestrian delay, the IEMA Guidance does not recommend that thresholds be used as a means to establish the significance of pedestrian delay but that professional judgements be made instead.

5.5.5 Non-motorised user Amenity

- 5.5.5.1 Non-motorised user amenity is broadly defined as the pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic. The IEMA guidance notes the 1993 IEMA guidance included tentative thresholds that changes in pedestrian amenity may be considered significant where traffic flow is halved or doubled. Whilst these thresholds no longer appear in any DfT guidance they have not been superseded by new guidance or through planning case law. They are therefore considered as a starting point for assessment with full regard given to local conditions.

5.5.6 Fear and intimidation

- 5.5.6.1 A further impact traffic may have on pedestrians is fear and intimidation. This is dependent on the volume of traffic, HGV composition and its proximity to people or the lack of protection. Vehicle size and speed is also likely to have an impact. The IEMA guidance outlines a weighting system to provide an approximate assessment for the likely pedestrian fear and intimidation. Table 5.1 below presents a Fear and Intimidation degree of hazard table which establishes thresholds for assessment. Table 5.2 presents the level of fear and intimidation as a total score, based on the score from the three elements combined in Table 5.1.

Table 5.1: Fear and intimidation degree of hazard

Average traffic flow over 16-hour day - all vehicles/ hour 2-way (a)	Total 16-hour heavy vehicle flow (b)	Average vehicle speed (c)	Degree of hazard score
+1,800	+3,000	=>40	30
1,200-1,800	2,000-3000	30-40	20
600-1,200	1,000-2,000	20-30	10
<600	<1,000	<20	0

Table 5.2: Levels of fear and intimidation

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

5.5.7 Road safety

- 5.5.7.1 Where a proposed development is expected to produce a change in the character of the traffic on the local road network, as a result of increased HGV movements for example, the IEMA Guidance states that the implications of local circumstances or factors which may elevate or lessen risks of accidents, such as junction conflicts, would require assessment in order to determine the potential significance of accident risk. In order to understand the likely Impact of the Proposed Development, the assessment will calculate the collision rates which are based on the road type, traffic flow and the length of the link in question using the Department for Transport Cost and Benefit to Accidents - Light Touch (COBALT).

5.5.8 Extent of Study Area

- 5.5.8.1 In terms of transport and access impacts, the receptors are the users of the roads within the study area and the locations (towns/villages/AQMAs) through which those roads pass.

Table 5.3: Links within the Study Area

Reference	Link	Receptor (Name of road or location)
1	A27 between A29 and A285	Key two-lane dual carriageway link on the south coast linking the east and west.
2	A27 between A29 near Bognor Regis	Key two-lane dual carriageway link on the south coast linking the east and west.
3	A27 - Bognor Regis and Arundel	Key two-lane dual carriageway link on the south coast linking the east and west.
4	A27 - (W of Fontwell Roundabout)	Key two-lane dual carriageway link on the south coast linking the east and west.
5	A29 Westergate Street (North of Site Access)	Pedestrian travelling along road to residential housing and church. Key link between the A27 and Bognor Regis
6	Meadow Way	Pedestrian and vehicle access to residential area.
7	Ivy Lane	Pedestrian and vehicle access to residential area.
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	Pedestrian travelling along road to residential housing and school. Key link between north and south of the area.
9	A29 Fontwell Avenue (North Memorial Roundabout)	Pedestrian and vehicle travelling along road to residential housing. Key link between north and south of the area.
10	A29 Nyton Road	Pedestrian and vehicles using link to access residential areas. Also used as link to Eastergate CE Primary School.
11	B2233 Barnham Road	Pedestrian and vehicles using link to access residential areas. Also used as link to Eastergate CE Primary School.
12	B2233 Nyton Road (South of A27)	Key link to the A27 for drivers.
13	B2233 Nyton Road (Between Oving Road and A29)	Key link to the A27 for drivers. Some use for access to properties.
14	A29 Shripney Road	Southern Cross Trading Estate. Provides a bypass to Bognor Regis.
15	Oving Road	Key driver link between Aldingbourne and Oving.

Reference	Link	Receptor (uses of land or location)
16	Hook Lane	Pedestrian use for access to residential housing. Key link between Woodgate and Aldingbourne for drivers.
17	Church Lane	Key pedestrian and driver link to Eastergate CE Primary School.
18	A259 Rowan Way	Access to Southern Cross Trading Estate. Provides a bypass to Bognor Regis.
19	A259 Charles Purley Way	Access to major shops such as Adli and Lidl. Provides a bypass to Bognor Regis.
20	A29 Westergate Street (South of Site Access)	Pedestrians walking to school in the morning and afternoon. Key link between the A27 and Bognor Regis
21	Site Access	Pedestrians and vehicles use for access to residential property.
22	Realigned A29	Key link between the A27 and Bognor Regis
23	A29 East of Fontwell East Roundabout	Key link between the A27 and Billingshurst for drivers
24	Gladius Way	Key link for drivers in the area.

5.5.9 Receptor sensitivity

5.5.9.1 The sensitivity of each highway link included in the assessment has been assigned a sensitivity. This is based on professional judgement and related to the proximity, volume and type of receptors along the highway link. Table 5.4 below summarises the rationale used to determine the sensitivity against the corresponding receptors.

Table 5.4: Defining Receptor Sensitivity

Sensitivity	Description / reason	Receptor
High	Receptors of greatest sensitivity to traffic flows: schools, colleges, playgrounds, accident blackspots, retirement homes and urban / residential homes	Residents / workers travelling to and from work or home on foot and by car or bicycle,

Sensitivity	Descriptive / Impact	Receptor
	without footways that are used by pedestrians and cyclists.	school children, leisure walkers and equestrians.
Medium	Receptors of medium sensitivity to change in traffic flows including congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycle ways, community centres, parks and recreation facilities.	Residents / workers travelling to and from work or home on foot and by car or bicycle, people visiting these land uses.
Low	Receptors with low sensitivity to change in traffic flows: places of worship, public open space, nature conservation areas, listed buildings, tourist / visitor attractions and residential areas with adequate footway provision.	Residents / workers travelling to and from work or home on foot or car or bicycle and people visiting these land uses.
Negligible	Receptors with negligible sensitivity to traffic flows including Motorway and Dual Carriageways and / or land uses sufficiently distant from affected routes and junctions.	Residents / workers travelling by foot or by car or bicycle.

5.5.9.2 Where the sensitivity of a road link is judged as high or medium, Rule 2 is applied and where traffic flows are predicted to increase by 10% or more, an assessment of environmental effects is undertaken. Where the sensitivity is judged as low or negligible results, Rule 1 is applied and where traffic flows are predicted to increase by more than 30%, or where the number of HGVs is predicted to increase by more than 30%, an assessment of environmental effects of the road link is undertaken.

5.5.9.3 Details of the sensitivity of the highways links and receptors are set out in 5.7.10.

5.5.10 Magnitude of change

5.5.10.1 Based on the Rule 1 and Rule 2 and the sensitivity of the receptors, Table 5.5 shows the magnitude of change applied to the environmental effects to help identify levels of significance.

Table 5.5: Magnitude of Change

Transport effect	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows over 91%	Change in total traffic or HGV flows of 61%-90%	Change in total traffic or HGV flows of 31%-60%	Change in total traffic or HGV flows of less than 30%
	Also includes consideration of traffic speeds, availability of crossing facilities and the number sensitivity of users that are likely to cross the affected route			

Driver Delay	Average delay changes of more than 60 seconds during peak periods	Average delay changes of 31-60 seconds during peak periods	Average delay changes of 21-30 seconds during peak periods	Average delay changes of less than 20 seconds during peak periods
	Based upon professional judgement, with changes in delay of more than 15% in either peak considered to be significant in EIA terms			
Pedestrian Delay And Non motorised user Amenity	Based on general level of pedestrian activity, visibility and physical conditions such as traffic flow, traffic composition, crossing points and pavement width / separation from traffic			
Fear and Intimidation	Two step changes in level shown in Table 5.2	One step change in level shown in Table 5.2, but with >400 veh increase in average 18hr AV two-way all vehicle flow; and/or >500 HV increase in total 18hr HV flow	One step change in level shown in Table 5.2, but with <400 veh increase in average 18hr AV two-way all vehicle flow; and/or <500 HV increase in total 18hr HV flow	No change in step changes shown in Table 5.2
Accidents and Safety	Based upon the assessment of collision rates using the Department for Transport Cost and Benefit to Accidents - Light Touch (Cobalt).			

5.5.11 Significance Criteria

- 5.5.11.1 The significance level attributed to each effect has been assessed based on the sensitivity/value of the affected receptor(s) and the magnitude of change arising from the Proposed Development, as well as a number of other factors. The sensitivity of the affected receptor is assessed on a scale of high, medium, low and negligible, and the magnitude of change is assessed on a scale of high, medium, low and negligible.

5.5.12 Effect Significance

Table 5.6: Table informing the significance of effects based on receptor value and magnitude of impact

Receptor sensitivity	Magnitude of change				
		High	Medium	Low	Negligible
	High	Major (Significant)	Major (Significant)	Moderate (Significant)	Negligible (Not Significant)
	Medium	Major (Significant)	Moderate (Significant)	Minor (Not Significant)	Negligible (Not Significant)
	Low	Moderate (Significant)	Minor (Not Significant)	Minor (Not Significant)	Negligible (Not Significant)
	Negligible	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)

5.5.12.1 For the purposes of this assessment, any effects with a significance level of slight or neutral are considered to be not significant in EIA terms. In contrast, ‘moderate’ and above significance of an effect would be considered significant in EIA terms.

5.5.12.2 The resulting significance of an effect will be reported considering its duration (long or short term), permanence (permanent or temporary) and the type of the impact (beneficial or adverse).

5.5.13 Extent of the Study Area

5.5.13.1 The assessment study area is based on the traffic surveys undertaken within the highway network in the vicinity of the Proposed Development. The study area includes the following 24 junctions and associated links:

- A27 between A29 and A285;
- A27 between A29 near Bognor Regis;
- A29 Westergate Street (Northbound);
- A27 Bognor Regis and Arundel;
- A29 Westergate Street (North of Site Access);
- Meadow Way;
- Ivy Lane;
- A29 Fontwell Avenue (South of Fontwell West Roundabout);
- A29 Fontwell Avenue (North Memorial Roundabout);
- A29 Nyton Road;
- B2233 Barnham Road;

- B2233 Nyton Road (South of A27);
- B2233 Nyton Road (Between Oving Road and A29);
- A29 Shripney Road;
- Oving Road;
- Hook Lane;
- Church Lane;
- A259 Rowan Way;
- A259 Charles Purley Way;
- A29 Westergate Street (South of Site Access);
- Site Access/Pine Close;
- Realigned A29;
- A29 East of Fontwell East Roundabout; and
- Gladius Way.

5.5.14 Assessment Scenarios

5.5.14.1 In line with the work undertaken as part of the TA, the potential impacts of the Proposed Development were assessed for the following scenarios:

- Scenario 1 – 2019 Base;
- Scenario 2 – 2031 Base (with BEW Parcel SC1 Phase 1 but without Cala Homes proposed development);
- Scenario 3 – 2031 Base + Proposed Development (Without the East West Link Road);
- Scenario 4 – 2038 Base (with BEW Parcel SC1 Phase 1 and 2 but without Cala Homes proposed development); and
- Scenario 5 – 2038 Base + Proposed Development (With the BEW Parcel SC1 Phase 1 and 2, East West Link Road and full realignment of the A29).

5.6 Consultation Undertaken to Date

5.6.1 As set out in Chapter 3, a Scoping Opinion was adopted by Arun District Council in November 2022 and the comments related to highways and transport have been considered and are reflected in this chapter where appropriate.

5.6.2 In addition to the ES Scoping Opinion, WSP have engaged with West Sussex County Council and National Highways regarding the scope of other documents accompanying the application, most importantly, the assessment of the potential impacts of the Proposed Development on the existing transport networks in the area.

- 5.6.3 As a result of the consultation with WSCC and National Highways, It was agreed that the CATM outputs would be utilised for the assessment of the Proposed Development. The CATM outputs have been taken from the BEW planning application which Included a series of scenarios with and without the Proposed Developments and the BEW development. The CATM outputs only Included 350 dwellings for the Proposed Development which WSP has scaled up to 400 dwellings.

5.7 Baseline

5.7.1 Local Highway Network

- 5.7.1.1 A29 Westergate Street is a classified A road and provides a link from Fontwell to Bognor Regis. The road has junctions evenly spaced along its length providing access to mainly residential estates and is single carriageway until just north of Bognor Regis. There are generally no parking restrictions along the road and there are instances of parking occurring in front of residential properties. In the vicinity of the site the A29 has a posted speed limit of 30mph and street lighting, although 75 metres to the south of the site access there is a 20mph school zone around Aldingbourne Primary School.
- 5.7.1.2 A29 Westergate Street has a level railway crossing to the south of Hook Lane approximately 550 metres from the site entrance. The level crossing provides a signal-controlled crossing for the West Coastway Railway line for services between Barnham and Chichester stations. The level crossing is a barrier protected crossing that contains manned controlled barriers operated via CCTV. In advance of a train approaching the level crossing, amber warning lights are displayed to vehicles followed by a red light reinforced with the lowering of barriers to halt vehicles at the crossing point. Vehicles are held on the red light / barrier until the train has cleared the level crossing, when the barriers are raised and the lights extinguished. Barrier closure times are variable and are based on predetermined safety clearance times.
- 5.7.1.3 Meadow Way is a local residential street providing access to approximately 79 dwellings. Meadow Way has no through route and has a narrow carriageway width. There are no parking restrictions along the road.
- 5.7.1.4 A29 Westergate Street / Meadow Way junction is a priority-controlled T-junction with line-marking. There are junction approach warning signs south along A29 Westergate Street. There are no parking restrictions at the junction. Pine Close is located immediately to the north of the proposed site access which serves access to a number of dwellings. Pine Close forms a priority controlled junction with A29 Westergate Street with tactile paving to facilitate pedestrian movement.
- 5.7.1.5 A full review of all links included within the study area is provided in Table 5.3.

5.7.2 Pedestrian Network

- 5.7.2.1 There is a direct and continuous footway connection from the A29 Westergate Street to Ivy Lane, through Elm Road and onto Lime Avenue which provides a connection to the Six Villages Academy. There is continuous street lighting and drop kerb crossing points along this route.

5.7.3 Cycle Network

- 5.7.3.1 There is no existing dedicated cycle network in the vicinity of the development. The nearest cycle routes are found along A259 linking Chichester to Bognor Regis. This comprises the National Cycle Network Route 2 which is a long distance cycle route and, when complete, will link Dover with St Austell via the South Coast of England. The route is currently 361 miles long. The provision along the A259 includes an off-carriageway cycle route providing a safe and suitable cycling connection.
- 5.7.3.2 Although there are no dedicated cycle routes located in the immediate vicinity of the site, A29 Westergate Street has sufficient width to allow for on-road cycling, with sufficient visibility along the length of the road and at junctions along the route. Also, within the vicinity of the site observed speeds taken from the ATC surveys appear suitable for cycling. Additionally, the B2233 Barnham Road provides sufficient width to enable on-carriageway cycling to occur, providing a connection from the site to Barnham Rail Station.

5.7.4 Bus Network

- 5.7.4.1 The closest bus stop is 150 metres to the south of the access point along A29 Westergate Street. There are both northbound and southbound bus stops in this location. A bus stop flag is provided on both sides of the street. The stops are located on the footpath and a firm level service is provided at the stop location.
- 5.7.4.2 The stops are served by bus Route 66 provided by Compass Bus. Route 66 travels from Bognor Regis to Yapton via Barnham as a loop service. Northbound services travel onto Barnham Station and southbound services travel towards Bognor Regis. Services are provided Monday to Saturday, with no Sunday service. Bus times have been sourced from the Compass Bus website and as shown in Table 5.7.

Table 5.7: Route 66 Bus Times

Direction	Times					
Southbound	0754	0906	1106	1324	1542	1720
Northbound	0831	1031	1250	1505	1648	1753

- 5.7.4.3 Bus stops within a 15-minute walk north of the site also provide access to services 85 and 500. The number 85 operates between Chichester and Arundel, whilst the 500 bus runs between Littlehampton and Chichester. The route 85 and route 500 bus services are summarised in Table 5.8 and Table 5.9, respectively.

Table 5.6: Route 85 Bus Times from The Island

Direction	Times				
Westbound	0816	1016	1216	1416	1616
Eastbound	0928	1110	1310	1517	1659

Table 5.9: Route 005 Bus Times from War Memorial

Direction	Start time	End time	Buses per Day	Frequency
Westbound	05:55	00:24	32	30 minutes
Eastbound	05:35	23:43	33	30 minutes

5.7.5 Rail Network

- 5.7.5.1 The closest rail station is located at Barnham Station which is situated two miles along the road network from the site (A29 and Barnham Road). The station is accessible on foot, by bicycle, car or via bus Route 66 as above. The station is serviced by the West Coastway line which runs between Southampton and Brighton, and a spur line to Bognor Regis. Services are provided to Southampton, Portsmouth, Bognor Regis, Brighton and London Victoria.
- 5.7.5.2 Station facilities include the provision of bicycle parking, car park (pay and display spaces), step free access and refreshment facilities. Car parking is provided for general vehicles, parking for people with disabilities, and vehicles with electric car charging.
- 5.7.5.3 Train services are provided by Southern Rail with details of destinations available shown in Table 5.10.

Table 5.10: Rail Services From Barnham

Destinations	Number of trains
Brighton	2
London Victoria	4
Littlehampton	2
Bognor Regis	4
Southampton Central	2
Portsmouth and Southsea	3
Portsmouth Harbour	1

5.7.6 Highway Safety

- 5.7.6.1 Personal Injury Collision (PIC) data was obtained from West Sussex County Council for the area all junctions/links stated above. The collision data were obtained for the period of 2015 to 2020, representing pre-Covid 19 conditions and the period of 2020 to 2021 covering the most recent collisions.
- 5.7.6.2 The detailed analysis of the collision data is provided in Section 3 of the TA, included in Appendix 6.1. The TA provides a detailed analysis of the accident data investigating any apparent clusters and/or potentially sensitive locations to identify potential accident patterns that the Proposed Development could exacerbate.
- 5.7.6.3 A summary of the PIC data recorded on the links within the study area during the study period is provided in Table 5.11.

Table 5.11: Personal Injury Collision Analysis

Link	Severity			Total	Pedestrians		Cyclists		Motorcyclists	
	High	Serious	Fatal		No.	%	No.	%	No.	%
1	19	11	1	31	0	0%	0	0%	3	10%
2	6	3	0	9	0	0%	0	0%	3	33%
3	3	2	0	5	0	0%	0	0%	0	0%
4	3	4	0	7	0	0%	0	0%	3	43%
5	6	3	0	9	1	11%	0	0%	1	11%
6	0	0	0	0	0	-	0	-	0	-
7	0	0	0	0	0	-	0	-	0	-
8	3	0	0	3	0	0%	0	0%	0	0%
9	2	3	0	5	1	20%	2	40%	0	0%
10	9	1	0	10	1	10%	2	20%	1	10%
11	8	2	0	10	2	20%	1	10%	1	10%
12	2	0	0	2	0	0%	1	50%	0	0%
13	2	1	0	3	0	0%	0	0%	0	0%
14	7	6	0	13	0	0%	1	8%	3	23%
15	3	4	0	7	0	0%	0	0%	0	0%
16	0	1	0	1	0	0%	0	0%	0	0%
17	1	1	0	2	0	0%	0	0%	0	0%

18	23	7	0	30	0	0%	0	0%	0	0%
19	5	2	0	7	0	0%	0	0%	0	0%
20	0	5	0	5	0	0%	0	0%	0	0%
21	0	0	0	0	0	-	0	-	0	-
22	0	0	0	0	0	-	0	-	0	-
23	17	10	3	30	0	0%	0	0%	0	0%
24	4	0	1	5	0	0%	0	0%	0	0%
Total	123	66	5	194	5	2.6%	7	3.6%	15	7.7%

5.7.6.4 As summarised in Table 5.11, there were a total of 194 PIC recorded along the links within the study area during the study period. From the total of 194 PIC, 123 accidents were classified as slight and 66 as serious. Five fatal PIAs were recorded within the study area during the study period.

5.7.6.5 Some vulnerable road users were involved in the recorded PICs during the study period. Five recorded PICs involved a pedestrian, seven a cyclist, and 15 involved a motorcyclist.

Walking and Cycling Distances

5.7.6.6 Manual for Streets states: “walking offers the greatest potential to replace short car trips, particularly those under 2km”. The CIHT document ‘Providing for Journeys on Foot’, sets out further guidance pertaining to general recommended walking distances. This document advises that typically, 80% of all journeys under one mile (1.4km) are made on foot while 60% of all journeys under 2 miles (2.8km) are made on foot. It also sets out the following suggested acceptable maximum walking distances and may be used for ‘planning and evaluation purposes.

5.7.6.7 Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles. Walking and rambling can also be undertaken as a leisure activity, often over longer distances.

5.7.6.8 CD 143 – Designing for walking, cycling and horse-riding provides requirements and advice for the design of walking, cycling and horse riding facilities adjacent to motorway and all purpose trunk road network.

5.7.6.9 It is apparent that the majority of people would walk to destinations that are up to in the order of approximately 3km away, although the ‘preferred maximum’ is typically 2km for commuting and school purposes and 1.2km for other destinations. It is also apparent that the vast majority of people would cycle to destinations that are up to in the order of approximately 5km away, with a significant proportion would also cycling to destinations 8km away.

5.7.7 Cycling

- 5.7.7.1 LTN 1/20 – Cycle Infrastructure Design – provides guidance on cycling (and walking) distances, stating: “two out of every three personal trips are less than five miles [8km] in length – an achievable distance to cycle for most people, with many shorter journeys also suitable for walking.”
- 5.7.7.2 The National Travel Survey highlights that the average cycle trip is currently 3.4 miles (5.5km) while Local Transport Note 1/04 highlights the average distance travelled by Non-Motorised Users (NMUs) at that time and suggests that “...journeys up to three times [the average distance] are not uncommon for regular commuters” accepting that “...fitness and physical ability, journey purpose...and conditions” are relevant factors. It should also be noted that this distance is an average distance, and consequently, some people are willing to cycle further than this distance regularly.

5.7.8 Accessible Facilities

- 5.7.8.1 A significant number of facilities are accessible on foot or by bicycle from the site within the acceptable distances set out above. A primary school and secondary school can be walked to in under 10 minutes (based on an assumed walking speed of 4.8kph) and cycled to in less than five minutes (based on an assumed cycling speed of 16kph). Barnham town centre is approximately 3.1km away and offers a range of shops and services. There are bicycle stands provided on Yapton Road, making cycling to the village centre a realistic modal choice.
- 5.7.8.2 Table 5.12 lists the nearest examples of several types of facility within 2.4km of the site, a distance which can be covered in approximately 30 minutes on foot or ten minutes by bicycle.

Table 5.12: Accessibility to Local Facilities

Facility Name	Location	Facility Type	Distance from Site Access on foot/by bicycle
Aldingbourne Primary School	A29 Westergate Street	Primary School	400m
Aldingbourne Community Sports Centre	Olivers Meadow	Sports Centre	530m
Eastergate CE Primary School	Church Lane	Primary School	600m

Facility Name	Location	Facility Type	Distance from Site Access on foot/bike/motor
Aldingbourne Village Stores	A29 Westergate Street	Convenience Store (Post Office)	640m
Ormiston Six Villages Academy	Lime Avenue	Secondary School	680m
Six Villages Sports Centre	Lime Avenue	Sports Centre	680m
Westergate Day Nursery	Lime Avenue	Nursery	900m
Eastergate Pre School	Barnham Road	Nursery	1,300m
The Croft Pharmacy, Eastergate	Barnham Road	Pharmacy	1,500m
Croft Surgery, Eastergate	Barnham Road	GP Practise	1,500m
Mr N Tsoilis, Barnham	Downview Road	Dentist	1,900m

5.7.9 Traffic Flows Baseline 2019

- 5.7.9.1 The 2019 AADT Traffic Flow for the 24 links in the area are shown below in Table 5.13. The link references are shown in Figure 5.1.

Figure 5.1: Highway Links

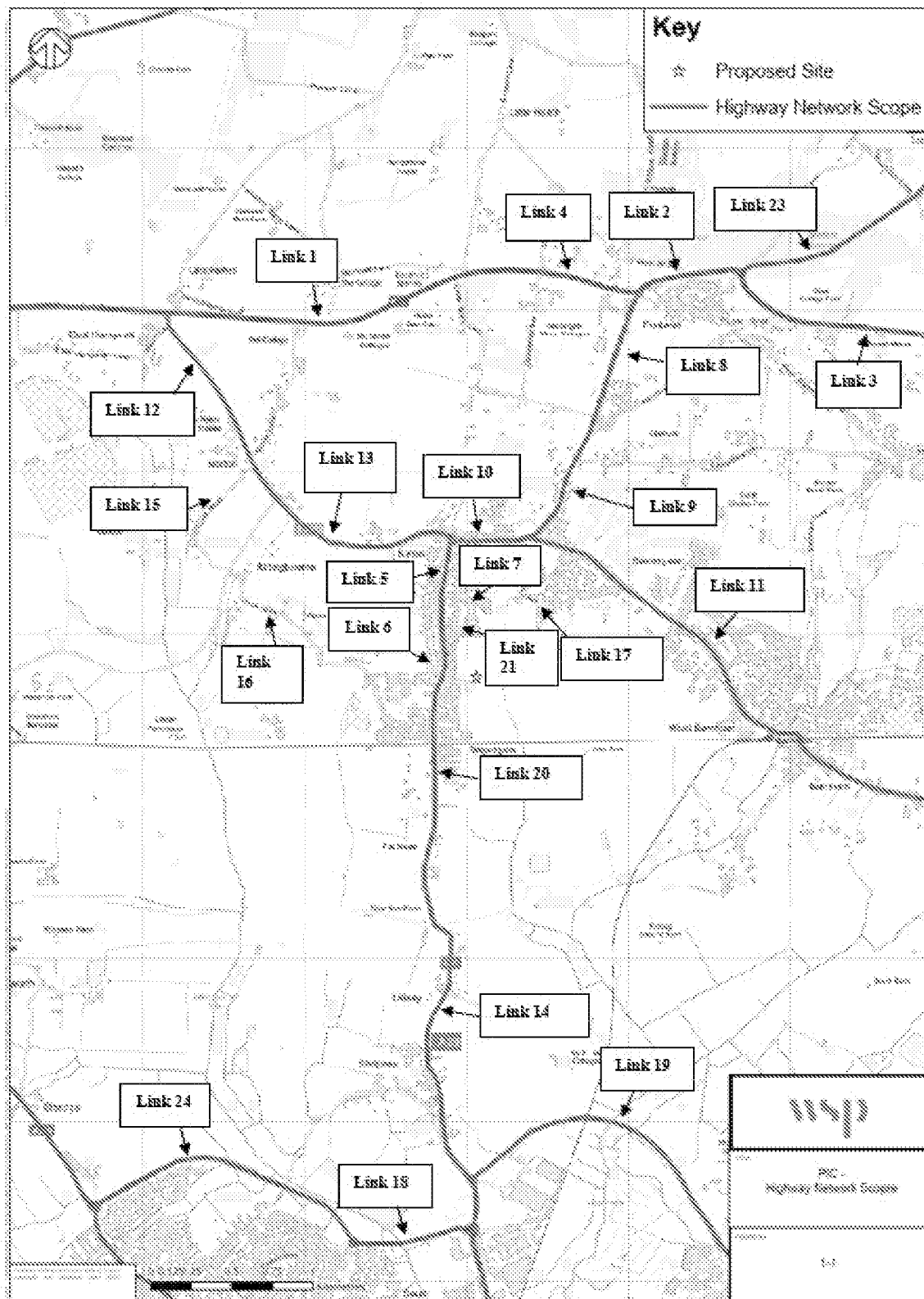


Table 5.13: 2019 Baseline Traffic Flows

Reference	Link	AADT (24hrs) - Flow (veh/day)	HDV (24hrs) - Flow (veh/day)
1	A27 between A29 and A285 - TMU Site 5756/1	41286	2827
2	A27 between A29 near Bognor Regis	38234	2600
3	A27 - Bognor Regis and Arundel	28523	2154
4	A27 (W of Fontwell Roundabout	33596	2327
5	A29 Westergate Street (North of Site Access)	12751	638
6	Meadow Way	310	4
7	Ivy Lane	1422	0
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	14393	1309
9	A29 Fontwell Avenue (North Memorial Roundabout)	14097	656
10	A29 Nyton Road	21616	1244
11	B2233 Barnham Road	10428	273
12	B2233 Nyton Road (South of A27)	11136	274
13	B2233 Nyton Road (Between Oving Road and A29)	12934	339
14	A29 Shripney Road	32979	660
15	Oving Road	4948	70
16	Hook Lane	2866	29
17	Church Lane	852	17
18	A259 Rowan Way	12906	1094
19	A259 Charles Purley Way	16753	235
20	A29 Westergate Street (South of Site Access)	12650	633
21	Site Access/Pine Close	38	0
22	Realigned A29	0	0
23	A29 East of Fontwell East Roundabout	17877	1386
24	Gladius Way	12906	449

5.7.10 Receptor Sensitivity

5.7.10.1 In accordance with the IEMA Guidelines, an assessment of sensitive receptors was undertaken to identify the proximity of each to the local transport networks. Locations that were considered as sensitive receptors include locations where any of the following is located:

- Schools;
- Health facilities;
- Community facilities; and
- Areas with significant pedestrian movements.

5.7.10.2 Table 5.14 summarises the rationale used to determine the sensitivity against the corresponding receptors.

Table 5.14: Receptor Sensitivity

Reference	Highway link	Comments	Receptor Sensitivity	Rule to assess against
1	A27 between A29 and A285	The highway is a two-way, two lane carriageway with no pedestrian footways	Negligible	1
2	A27 between A29 near Bognor Regis	The highway is a two-way, two lane carriageway with no pedestrian footways	Negligible	1
3	A27 - Bognor Regis and Arundel	The highway is a two-way, two lane carriageway with no pedestrian footways	Negligible	1
4	A27 (W of Fortwell Roundabout	The highway is a two-way, two lane carriageway with no pedestrian footways	Negligible	1
5	A29 Westergate Street (North of Site Access)	The highway is a two-way, single lane carriageway with pedestrian footways. There is a church on this link.	High	2
6	Meadow Way	The highway is a two-way, single lane carriageway with properties fronting the road and pedestrian footways. Residential properties	Medium	2

		and footways are setback from the edge of carriageway.		
7	Ivy Lane	The highway is a two-way, single lane carriageway with properties fronting the road and pedestrian footways. Residential properties and footways are generally setback from the edge of carriageway.	Medium	2
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	The highway is a two-way, single lane carriageway with a narrow pedestrian footways immediately adjacent to the highway.	Low	1
9	A29 Fontwell Avenue (North Memorial Roundabout)	The highway is a two-way, single lane carriageway with properties fronting the road and a narrow pedestrian footways.	High	2
10	A29 Nyton Road	The highway is a two-way, single lane carriageway with a narrow pedestrian footways.	High	2
11	B2233 Barnham Road	The highway is a two-way, single lane carriageway with properties fronting the road and a narrow pedestrian footways. It is also a major link to Barnham Primary School	High	2
12	B2233 Nyton Road (South of A27)	The highway is a two-way, single lane carriageway with no pedestrian footways	Negligible	1
13	B2233 Nyton Road (Between Oving Road and A29)	The highway is a two-way, single lane carriageway with some house frontage and pedestrian footways	Low	1
14	A29 Shripney Road	The highway is a two-way, two lane carriageway with properties fronting the road but no pedestrian	High	2

		footways. There are a number of major shops at the end of the link.		
15	Oving Road	The highway is a two-way, single lane carriageway with no pedestrian footways	Negligible	1
16	Hook Lane	The highway is a two-way, single lane carriageway with house frontage and pedestrian footways	Medium	2
17	Church Lane	The highway is a two-way, two lane carriageway with properties fronting the road but no pedestrian footways. the link provides access to Eastergate CE Primary School.	High	
18	A259 Rowan Way	The highway is a two-way, single lane carriageway with pedestrian footways far from the road edge.	Low	1
19	A259 Charles Purley Way	The highway is a two-way, single carriage carriageway with a pedestrian footways. Access to major shops such as Aldi and Lidl.	Medium	2
20	A29 Westergate Street (South of Site Access)	The highway is a two-way, single lane carriageway with Aldingbourne Primary School along the road and pedestrian footways.	High	2
21	Site Access/Pine Close	The highway is a two-way, single lane carriage way with property frontage.	High	2
22	Realigned A29	The highway is a two-way, single lane carriageway.		
23	A29 East of Fontwell East Roundabout	The highway is a two-way, single lane carriage way with no property frontage or pedestrian footways.	Negligible	1

24	Gladius Way	The highway is a two-way, single lane carriage way with no property frontage or pedestrian footways.	Negligible	1
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5.8 Effects During Construction

5.8.1 The assessment of the effects resulting from the Proposed Development is considered as follows:

- Construction Phase – consideration is given to impacts resulting from the construction of the Proposed Development.
- Operation Phase – consideration is given to all links identified for the detailed assessment (i.e., those exceeding the thresholds set out by Rule 1 and Rule 2, if any). Consideration is also given to impacts resulting from the operation of the Proposed Development at different stages of its lifecycle.

5.8.2 Likely Significant Environmental Effects - During Construction

5.8.2.1 During construction, there is likely to be an increase of Heavy Goods Vehicles (HGVs) with deliveries to and from the site and construction work vehicles for employees to access the site. Additionally, there is likely to be disruption to pedestrian, cyclists and road vehicles, with potential road/lane closures. This is only likely to be temporary whilst construction underway. These potential impacts are likely to affect the existing residential properties within the immediate vicinity of the site.

5.8.2.2 Construction traffic results in a temporary impact as it usually ceases upon completion of construction works. The construction traffic is generally significantly lower in volume than the traffic associated with the operation of development (of this type). Thus, the effects tend to be temporary and less significant.

5.8.2.3 Given the scale of the Proposed Development, it is expected to be delivered in phases over approximately eight years. Subject to planning approval, it is anticipated that construction will start with enabling works in 2024, followed by the first residential units in 2025 and the full build-out in 2032. The proposed development is expected to be delivered with an average annual build-out rate of approximately 52 dwellings. Table 5.15 present the forecast peak construction traffic, which will occur during enabling works.

Table 5.15: Forecast Peak Construction Traffic

Construction Traffic	A407		A407	
	Cars / LGVs	HGVs	Cars / LGVs	HGVs
Arrivals	51	13	64	16
Departures	51	13	64	16
Two-way	102	26	128	32

5.8.2.4 The Construction routing is based on the likelihood that HGVs will route to the site via the Strategic Highway Network and the construction workers will likely come arrive from nearby towns. As such the HGV route has been assumed to be a 50:50 split on the A27 east and west. Whilst, the construction worker trips has been split evenly in three directions; south towards Bognor Regis and in either direction on the A27.

5.8.2.5 The below sensitive receptors in traffic and transport terms have been identified. These are based on their proximity to key destinations such as schools and shopping centres, as well as other factors such as people walking and cycling also being taken into account.

- A29 Westergate Street (North of Site Access) - link 5
- Meadow Way - link 6
- Ivy Lane - link 7
- A29 Fontwell Avenue (North Memorial Roundabout) - link 9
- A29 Nyton Road - link 10
- B2233 Barnham Road - link 11
- A29 Shripney Road - link 14
- Hook Lane - link 16
- Church Lane - link 17
- A259 Charles Purley Way - link 19
- A29 Westergate Street (South of Site Access) - link 20
- Site Access/Pine Close - link 21

5.8.2.6 To provide a robust assessment of construction traffic flows, these have been compared against the 2019 baseline traffic flows derived from CATM. By using 2019 traffic flows, the reported impact will be greater than a scenario where these 2019 flows were uplifted to 2025/26 to match the anticipated construction programme.

5.8.2.7 The increase in traffic flow during construction is shown in Table 5.16.

Table 5.16: Construction Traffic Link Assessment

Reference	Highway Link	2019	2019 Base +	2019	2019 + HDV	%	% HDV
		Base	Construction	Base	Construction	Increase	Increase
1	A27 Westbound between A29 and A285	41287	41325	2827	2840	<1%	<1%
2	A27 Eastbound between A29 near Bognor Regis	38234	38273	2600	2613	<1%	1%
3	A27 Westbound - Bognor Regis and Arundel	28523	28562	2154	2167	<1%	1%
4	A27 Eastbound (W of Fontwell Roundabout)	33597	33635	2327	2340	<1%	1%
5	A29 Westergate Street (North of Site Access)	12751	12828	638	664	1%	4%
6	Meadow Way	310	310	4	4	0%	0%
7	Ivy Lane	1422	1422	0	0	0%	0%
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	14393	14470	1309	1335	1%	2%

9	A29 Fontwell Avenue (North Memorial Roundabout)	14097	14174	656	682	1%	4%
10	A29 Nyton Road	21616	216667	1244	1270	<1%	2%
11	B2233 Barnham Road	10428	10428	273	273	0%	0%
12	B2233 Nyton Road (South of A27)	11136	11136	274	274	0%	0%
13	B2233 Nyton Road (Between Oving Road and A29)	12934	12934	339	339	0%	0%
14	A29 Shripney Road	32979	32996	660	660	<1%	0%
15	Oving Road	4948	4948	70	70	0%	0%
16	Hook Lane	2866	2866	29	29	0%	0%
17	Church Lane	852	852	17	17	0%	0%
18	A259 Rowan Way	12906	12923	1094	1097	<1%	0%
19	A259 Charles Purley Way	16754	16771	235	235	<1%	0%
20	A29 Westergate Street (South of Site Access)	12650	12701	633	634	<1%	0%
21	Site Access/ Pine Close	38	166	0	26	>100%	>100%

22	Realigned A29	N/A	N/A	N/A	N/A	N/A	N/A
23	A29 East of Fontwell East Roundabout	17877	17877	1386	1386	0%	0%
24	Gladius Way	12906	12906	449	449	0%	0%

5.8.2.8 Following an analysis of the increase in traffic during construction, the only link which shows significant change is the site access/ Pine Close, demonstrating both a high increase in overall traffic and HDV traffic.

5.8.2.9 Table 5.17 shows the effects of construction on these links in terms of severance, traffic delay, pedestrian amenity, pedestrian delay, fear and intimidation, and accidents and safety.

Table 5.17: Site Access Link Construction Assessment

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	Based on the magnitude of change identified in Table 5.15 the proposed development would have a high impact on severance during the peak construction period. However it is also noted that the number of residents likely to be impacted by the construction traffic is low and that the arrival / departure of construction traffic vehicles is likely to be spread across the day. It is therefore considered unlikely that the construction phase will a major detrimental impact on severance. Taking this into account, it is estimated that the proposed development lead to a medium magnitude of change and will have a Moderate adverse effect on severance of a temporary nature.	low	Moderate (Significant)
Traffic delay	The estimated level of construction traffic when considered across an 8-hour working day (09:00-17:00) is the equivalent of 16 vehicles per hour on a link with very low baseline traffic flows. Construction vehicles will be also likely be prohibited from traveling in the peak hours through controls	Negligible	Negligible (Not Significant)

	contained within the Construction Traffic Management Plan to limit impacts to the highway network. It is therefore predicted that the proposed development will have a negligible magnitude of change on traffic delay during the construction period, leading to a Negligible adverse effect of a temporary nature.		
Non-motorised user amenity	The addition of HDV traffic during the construction period is likely to have a negative impact on non-motorised users on Pine Close. However, as noted above the number of impacted users is likely to be low and the predicted level of construction traffic is unlikely to result in significant delays to crossing of Pine Close. The addition of construction traffic also unlikely to require use of a diversion route to cross the road.	Medium	Major (Significant)
Pedestrian delay	It is therefore predicted that the proposed development will have a medium magnitude of change on High magnitude of change on non-motorised user amenity and low magnitude of change for pedestrian delay.	Low	Moderate (Significant)
Fear and intimidation	The estimated level of construction traffic results in a hazard score of 'small' based on the criteria contained within Tables 5.1 and 5.2. As there is no step change in this categorisation as a result of the proposed development the magnitude is negligible. This results in a negligible adverse effect of a temporary nature	Negligible	Negligible (Not Significant)
Accidents and safety	A COBALT assessment has been completed to calculate the estimated number of accidents likely to occur on Pine Close with and without the addition of construction traffic. This calculation has estimated that peak construction traffic will increase typical number of accidents on the link by 0.00038. This is therefore considered to be negligible magnitude of change leading to a	Negligible	Negligible (Not Significant)

	negligible adverse effect of a temporary nature		
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- 5.8.2.10 Table 5.17 above shows that the proposed development is predicted to result in significant environmental effects on severance, non-motorised user amenity and pedestrian delay during the construction period.

5.8.3 Residual Effects - Likely Significant Environmental Effects - Post Construction - 2031 and 2038.

- 5.8.3.1 Once the Proposed Development becomes operational, there is likely to be traffic associated with the residents and visitors to the proposed residential dwellings, as well as employees and pupils of the proposed school and employees and visitors of the local centre and associated facilities of the wider allocation.
- 5.8.3.2 The generation, distribution and assignment of the trips associated with the Proposed Development are discussed in detail in the TA provided in Appendix 6.1, with the forecast traffic volumes associated with the Do-Something scenario.
- 5.8.3.3 Following the methodology set out earlier in this Transport, Accessibility and Movement Chapter, an analysis of the traffic volumes within the study area involving the application of screening Rule 1 and Rule 2 was carried out to identify the links to be assessed in detail in this Transport, Accessibility and Movement Chapter. Presented in Table 5.18 for 2031 the Interim Assessment and Table 5.19 for 2038 future year assessment below.
- 5.8.3.4 Table 5.18 shows the changes to 24 key links in the area for 2031, showing their baseline value as well as with the baseline + development. The table also shows the change in HDV.

Table 5.18: 2031 Annual Average Daily Traffic (AADT) Flows and Percentage Increase in 2031 AADT Traffic flows plus the Development

Reference	Link	2031		2031		% Increase	% HDV Increase
		Base	Base	Base + Dev	Base + Dev		
1	A27 between A29 and A285 - TMU Site 5756/1	44370	3038	44942	3078	1%	1%
2	A27 between A29 near Bognor Regis	41141	2797	41874	2847	2%	2%

3	A27 - Bognor Regis and Arundel	30755	2322	31488	2377	2%	2%
4	A27 (W of Fontwell Roundabout)	36106	2298	36839	2343	2%	2%
5	A29 Westergate Street (North of Site Access)	13657	683	16476	824	21%	21%
6	Meadow Way	332	5	332	5	0%	0%
7	Ivy Lane	1521	0	1521	0	0%	0%
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	15468	1407	15743	1432	2%	2%
9	A29 Fontwell Avenue (North Memorial Roundabout)	15150	758	15262	763	1%	1%
10	A29 Nyton Road	23231	1337	23621	1359	2%	2%
11	B2233 Barnham Road	11207	294	11820	310	5%	6%
12	B2233 Nyton Road (South of A27)	11968	294	12650	311	6%	6%
13	B2233 Nyton Road (Between Oving Road and A29)	13900	365	14582	383	5%	5%
14	A29 Shripney Road	35443	709	36024	720	2%	2%
15	Oving Road	5317	76	5429	77	2%	2%
16	Hook Lane	3080	31	3080	31	0%	0%

17	Church Lane	866	17	866	17	0%	0%
18	A259 Rowan Way	13934	1182	13998	1187	0%	0%
19	A259 Charles Purley Way	18005	253	18117	255	1%	1%
20	A29 Westergate Street (South of Site Access)	13657	683	14619	713	7%	7%
21	Site Access/Pine Close	38	0	2703	27	>100%	>100%
22	Realigned A29	25800	356	25800	356	0%	0%
23	A29 East of Fontwell East Roundabout	19213	1489	19487	1510	1%	1%
24	Gladius Way	13803	480	13867	482	0%	0%

5.8.3.5 Table 5.19 below shows the changes to 24 key links in the area for 2038, showing their baseline value as well as with the baseline + development. The table also shows the change in HDV.

Table 5.19: 2038 Annual Average Daily Traffic (AADT) Flows and Percentage Increase in 2038 AADT Traffic flows plus the Development

Reference	Link	AADT		HDV		% Increase	HDV %
		2038 Baseline	2038 Baseline + Dev	2038 Baseline	2038 Baseline + Dev		
1	A27 between A29 and A285 - TMU Site 5756/1	46550	3187	47122	3227	1%	1%
2	A27 between A29 near Bognor Regis	43878	2983	44611	3032	2%	0%

3	A27 - Bognor Regis and Arundel	32264	2436	32997	2491	2%	0%
4	A27 (W of Fontwell Roundabout)	38148	2378	38881	2423	2%	0%
5	A29 Westergate Street (North of Site Access)	15440	772	17151	858	11%	11%
6	Meadow Way	348	5	348	5	0%	0%
7	Ivy Lane	1596	0	1596	0	0%	0%
8	A29 Fontwell Avenue (South of Fontwell West Roundabout)	16818	1528	17093	1553	2%	0%
9	A29 Fontwell Avenue (North Memorial Roundabout)	9475	202	9587	479	1%	1%
10	A29 Nyton Road	24518	1409	24908	1432	2%	0%
11	B2233 Barnham Road	11069	290	11682	306	6%	0%
12	B2233 Nyton Road (South of A27)	12093	297	12775	314	6%	0%
13	B2233 Nyton Road (Between	14517	381	15199	399	5%	0%

	Oving Road and A29)						
14	A29 Shripney Road	36118	722	36699	734	2%	0%
15	Oving Road	6113	85	6225	86	2%	0%
16	Hook Lane	5400	54	5400	54	0%	0%
17	Church Lane	956	19	956	19	0%	0%
18	A259 Rowan Way	14652	1242	14716	1248	0%	0%
19	A259 Charles Purley Way	17338	251	17450	252	1%	0%
20	A29 Westergate Street (South of Site Access)	14326	716	15288	764	7%	0%
21	Site Access/Pine Close	38	0	3756	38	>100%	>100%
22	Realigned A29	25800	258	25800	258	0%	0%
23	A29 East of Fontwell East Roundabout	20550	1283	20825	1302	1%	0%
24	Gladius Way	14486	504	14550	506	0%	0%
25	Realigned A29 (South of Site Access)	18151	643	18151	643	0%	0%

- 5.8.3.6 The links identified for the detailed assessment in this Transport, Accessibility and Movement Chapter are summarised in Table 5.20, along with the identification in which future year scenario they are considered as a result of meeting one of the screening rules set out earlier.

Table 5.20: Links taken forward for Assessment

Link	Road Name / Location	Future Year Assessment	
		2031	2039
5	A29 Westergate Street (north of site access)	16476	17151
21	Site Access/Pine Close	2703	3756

- 5.8.3.7 Following the IEMA guidance set out in Section 1.5, the only two link that has been identified for further assessment are the A29 Westergate Street (north of site access) and the Site Access/Pine Close.

- 5.8.3.8 The A29 Westergate Street (north of site access) shows an increase in traffic flow of 21%, as well as a 21% increase in HDV traffic. Due to the link being identified as a sensitive link in 5.5, anything over 10% is classed as a significant change which requires further analysis. The Site Access/Pine Close also shows a significant increase in traffic should the proposed development be constructed as a result of it being the sole access junction. This therefore requires consideration in mitigating any residual effects.

- 5.8.3.9 An analysis of the magnitude of change and overall significance of residual effects is shown below. This analysis has followed rules set out in Section 1-5 - Assessment Methodology, Table 5.6, showing the ratings for severity traffic delay, non-motorised user amenity, pedestrian delay, fear and intimidation, and road safety.

5.8.4 2031 Base + Development A29 Westergate Street (north of site access)

- 5.8.4.1 Table 5.21 outlines the effects to the A29 Westergate Street, in terms of severance, traffic delay, non-motorised user amenity, pedestrian delay, fear and intimidation, and road safety.

Table 5.21: Highway Link A29 Westergate Street – assessment of transport environmental effects 2031

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The proposed development results in a negligible magnitude of change to severance based upon a predicted traffic flow increase of 21%. Furthermore it is also noted that the provision of signalised pedestrian crossing facilities on all arms of the	Low Positive	Moderate (Significant)

	site provides a benefit to users wishing to cross the A29 by providing a safe and controlled method of crossing. The proposed development is therefore predicted to have a medium low magnitude of change, leading to a moderate positive effect of a permanent nature.		
Traffic delay	The proposed site access junction is forecast to operate within capacity in 2031 with average delay times of 50 seconds for the A29 northern approach (Table 7-26 of the TA). This is therefore considered to be a medium magnitude of change, resulting in a major adverse effect of a permanent nature. However, as the junction is not forecast to operate over capacity this is not deemed to be a significant environmental effect.	Medium	Major (Not Significant)
Non-motorised user amenity	The non-motorised user amenity will be impacted on the A29 north of the site as a result of the increase in traffic flows associated with the proposed development. Pedestrian delay will however be improved due to the provision of signal crossing facilities at the site access junction, noting there is another signalised crossing located 400m to the north. These are both categorised as a low magnitude of change resulting a Moderate effect of permanent nature.	Low	Moderate (Significant)
Pedestrian delay		Low Positive	Moderate (Significant)
Fear and intimidation	The estimated level of traffic results in a hazard score of 'small' in the base scenario, increasing to 'moderate' with the proposed development based on the criteria contained within Tables 5.1 and 5.2. This is categorised as a low magnitude of change. This results in a moderate	low	moderate (Significant)

	adverse effect of a permanent nature.		
Road Safety	Based upon the COBALT assessments the proposed development results in only a small increase in the number of expected accidents over the link, increasing from 0.78 to 0.93 per year. A negligible magnitude of change and high sensitivity result Negligible adverse effect of a permanent nature.	negligible	negligible (not significant)

- 5.8.4.2 Based on Table 5.21 the proposed development is predicted to lead to adverse significant effects on traffic delay, non-motorised user amenity and fear and intimidation and positive significant effects on severance and pedestrian delay

5.8.5 2031 Base + Development Pine Close / Site Access

- 5.8.5.1 Table 5.22 outlines the effects to the Pine Close / Site Access in terms of severance, traffic delay, non-motorised user amenity, pedestrian delay, fear and intimidation, and road safety.

Table 5.22: Highway Link Pine Close / Site Access – assessment of transport environmental effects 2031

Effect	Comment	Magnitude of change	Significance of residual effect
Severance	it is predicted that the proposed development will increase traffic flows on Pine Close by more than 100% as a result of it forming the main access to the development site. Whilst the provision of a signalised crossing at the site access junction will mitigate this impact to some degree, it is still considered that there will be a low magnitude of change in severance (downgraded from high due to the signal crossings). This	Low	moderate (Significant)

	results in a Moderate adverse effect of a permanent nature		
Traffic delay	The proposed site access junction is forecast to operate within capacity in 2031 with average delay times of 88-102 seconds for the site access approach (Table 7-26 of the TA). This is therefore considered to be a high magnitude of change, resulting in a major adverse effect of a permanent nature. However, as the junction is not forecast to operate over capacity this is not deemed to be a significant environmental effect.	High	Major (Not Significant)
Non-motorised user amenity	Traffic flow increases on the site access will negatively impact the amenity of non-motorised users whilst also delaying the ability to cross the road in comparison with the existing situation. These impacts will be mitigated to a degree by the provision pedestrian crossings at the site access, provision of a new footway on the northern side of Pine Close and closure of the existing Pine Close junction to allow only pedestrian and cycle access. Taking this into account, it is considered that the proposed development will have a low magnitude of change on both non-motorised user amenity and pedestrian delay. This leads to a Moderate adverse effect of a permanent nature.	Low	Moderate (Significant)
Pedestrian delay		Low	Moderate (Significant)
Fear and intimidation	The estimated level of traffic results in a hazard score of 'small' based on the criteria contained within Tables 5.1 and 5.2. As there is no step	Negligible	Negligible (Not Significant)

	change in this categorisation as a result of the proposed development the magnitude is negligible. This results in a negligible adverse effect of a permanent nature.		
Road Safety	Based on the COBALT assessments the proposed development results in only a slight increase in the typical number of accidents expected, increasing from 0.00 to 0.01 per year. This is considered to be a negligible magnitude of change resulting in a negligible adverse effect of a permanent nature.	Negligible	Negligible (Not Significant)

5.8.5.2 Table 5.22 has identified significant environmental effects for Pine Close where it provides a connection into the site related to severance, non-motorised user amenity and pedestrian delay.

5.8.6 2038 Base + Development A29 Westergate Street (north of site access)

5.8.6.1 Table 5.23 outlines the effects to the A29 Westergate Street (north of site access) for 2038 in terms of severance, traffic delay, pedestrian amenity, pedestrian delay, fear and intimidation, and accident and safety.

Table 5.23: Highway Link A29 Westergate Street (north of site access) 2038 – assessment of transport environmental effects

Effect	Comments	Magnitude of change	Significance of residual effect
Severance	The proposed development results in a negligible magnitude of change to severance based upon a predicted traffic flow increase of 11%. Furthermore it is also noted that the provision of signalised pedestrian crossing facilities on all arms of the site provides a benefit to users wishing to cross the A29 by providing a safe and controlled method of crossing. The proposed development is therefore predicted to have a medium low magnitude of change, leading to a moderate positive effect of a permanent nature.	Low Positive	Moderate (Significant)

Traffic delay	The proposed site access junction and is forecast to operate within capacity in 2031 with average delay times of 30-55 seconds for the A29 northern approach (Table 7-37 of the TA). This improvement from 2031 is associated with completion of the full realignment of the A29 and subsequent reduction in traffic flows on the Westergate Street. This is therefore considered to be a medium magnitude of change, resulting in a major adverse effect of a permanent nature. However, as the junction is not forecast to operate over capacity this is not deemed to be a significant environmental effect.	Medium	Major (Not Significant)
Non-motorised user amenity	The non-motorised user amenity will be impacted on the A29 north of the site as a result of the increase in traffic flows associated with the proposed development. Pedestrian delay will however be improved due the provision of signal crossing facilities at the site access junction, noting there is another signalised crossing located 400m to the north. These are both categorised as a low magnitude of change resulting a Moderate effect of permanent nature.	Low	Moderate (Significant)
Pedestrian delay		Low Positive	Moderate (Significant)
Fear and intimidation	The estimated level of traffic results in a hazard score of 'moderate' based on the criteria contained within Tables 5.1 and 5.2. As there is no step change in this categorisation as a result of the proposed development the magnitude is negligible. This results in a negligible adverse effect of a permanent nature.	negligible	negligible (not significant)
Road Safety	Based on the COBALT assessments the proposed development results in only a slight increase in the typical number of accidents expected, increasing from 0.88 to 0.97. This is considered to be a negligible magnitude of change resulting in a negligible adverse effect of a permanent nature.	negligible	negligible (not significant)

5.8.6.2 Table 5.23 has identified significant environmental effects for the A29 Westergate Street north of the site access related to severance, non-motorised user amenity and pedestrian delay.

5.8.7 2038 Base + Development Site Access/Pine Close

5.8.7.1 Table 5.24 outlines the effects to the Site Access / Pine Close for 2038 Base + Development, in terms of severance, traffic delay, pedestrian amenity, pedestrian delay, fear and intimidation, and accident and safety.

Table 5.24: Highway Link Site Access/ Pine Close 2038 – assessment of transport environmental effects

Effect	Comment	Magnitude of change	Significance of residual effect
Severance	it is predicted that the proposed development will increase traffic flows on Pine Close by more than 100% as a result of it forming the main access to the development site. Whilst the provision of a signalised crossing at the site access junction will mitigate this impact to some degree, it is still considered that there will be a low magnitude of change in severance (downgraded from high due to the signal crossings). This results in a Moderate adverse effect of a permanent nature	Low	moderate (Significant)
Traffic delay	The proposed site access junction is forecast to operate within capacity in 2031 with average delay times of 54-78 seconds for the site access approach (Table 7-37 of the TA). This improvement from 2031 is associated with completion of the full realignment of the A29 and subsequent reduction in traffic flows on the Westergate Street. This is therefore considered to be a medium magnitude of change, resulting in a major adverse effect of a permanent nature. However, as the junction is not forecast to operate over capacity	High	Major (Not Significant)

	this is not deemed to be a significant environmental effect.		
Non-motorised user amenity	Traffic flow increases on the site access will negatively impact the amenity of non-motorised users	Low	Moderate (Significant)
Pedestrian delay	whilst also delaying the ability to cross the road in comparison with the existing situation. These impacts will be mitigated to a degree by the provision pedestrian crossings at the site access, provision of a new footway on the northern side of Pine Close and closure of the existing Pine Close junction to allow only pedestrian and cycle access. Taking this into account, it is considered that the proposed development will have a low magnitude of change on both non-motorised user amenity and pedestrian delay. This leads to a Moderate adverse effect of a permanent nature.	Low	Moderate (Significant)
Fear and intimidation	The estimated level of traffic results in a hazard score of 'small' based on the criteria contained within Tables 5.1 and 5.2. As there is no step change in this categorisation as a result of the proposed development the magnitude is negligible. This results in a negligible adverse effect of a permanent nature.	Negligible	Negligible (Not Significant)
Road Safety	Based on the COBALT assessments the proposed development results in only a slight increase in the typical number of accidents expected, increasing from, increasing from 0.00 to 0.01 per year. This is considered to be a negligible magnitude of change resulting in a negligible adverse effect of a permanent nature.	Negligible	Negligible (Not Significant)

- 5.8.7.2 Table 5.24 has identified significant environmental effects for the Pine Close where it provides a connection into the site related to severance, non-motorised user amenity and pedestrian delay.

5.9 Mitigation

5.9.1 Construction Phase

- 5.9.1.1 Construction traffic is transitional, and any environmental effects are temporary. However, this does not obviate the need to identify suitable management practices and to ensure the programme limits the effects, where practicable.
- 5.9.1.2 Other than embedded mitigation, a Construction Traffic Management Plan (and subsequently CEMP), which seeks to reduce the impact of construction traffic on the highway network and transport network users, will be developed, with the requirement likely to be secured by a condition. This will include traffic routing, timing of vehicle movements and other controls (such as use of banksman) to ensure the safe movement of construction traffic to and from the site.

5.9.2 Operation Phase

- 5.9.2.1 The proposed development does provide mitigation for the significant effects presented in this chapter beyond those related to the delivery of the site access junction and associated improvement in pedestrian crossing facilities. Furthermore, as part of the proposed development, a number of existing PRoW and permissive paths that run through the site will be upgraded, thereby providing attractive and accessible walking and cycling routes for the community to use as alternatives to the A29.

5.9.3 Other Embedded Mitigation

- 5.9.3.1 As set out earlier in this Transport, Accessibility and Movement Chapter, the Proposed Development is accompanied by several supporting documents and strategies, all prepared in accordance with the latest guidance. These include the strategies set out in the TA and measures outlined in the Framework Travel Plan. These strategies aim to encourage and facilitate walking, cycling and use of public transport in preference of private car trips by providing connections to local facilities, thereby reducing the predicted level of traffic generated by the proposed development (as assessed within this ES chapter). Importantly, the proposed development also provides the western end of the East-West link road for the BEW strategic site. Until the full A29 realignment is complete, this bridge over the Lindsey Rife will act as a pedestrian, cycling and bus only link into wider strategic site, thereby prioritising trips by non-car modes. To facilitate trips by bicycle the proposed development also provided a segregated bidirectional cycle route alongside the East-West link-road.
- 5.9.3.2 It should be emphasised that the benefits of these supporting strategies and plans are not accounted for in the assessments for robustness. Therefore, they are considered mitigation against the effects of the Proposed Development in general.

5.10 Residual Effects

5.10.1 Construction Phase

5.10.1.1 As set out above, it is expected that the effects associated with the construction phase of the Proposed Development will be temporary, and no long-term environmental effects are expected. Table 5.25 provides a summary of mitigation that is predicted to be provided by the Construction Traffic Management Plan for the significant effects identified.

Table 5.25: Residual Effects During Construction

Effect	Link	Significance	Impact	Duration	Reversibility	Mitigation	Residual significance
Construction Phase							
Severance	Pine Close /	Moderate / Significant	Adverse	Short Term	Temporary	Controls contained within the CTMP such as use of banksman and provision of temporary crossing points will mitigate predicted effects.	Low / Not Significant
Non-motorised user amenity	Site Access	Major / Significant	Adverse	Short Term	Temporary		Moderate / Significant
Pedestrian delay		Moderate / Significant	Adverse	Short Term	Temporary		Low / Not Significant

5.10.2 Operation Phase

5.10.2.1 As noted in paragraph 5.9.3.1 mitigation during the operational stage of the development is provided in the form of embedded mitigation, through the provision of the site access junction and associated pedestrian crossing improvements, on-site walking / cycling links to local facilities and a Travel Plan to reduce car trips generated by the development. Therefore, whilst these strategies may lead to reductions in traffic flow over that assessed, it is not considered that these reductions would alter the conclusions. Therefore the significant effects identified in Table 5.21 to Table 5.24 remain valid.

5.11 Cumulative Effects

- 5.11.1 All assessments contained within this ES chapter are based upon traffic flows derived from CATM for 2031 and 2038. The data includes all the current development in the area, as well as expected development in relation to planned and/or committed schemes in the wider locality. Therefore, a cumulative effect of development in the area has already been completed as part of the assessments details in Section 5.8.
- 5.11.2 In addition to CATM, consideration was also given to other planned and/or committed schemes in the wider locality of the Proposed Development in order to determine their potential in-combination effects. A comprehensive review of the planning applications in the area and Local Plan allocations was undertaken to identify those schemes potentially having in-combination effects. Where required traffic flows related to these additional sites were added to traffic flows derived from CATM. As a result, any significant effects reported within this ES Chapter are also in-combination effects.
- 5.11.3 Section 7 of the Transport Assessment, which should be read alongside this ES chapter details the junction capacity assessments for each of the assessed junctions and scenarios.

5.12 Summary

- 5.12.1 In accordance with IEMA Guidelines, the following topics were considered as part of the assessment:
- severance;
 - driver delay;
 - pedestrian delay;
 - non motorised user amenity;
 - fear and intimidation; and
 - road safety.
- 5.12.2 A spreadsheet-based traffic flow model using traffic flows derived from CATM has been developed for the purposes of the assessment of the impacts associated with the Proposed Development informed the assessment set out in this Transport, Accessibility and Movement Chapter. The model includes highway networks in the vicinity of the Site as well as the wider area. This spreadsheet model provided predicted traffic flow impacts associated with the proposed development using trip generation calculations obtained from the TA.
- 5.12.3 The assessment identified that two links were required detailed analysis based on the criteria set out by the screening rules identified within the IEMA guidance. This detailed analysis has identified the anticipated

magnitude of impact and environmental resulting from construction and operation of the proposed development for the environmental topics listed above.

- 5.12.4 This assessment has concluded that significant environmental effects will be experienced by users of the A29 Westergate Street north of the site access and Pine Close where it forms a connection into the site access, as a result of the Proposed Development.
- 5.12.5 During the construction phase, it is predicted that there will be significant environmental effects associated with severance, non-motorised user amenity and pedestrian delay along Pine Close. Whilst controls contained within the Construction Traffic Management Plan will mitigate these effects to an extent, it is considered that a significant residual adverse effect related to non-motorised user amenity.
- 5.12.6 During the operational phase it is predicted that there will be a positive significant environmental effect on the A29 Westergate street related to severance and pedestrian delay as a result of the new pedestrian crossing facilities provided as part of the site access junction. In addition however, there it is also predicted that there will be significant adverse effects related to fear and intimidation (2031 only). On Pine Close it is predicted that there will be residual adverse significant effects related to severance and pedestrian delay.
- 5.12.7 The significance rating was determined with most effects being classed as negligible. Any effects which have a higher significance rating have proposed mitigation against them.
- 5.12.8 The summary of the effects of the Proposed Development is provided in
- 5.12.9 Table 5.26.

Table 5.26: Summary

Effect	Location	Significance	Impact	Duration	Permanence	Mitigation	Residual Significance
Construction Phase							
Severance	Pine Close / Site Access	Moderate / Significant	Adverse	Short Term	Temporary	controls contained within the Construction Traffic Management Plan	Low / Not Significant
Driver Delay		Negligible / Not Significant	Adverse	Short Term	Temporary		Negligible / Not Significant
Non-motorised user amenity		Major / Significant	Adverse	Short Term	Temporary		Moderate / Significant

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Road Safety		Negligible / Not Significant	Adverse	Long Term	Permanent		Negligible / Not Significant
Land east of Westergate							
Severance	A29	Moderate / Significant	Positive	Long Term	Permanent	n/a	Moderate / Significant
Driver Delay		Major / Not Significant	Adverse	Long Term	Permanent	travel plan measures and	Major / Not Significant
Non-motorised user amenity		Moderate / Significant	Adverse	Long Term	Permanent	pedestrian / cycle routes to encourage trips by non car modes	Moderate / Significant
Pedestrian delay		Moderate / Significant	Positive	Long Term	Permanent	n/a	Moderate / Significant
Fear and Intimidation		Negligible / Not Significant	Adverse	Long Term	Permanent	travel plan measures and pedestrian / cycle	Moderate / Significant
Road Safety		Negligible / Not Significant	Adverse	Long Term	Permanent	routes to encourage trips by non car modes	Negligible / Not Significant
Severance	Pine Close/	Moderate / Significant	Adverse	Long Term	Permanent	travel plan measures and	Moderate / Significant
Driver Delay	Site	Major / Not Significant	Adverse	Long Term	Permanent	pedestrian / cycle routes to	Major / Not Significant
Non-motorised user amenity	Access	Moderate / Significant	Adverse	Long Term	Permanent	encourage trips by non car modes	Moderate / Significant
Pedestrian delay		Moderate / Significant	Adverse	Long Term	Permanent		Moderate / Significant
Fear and Intimidation		Negligible / Not Significant	Adverse	Long Term	Permanent		Negligible / Not Significant
Road Safety		Negligible / Not Significant	Adverse	Long Term	Permanent		Negligible / Not Significant

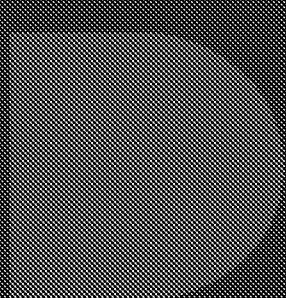
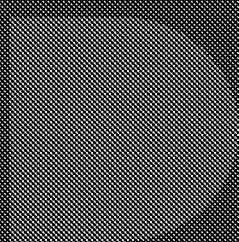
5.13 References

5.13.1 A list of the Transport chapter references are listed below:

- Arun Local Plan 2011 – 2031 (2018)
- Cutting Growth, Cutting Carbon: Making Sustainable Transport Happen (DFT, 2011)
- DFT Circular 02/2013, The Strategic Road Network and The Delivery of Sustainable Development (Updated December 2022)
- IEMA Guidelines: Environmental Assessment of Traffic and Movement (2023)
- Manual for Streets (DFT, 2007)
- National Planning Policy Framework, DCLG, March 2012 (Updated July 2021)
- West Sussex County Council Guidance on Parking at New Developments (2020)
- West Sussex Transport Plan 2022 to 2036 (2023)

6. Landscape & Visual Impact

- 6.1 Introduction
- 6.2 Background
- 6.3 Chapter Structure
- 6.4 Policy Context
- 6.5 Assessment Methodology
- 6.6 Baseline
- 6.7 Likely Significant Environmental Effects During Construction
- 6.8 Likely Significant Environmental Effects Post Construction
- 6.9 Mitigation
- 6.10 Residual Effects
- 6.11 Cumulative Effects
- 6.12 Summary
- 6.13 References
- 6.14 Glossary



6 Landscape and Visual Impact

6.1 Introduction

- 6.1.1 This chapter has been written by Paul Gibbs, Managing Director at David Jarvis Associates Limited with nearly 30 years' experience of LVIA and residential development at all scales and is informed and supported by a Landscape and Visual Impact Assessment (LVIA) which is provided in full in Appendix 6.1.

6.2 Background

- 6.2.1 The landscape and visual assessment considers landscape and visual matters as separate issues. Visual impacts relate to changes in views, whereas landscape impacts relate to physical changes to the landscape, that is, changes to landscape character, the historic landscape and landscape components such as trees, landform and watercourses.
- 6.2.2 Short and medium term effects are those that are likely to arise during the construction of the proposed development, long term effects are those that are likely to occur post-completion of the proposal. In general terms it is envisaged that short and medium term effects could arise from the commencement of the construction phase to development's completion whilst construction is anticipated to be ongoing, and long terms effects could arise upon the completion of the development. Impacts have been considered in Year 15 after completion to assess the effect of mitigation.

The Site

- 6.2.3 The site comprises a tapering an area of agricultural land subdivided into small irregular fields, and small areas of woodland bordering the edge of Westergate around St Richards Road and Westergate Street. There are well developed hedge and tree lines in parts of the site, particularly around field boundaries and where the land drops towards the Lidsey Rife. The site slopes gently eastwards for the most part with a marked change in level west of the Rife. The western boundary lies at approximately 9m Above Ordnance Datum (AOD), falling to approximately 4m AOD at the Rife. The site is centred on National Grid Reference (NGR) 494000,104700.
- 6.2.4 The site comprises an area of around 19ha and is defined along its eastern edge by the Lidsey Rife, by the railway line to the south and by the edge of Westergate to the west.
- 6.2.5 Vehicular access to the site is proposed via an new junction at Pine Close, which forms the access into the wider SC5 site east of the Rife.
- 6.2.6 The northern part half of the site is crossed by various public footpaths. There is currently no public access into the southern field.

Description of the surrounding area

- 6.2.7 The site forms part of the wider CS5 strategic development site. The landscape to the east and south east of the site is generally low lying and slightly domed, rising to approximately 9m AOD around New Barn, and feels reasonably well enclosed. The railway crosses the landscape to the south, sometimes on embankment. The landscape in this area is open, defined to the north by the edge of Eastergate and Barnham, with a cluster of buildings around St George's Church and Manor Farm to the north east.

The Scheme

- 6.2.8 The proposed development is shown in the parameter plans that accompany this application. The proposals comprise a hybrid application with construction of the western section of East/West Link Road with new access, road bridge and associated works provided in detail. Up to 400 dwellings with access and associated works are provided in outline with all other matters, namely layout, scale, appearance and landscaping reserved.

- 6.2.9 The key features of the proposals are as follows:

- Up to 400 dwellings
- A network of green corridors runs through the site that contains retained trees and hedgerows and attenuation basins.
- The boundary vegetation is to remain save for small sections removed to create the new access.
- Areas of natural play
- Additional boundary planting is proposed along the eastern boundary of the site
- Species-rich lowland meadow habitat to enhance biodiversity and capture carbon
- Increased public access and recreational value

Potential Cumulative Effects

- 6.2.10 The potential for cumulative effects with projects highlighted within the Scoping Opinion Response received from Arun District Council dated 21st November 2022 are assessed.

6.3 Chapter Structure

- 6.3.1 This chapter is structured to provide relevant policy context, a description of the landscape and visual baselines, followed by an assessment of the predicted landscape and visual effects during construction, at completion and at completion plus 15 years to demonstrate the effects of any mitigation proposed. Landscape and visual effects are considered separately.

6.4 Policy Context

National Planning Policy Framework (NPPF)

- 6.4.1 The National Planning Policy Framework (NPPF) was introduced in 2012, revised in 2019 and recently updated in 2023. It is the only national planning policy document in force and provides a comprehensive account of the Government's approach to planning policy.
- 6.4.2 At the heart of the NPPF is a presumption in favour of sustainable development. The natural and local environment is addressed under Section 15 'Conserving and Enhancing the Natural Environment'.
- 6.4.3 Paragraph 180 states that the overarching objective of planning policies and decisions is that they “*contribute to and enhance the natural and local environment by:*

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; ...

d) ...minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; and

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, taking into account relevant information such as river basin management plans...”

Local Planning Policy

- 6.4.4 The Arun District Council Local Plan 2011-2031 was adopted in 2018. It sets out the planning policies and land allocations to guide the future development of the district up to 2031. It includes policies on a wide range of topics such as housing, employment, services and facilities, and the natural environment.
- 6.4.5 The site falls under Policy H SP2c which is identified as the Barnham/Eastergate/Westergate Strategic Housing site for at least 2,300 dwellings. Of relevance, it requires that any proposals:

“a. Preserve the separate identities and avoid any further physical coalescence of the three villages of Barnham, Eastergate and Westergate through the delivery of green infrastructure. Eastergate and

Barnham should be protected from a continuous urban form / coalescence along the north and south aspects of the B2233,

b. the design of development and landscaping shall ensure that there is continuity between the existing landscape setting and villages,

c. the design and layout of the development shall take account of the location of the railway line crossing the site,

d. housing shall be designed around a Linear Park which follows along the Lidsey Rife,

e. A comprehensive strategy for surface water management will be developed in line with specific recommendations for this locality, in the Arun Strategic Surface Water Management Study;

f. significant views to and from the South Downs shall be incorporated within the site”

- 6.4.6 The following policies, contained within the Arun District Local Plan adopted in September 2018, are considered pertinent to the proposed development.

- 6.4.7 Policy GI SP1: Green Infrastructure and development

“The existing Green Infrastructure Network, as shown on the Green Network Maps for each parish and town, must be considered at an early stage of the design process for all major development proposals.

All major development must be designed to protect and enhance existing Green Infrastructure assets, and the connections between them, in order to ensure a joined up Green Infrastructure Network. The Green Infrastructure Network must be protected from light pollution to ensure that areas defined by their tranquillity are protected from the negative effects of light in development.

Where compatible with nature conservation objectives, development proposals must identify opportunities to connect existing Green Infrastructure assets with the coast, the South Downs National Park or to the District’s inland villages. Opportunities to enhance the network should take account of the multiple functions of Green Infrastructure assets and should be based upon those opportunities set out in the supporting text”

- 6.4.8 Policy LAN/DM1: Protection of landscape character

“Development within the setting of the South Downs National Park must have special regard to the conservation of that setting, including views into and out of the Park, and will not be permitted where

there would be harmful effects on these considerations. Development throughout the plan area should respect the particular characteristics and natural features of the relevant landscape character areas and seek, wherever possible, to reinforce or repair the character of those areas. The historic character and development pattern of settlements within the District should be respected, taking into account their distinct identity and setting”

6.4.9 Policy ORS/DM1: Open space, sport and recreation

“2. Open space, sport and recreation in new developments

Housing and, where viable, commercial development will be required to contribute towards:

a. Open space provision in accordance with guidance set out in the current Open Space Study In some parts of the District open space provision is identified as being sufficient in terms of quantity. Therefore, provision of new open space is not deemed necessary but what is needed is to seek contributions for quality improvements and/or new offsite provision in order to address any future demand. For larger scale developments, the quantity standards should be used to help determine the requirements for open space provision as part of that development.

b. Playing pitch provision in accordance with guidance set out in the Playing Pitch Strategy. This will include improvements to existing provision to increase playing capacity and providing hubs of new pitches.

c. Indoor sport and leisure facilities through financial contributions in accordance with guidance set out in the Indoor Sport and Leisure Facilities Strategy which identifies a need for a new leisure centre in the West of the District.

d. Strategic projects identified in the Leisure and Cultural Strategy...

4. Quality expectations

Developments with respect to all of the above shall have regard to the 'Secured by Design' guidance documents and shall also be consistent with all other Local Plan policies.”

6.4.10 Policy ENV/SP1: Natural Environment

“Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through

policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 17.1-17.7 that are recognised for the species and habitats contained within them.”

6.5 Assessment Methodology

6.5.1 Please refer to Appendix 2 of the LVIA for the Assessment Methodology.

6.5.2 The methodology used is informed by Guidance for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3).

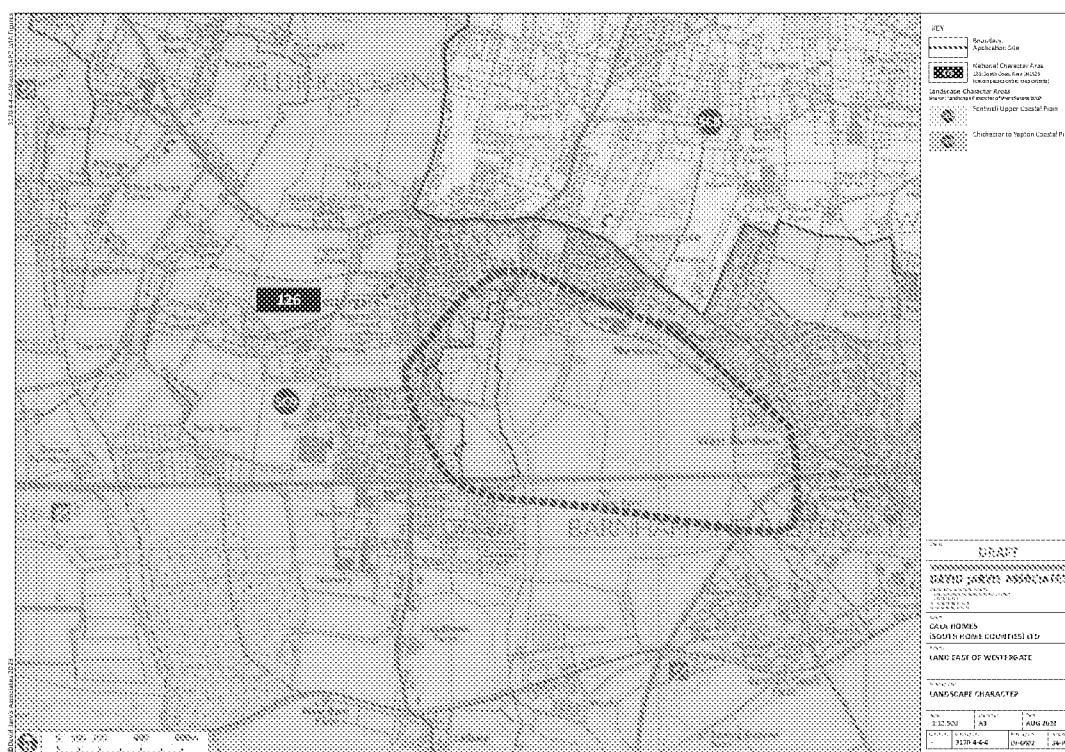
6.6 Baseline

Published Landscape Character

6.6.1 National Landscape Character

6.6.1.1 The landscape character covering the site and the surrounding area is provided in Figure 6.1. Further details descriptions for the character areas identified below are provided at Appendix 4 of the appended LVIA. The site is located within National Character Area (NCA) 126 – South Coast Plain . This NCA covers a sweep of the South Coast from Netley in the west to Portslade in the east and includes the settlements of Portsmouth, Chichester and Worthing, and is bounded to the north by the South Downs.

Figure 6.3: Landscape Character (LV-0002)



6.6.1.2 The key characteristics of NCA 126 are listed below:

- *"The plain slopes gently southwards towards the coast. From the coastal plain edge there are long views towards the sea and the Isle of Wight beyond.*
- *The underlying geology of flinty marine and valley gravels extends several miles inland to the dip slope of the South Downs and the South Hampshire Lowlands. This gives rise to deep and well-drained high quality soils.*
- *In places, streams and rivers flow south from the higher land of the Downs to the sea.*
- *Coastal inlets and 'harbours' contain a diverse landscape of narrow tidal creeks, mudflats, shingle beaches, dunes, grazing marshes and paddocks. These include the internationally important Chichester, Langstone, Portsmouth and Pagham harbours, the Hamble Estuary and the recent coastal realignment site at Medmerry between Chichester Harbour and Selsey.*
- *There are stretches of farmed land between developed areas, often with large arable fields defined by low hedges or ditches.*
- *There are isolated remnants of coastal heath in the west.*
- *Sand dune grasses and intertidal marsh communities are characteristic of the coastline, while small areas of species-rich meadow remain inland.*
- *The coastline provides feeding grounds for internationally protected populations of overwintering waders and wildfowl and is also extensively used for recreation.*

- *Along the exposed, open coastal plain and shoreline, tree cover is limited to isolated wind-sculpted woodlands and shelterbelts.*
- *The area has significant urban development, with settlements along the coastline dominated by the Portsmouth conurbation, suburban villages and seaside towns including Bognor Regis, Littlehampton and Worthing linked by major road and rail systems.*
- *Historic fortifications along the coast include the Roman fort at Portchester and 19th-century defences and later naval installations built to protect the Portsmouth naval dockyard."*

6.6.2 Local Character Assessment

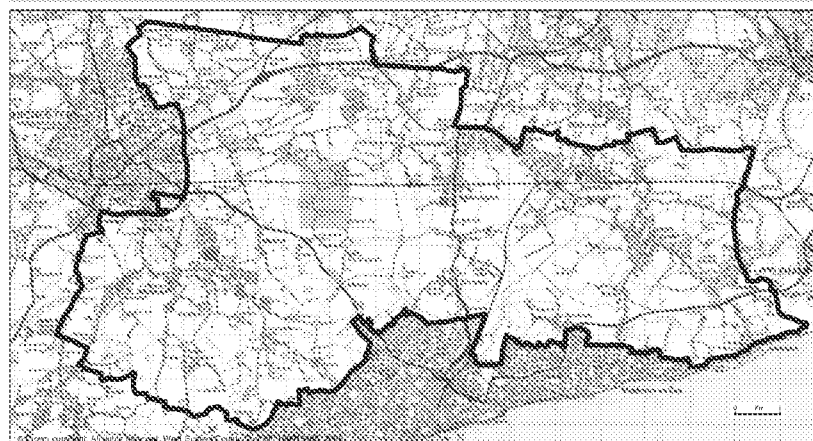
6.6.2.1 The site falls within Landscape Character Area SC9 Chichester to Yapton Coastal Plain (Figure 6.2) .

Figure 6.2: Landscape Character Area SC9 Chichester to Yapton Coastal Plain

Overall Character

This Character Area extends from Chichester in the west to the edge of the Arun Valley in the east, and around Bognor Regis to the south. Over time a large part of this area has been reclaimed from the sea, and remains below the current high spring tide level. It comprises a mainly flat, open landscape crossed by meandering rifes. Dominated by highly productive arable fields and modern farm buildings, it has a fragmented hedgerow and hedgerow tree pattern. The spire of Chichester Cathedral is a widely visible feature. Rows of large light reflecting glasshouses, equestrian facilities, horse paddocks and industrial buildings, for instance in the Ford and Tangmere areas, are strong suburban elements. Where these occur, they create visual confusion and poor definition between town and countryside, and erode distinctive landscape character. Major suburban settlements in the area are Tangmere, Barnham, Yapton, and Westergate. In contrast, there are areas of a smaller scale, more varied rural landscape with quiet hamlets and traditional villages enclosed by small pastures.

Key Characteristics	Key Features
• A mainly flat, open landscape crossed by meandering rifes. • Dominated by highly productive arable fields and modern farm buildings. • A fragmented hedgerow and hedgerow tree pattern. • The spire of Chichester Cathedral is a widely visible feature. • Rows of large light reflecting glasshouses, equestrian facilities, horse paddocks and industrial buildings, for instance in the Ford and Tangmere areas, are strong suburban elements. • Where these occur, they create visual confusion and poor definition between town and countryside, and erode distinctive landscape character. • Major suburban settlements in the area are Tangmere, Barnham, Yapton, and Westergate. • In contrast, there are areas of a smaller scale, more varied rural landscape with quiet hamlets and traditional villages enclosed by small pastures.	• The area is mainly flat, open landscape crossed by meandering rifes. • The area is dominated by highly productive arable fields and modern farm buildings. • The area has a fragmented hedgerow and hedgerow tree pattern. • The spire of Chichester Cathedral is a widely visible feature. • Rows of large light reflecting glasshouses, equestrian facilities, horse paddocks and industrial buildings, for instance in the Ford and Tangmere areas, are strong suburban elements. • Where these occur, they create visual confusion and poor definition between town and countryside, and erode distinctive landscape character. • Major suburban settlements in the area are Tangmere, Barnham, Yapton, and Westergate. • In contrast, there are areas of a smaller scale, more varied rural landscape with quiet hamlets and traditional villages enclosed by small pastures.

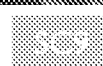
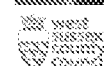
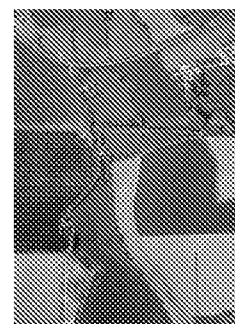


THE WEST SUSSEX LANDSCAPE Land Management Guidelines

Sheet SC9

Chichester to Yapton Coastal Plain South Coast Plain

The area covered by the Sheet is defined (from
Chichester to Bognor Regis) as the Landscape Character Area
as defined in the unpublished 'West Sussex Landscape
Character Assessment' (November 2003).



6.6.2.2 LCA SC9 Chichester to Yapton Coastal Plain is described as *"a mainly flat, open landscape crossed by meandering rifes. Dominated by highly productive arable fields and modern farm buildings, it has a fragmented hedgerow and hedgerow tree pattern. The spire of Chichester Cathedral is a widely visible feature. Rows of large light reflecting glasshouses, equestrian facilities, horse paddocks and industrial buildings, for instance in the Ford and Tangmere areas, are strong suburban elements. Where these occur, they create visual confusion and poor definition between town and countryside, and erode distinctive landscape character. Major suburban settlements in the area are Tangmere, Barnham, Yapton, and*

Westergate. In contrast, there are areas of a smaller scale, more varied rural landscape with quiet hamlets and traditional villages enclosed by small pastures.”

6.6.2.3 The key characteristics of LCA SC9 are defined as:

- *“Low lying flat open landscape.*
- *Meandering rife and straight drainage ditch systems, with associated unimproved grassland and edged by reed beds.*
- *A low density of hedgerows and hedgerow trees with occasional shelterbelts.*
- *Large-scale arable farming and market gardening. Extensive farms with both traditional and modern farm buildings and silos.*
- *Clusters of glasshouses.*
- *Scattered, historically nucleated villages with mixed building materials of flint, brick, half timber and stone.*
- *Large farmsteads along roads, and on dead-end tracks.*
- *Long views to Arundel, the Downs and to the distinctive spire of Chichester Cathedral.*
- *The relatively open character of much of the area allows long views so that village church towers are important landmarks in views.*
- *Frequent urban fringe influences of horse paddocks, light industry and disused airfields, with busy minor and major roads.*
- *The urban fringes associated with Bognor are particularly obvious, with sporadic urban development in suburban settlements of Tangmere, Barnham, Yapton, and Westergate.*
- *Large gravel pit lakes around the edge of Chichester.*
- *Few trees or hedgerows, partly as a result of Dutch Elm Disease, from the 1970s and the Great Storm of 1987 and overall high quality agricultural land, although, where they do exist, they form prominent features.*
- *Light industry in the countryside at Ford and Tangmere.”*

6.6.2.4 The Specific Landscape Sensitivities are identified as:

- Key views to the South Downs, Chichester Cathedral and Arundel.
- Fragmentation and loss of hedgerows and connections between hedgerow and woodland.
- Replacement of mature treescape.
- Changes in drainage patterns.
- Industry in the countryside associated with horticulture and light industry, resulting in large clusters of glasshouses and industrial buildings.
- Loss of archaeological remains to ploughing.
- Development on settlement edges of Bognor and suburban settlements of Tangmere, Barnham, Yapton and Westergate.

- Loss of distinction between different settlements due to urban expansion.
- Changes in transport infrastructure due to urban development pressures.
- Managed retreat of the coastline may be particularly influential in the future, providing opportunities for the creation of new coastal and inter-tidal habitats, and could result in a more naturally functioning landscape.

6.6.2.5 The Specific Landscape Guidelines are identified as:

- Conserve the significant views to Chichester Cathedral and the South Downs.
- Create a new, large scale tree and hedgerow framework which complements the open intensively farmed landscape, whilst maintaining significant views of Chichester Cathedral, the South Downs and local features.
- Maintain and strengthen field boundaries such as hedgerows and shelterbelts.
- Link up existing remnant hedgerows and tree lines to re-establish coherent field boundaries and wildlife corridors.
- Encourage a full tree survey of the area with a view to conserving and managing existing feature tree groups and individuals.
- Encourage and promote land management schemes to increase species rich grassland areas.
- Promote management and establishment of grassland regimes of grazing, hay cutting and silage.
- Establish landscape management plans for urban edges, notably Bognor Regis, to enhance the distinction between the urban and rural landscape.
- Restore and strengthen the landscape of the gaps between settlements.
- Encourage landscape enhancements around villages and on their approaches.
- Establish new vegetation features by the planting of hedgerows and tree clumps in field corners and along roadsides, especially those approaching settlements.
- Encourage the planting of shelter belts around horse paddocks, using native species, to give visual and wildlife benefits.
- Promote sympathetic design of new road schemes, particularly associated with transport infrastructure for Bognor Regis.
- Encourage the production of a colour and design study for new and existing agricultural and industrial buildings.
- Encourage bold tree planting associated with large agricultural buildings, glasshouses and industrial buildings to attempt to assimilate them into the landscape more satisfactorily.
- Restrict extensive areas of tree planting to poorer quality agricultural land.
- Encourage the replacement or restoration of derelict glasshouses where these appear detrimental to the landscape.
- Maintain and enhance the landscape and biodiversity of rifes and other existing habitats. Reprofile banks and encourage more diverse flora by lengthening clearance cycles.
- Enhance the visual prominence of rifes through the establishment of waterside vegetation features.

- Maintain, restore and enhance floodplain woodland and associated species, including native black poplar, where appropriate.

6.6.2.6 No assessment of sensitivity is made within the LCA. For the purposes of this assessment the landscape character of the study area is assessed as being of medium sensitivity as a result of being typical of the wider LCA and not containing any features that differentiate it as special or of possessing a particular quality.

6.6.3 Landscape Elements and Features

6.6.3.1 The site comprises a tapering area of agricultural land subdivided into small irregular fields, and small areas of woodland bordering the edge of Westergate around St Richards Road and Westergate Street. There are well developed hedge and tree lines in parts of the site, particularly around field boundaries and where the land drops towards the Lidsey Rife. The site slopes gently eastwards for the most part with a marked change in level west of the Rife.

6.6.3.2 Trees within the site are subject to TPO A-2-16.

6.6.4 Landscape Value

6.6.4.1 Landscape value relates to the value or importance society attaches to a landscape or view, which expresses national or local consensus and because of its quality, special qualities, cultural associations or ecological status. IEMA/LI guidance identifies a number of reasons why a landscape may be valued:

- **landscape condition:** a measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements;
- **scenic quality:** the term used to describe landscapes that appeal primarily to the visual senses;
- **rarity:** the presence of rare features or elements in the landscape, or the presence of a rare landscape character type;
- **representativeness:** whether the landscape contains a particular character and/or features or elements which are considered particularly important examples;
- **conservation interests:** the presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right;
- **recreation value:** evidence that the landscape is valued for recreational activity where experience of the landscape is important;
- **perceptual aspects:** a landscape may be valued for its perceptual qualities, notably wildness and/or tranquillity.
- **associations:** some landscapes are associated with particular people, such as artists or writers, or events in history that contribute to perceptions of the natural beauty of the area.

6.6.4.2 Assessment of landscape value has been based on consideration of:

- landscape designation i.e. Area of Outstanding Natural Beauty (AONB);
- nature conservation designation i.e. Site of Special Scientific Interest (SSSI);
- published literature relating to local cultural heritage, recreation and tourism;
- published landscape assessment; and
- the inter-relationship of the above.

6.6.5 Local Landscape Condition

6.6.5.1 The landscape condition within the site is generally high with a well defined and intact network of hedgerows, tree lines and good specimen trees. Beyond the site the landscape condition of the study area is medium being intensively farmed.

6.6.6 Scenic Quality

6.6.6.1 Scenic quality within the site is medium, it benefits from a high percentage of mature trees, and well defined boundaries. Beyond the site the scenic quality of the study area is medium being intensively farmed with few features.

6.6.7 Landscape Designations

6.6.7.1 The site is not subject to any statutory or non-statutory landscape designations.

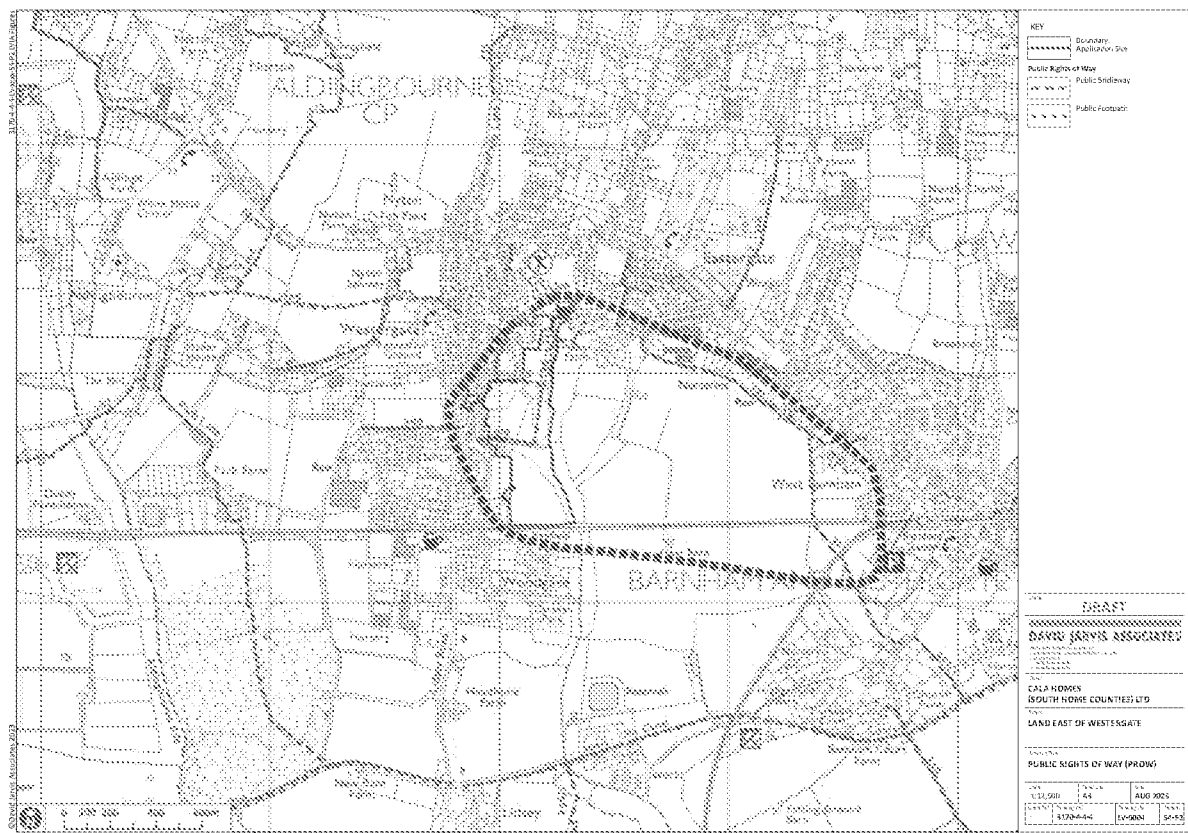
6.6.8 Cultural Heritage

6.6.8.1 Eastergate Conservation Area lies to the north east of the application site. It contains a cluster of Grade 2 and Grade 2* Listed Buildings, particularly St George's Church and Manor Farm, refer to Figure 6.3.

6.6.9.1 There are no nature conservation assets by designation on the site or within the study area.

6.6.10.1 There are a number of PRoW within the application site and the study area, shown on Figure 6.4. Of most relevance are Footpaths 296, 297, 298, 300 and 317, and 321 to the west.

Figure 6.4: Public Rights of Way (PROW) (LV-0004)



6.6.11 Tranquillity

6.6.11.1 The field work established that tranquillity in the vicinity of the site was reasonably high and only intermittently broken by the sound of traffic on the local road network.

6.6.12 Rarity Value

6.6.12.1 The site and its immediate surroundings are typical and representative of the local landscape and not considered to be particularly rare.

6.6.13 Landscape Receptors

6.6.13.1 The area is perceived as both a living and working landscape comprising agricultural farmland traversed by major and minor transport corridors and PROW.

6.6.13.2 For the purposes of assessing landscape receptor sensitivity, a judgement needs to be made on the relative value or importance to society of its various aspects or components. This is a complex task as the landscape is valuable to people in different ways hence only broad judgements can be made. Identified sensitive receptors described above are summarised in LVIA Table 6.1 together with an assessment of value, susceptibility, sensitivity and rationale for the judgement.

Table 6.1: Landscape Receptor Sensitivity (extracted from LVIA)

Receptor	Susceptibility	Value	Sensitivity	Rationale
Landscape Character				
Landscape Character of the Site	Medium	Medium	Medium	Undesignated landscape
SC9 Chichester to Yapton Coastal Plain LCA	Medium	Medium	Medium	Does not form part of any statutory landscape designation
Landscape Elements and Features				
Trees and hedgerows	Medium	Medium	Medium	Common feature in the wider landscape
Landscape Value				
Local Landscape Condition	Medium	Medium	Medium	Good condition on site, medium condition in wider area
Scenic Quality	Medium	Medium	Medium	Good scenic quality on site, medium condition in wider area
Cultural Heritage	High	High	High	Conservation Area and Listed Buildings
Leisure and Tourism	Low	Medium	Medium – Low	Local PROW
Perceptual Aspects				
Tranquillity	Medium	Medium	Medium	Reduced by the presence of local roads

6.6.14 Summary of landscape sensitivity

- 6.6.14.1 The site itself is considered to be of medium – high landscape value, with medium susceptibility, resulting in a **medium – high** sensitivity. The study area is considered to be relatively uniform and possessing some heritage assets and is therefore considered to be of medium value, with medium susceptibility, resulting in a **medium** sensitivity.

6.6.15 Visual Receptors

6.6.15.1 Three categories of Visual Receptor have been identified within the study area. These are:

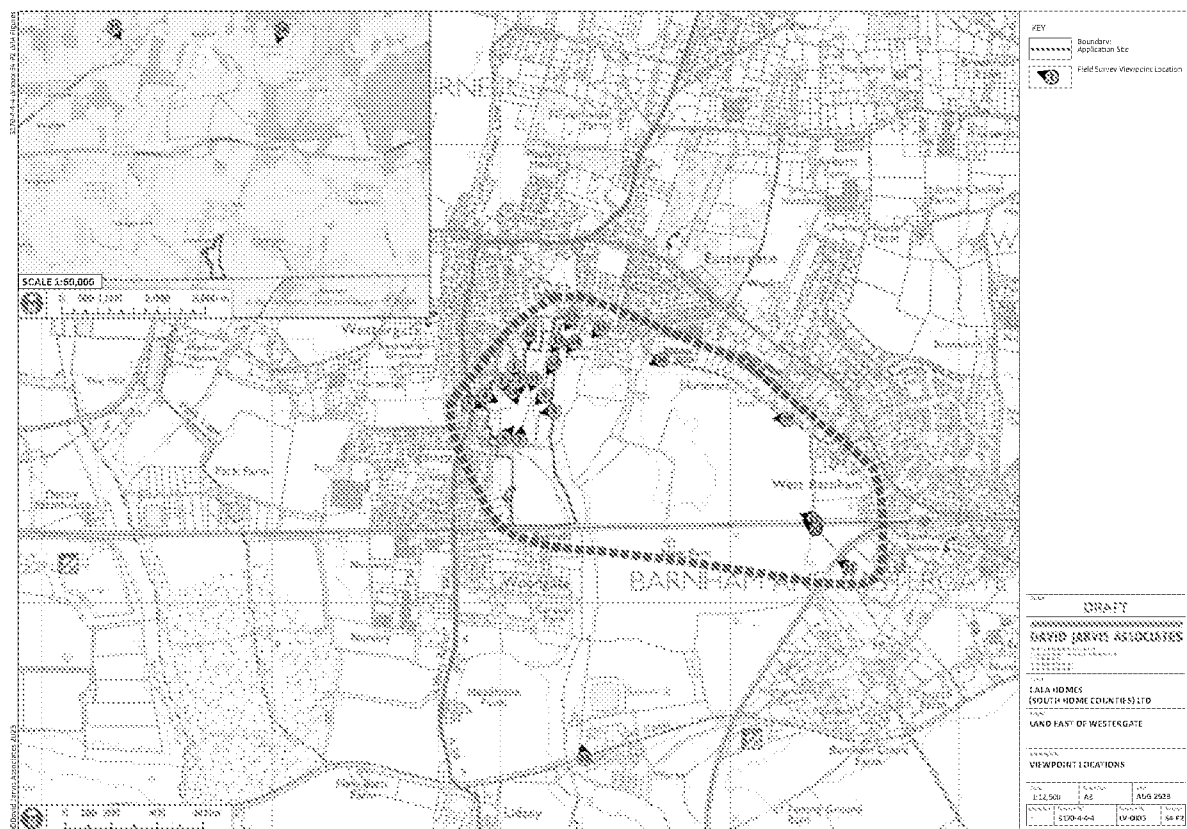
- Occupiers of Residential dwellings
- Users of Public Rights of Way / Public spaces / landmarks
- Users of roads

6.6.15.2 People occupied at their place of work are considered to be least likely to be affected by development and have generally been included as low sensitivity receptors.

6.6.15.3 Where there is more than one category of potential receptor for a viewpoint, the higher sensitivity receptor has been selected.

6.6.15.4 Locations of sensitive receptor viewpoints are shown in Figure 6.5. These represent both the receptor categories and at locations where it anticipated effects would be greatest. A photographic record of the broad extents of visibility is provided at LVIA Appendix 3.

Figure 6.5: Viewpoint Locations (LV-0005)



6.6.15.5 Receptor sensitivity is described in LVIA Table 6.2. The sensitivity of visual receptors varies according to category and the context of the view as described above. In broad terms the sensitivity of road users is influenced to a greater or lesser extent by the presence of the existing quarry.

Table 6.2: Selected Representative Visual Receptors (Extracted from LVIA)

Reference	Distance to application boundary	Receptor and location	Susceptibility	Value	Sensitivity
Occupiers of Residential properties					
VP 1	45m	St Richards Rd	High	Low	Medium
VP 5	Within site	Intersection of PRoW 298 with Westergate St	High	Low	Medium
VP 18	55m	Ivy Lane	High	Low	Medium
Users of Public Rights of Way / Public spaces / Landmarks					
VP 2	Boundary	Middle of PRoW - Footpath 298	High	Low	Medium
VP 3	Boundary	Intersection of PRoWs 298 and 297	High	Low	Medium
VP 4	Boundary	West of PRoW - Footpath 298	High	Low	Medium
VP 5	Within site	Intersection of PRoW 298 with Westergate St	High	Low	Medium
VP 6	Within site	PRoW - Footpath 300	High	Low	Medium
VP 7	Within site	Intersection of PRoW - Footpath 300 and north-south hedgerow	High	Low	Medium
VP 8	Within site	Eastern boundary of the application site	High	Low	Medium
VP 9	Within site	Intersection of PRoW 296 with unidentified path.	High	Low	Medium
VP 10	Within site	Unidentified path within site. South of PRoW 298.	High	Low	Medium
VP 11	Within site	East of PRoW - Footpath 298	High	Low	Medium
VP 12	Within site	Eastern boundary of the site	High	Low	Medium
VP 13	Within site	Between PRoW 296 and 317	High	Low	Medium
VP 14	70m	PRoW 296, on the south east corner of Eastergate Primary school's boundary.	High	Low	Medium
VP 15	155m	Church lane, north of Manor Farm	High	Medium	Medium - high
VP 16	450m	PRoW - Footpath 321. On the southwest corner of Fleurie Nursery	High	Low	Medium

Reference	Distance to application boundary	Receptor and location	Susceptibility	Value	Sensitivity
VP 17	Boundary	North East corner of the application site's boundary	High	Low	Medium
VP 19	1km	PRoW - Footpath 321. South of Elm Grove South	High	Low	Medium
VP 20	1km	Northern intersection of PRoW 323 with the railway	High	Low	Medium
VP 21	1.2km	PRoW - Footpath 323	High	Low	Medium
VP 22	1km	PRoW - Footpath 323	High	Low	Medium
VP 23	1km	PRoW - Footpath 200_1. On the South west corner of Lidsey Oil Field	High	Low	Medium
VP 24	4.5km	Nore Folly	High	High	High
VP 25	4.9km	Halnaker Windmill	High	High	High
Users of Local Roads					
VP 1	45m	St Richards Rd	Medium	Low	Medium/Low
VP 5	Within site	Intersection of PRoW 298 with Westergate St	Medium	Low	Medium/Low

6.6.16 Consultation

- 6.6.16.1 The location of the viewpoints and referenced in table 10.1 used were agreed with Sue Howell, Leisure and Landscape Officer at Arun District Council.

6.6.17 Field Assessment

- 6.6.17.1 A visual assessment of the site and its surroundings was carried out in April 2023 and August 2023 for VP 25. The visual assessment was initially based on a desktop analysis of Ordnance Survey (OS) mapping of the application site and the surrounding area.
- 6.6.17.2 This analysis was subsequently reviewed and refined during the field survey where views were captured from publicly accessible locations.
- 6.6.17.3 A total of 25 locations were selected and used as representative viewpoints. These were points both within the site and the surrounding landscape with potential views. They represent a range of potential visual receptors.
- 6.6.17.4 The field survey photographic record is provided at LVIA Appendix 3 and a Viewpoint Location Plan is provided in Figure 6.5.

6.6.18 Limitations

- 6.6.18.1 With the exception of VP25 from Halnaker Windmill, the field survey was carried out with trees, hedgerows and other vegetation generally absent of leaf partially presenting a worst-case scenario with regards to views towards the site. VP25 was added following consultation with Sue Powell and taken in August 2023. Views are likely to diminish during the summer when trees, hedgerows and other vegetation are in full leaf.
- 6.6.18.2 Although every effort has been made to include viewpoints in sensitive locations and locations from which the proposed development may be most visible, not all public viewpoints from which the development would be seen have necessarily been included in the assessment. No private residences or land has been accessed during the assessment.
- 6.6.18.3 It should be noted that the assessment provided is based on the maximum building envelop to be permitted at the outline stage based on the submitted parameter plans and in reality, the scheme as presented at the Reserved Matters stage will provide a much more articulated development. The assessment is therefore robust.

6.6.19 Visual Susceptibility

- 6.6.19.1 The degree by which a visual receptor is judged to be sensitive however also depends on the actual quality of the existing view and its susceptibility to change. Accordingly, when the sensitivity to the change actually being proposed is assessed, matters such as the context and extent of existing view as well as the proximity of the receptor to the proposed works need to be considered.

6.6.20 Visual Value

- 6.6.20.1 In order to determine the sensitivity of representative viewpoints the value of each view should be established. Viewpoints are valued in different ways depending upon the expectations of the viewer. The LI/IEMA guidelines currently provide examples of broad categories including recreation, residence, employment or passing through on roads or other modes of transport. The guidelines stress that these are only examples and that every project will require its own set of criteria and thresholds.
- 6.6.20.2 Visual receptor value criteria are set out in the Methodology in LVIA Appendix 2.

6.6.21 Visual Sensitivity

- 6.6.21.1 To determine the sensitivity of the representative visual receptors the value of each should be considered in relation to its susceptibility. The sensitivity matrix and sensitivity criteria are set out in the Methodology in LVIA Appendix 2. The sensitivity of each representative viewpoint is shown in Table 6.2.
- 6.6.21.2 The site is reasonably well contained within the landscape. Visibility is limited by residential properties to the west and north. The land to the east is gently rolling with some visual cut off of longer distance views toward Barnham. The study area is closely associated with the viewpoints, with visibility reducing to the east and

south. The two longer distance views at Nore Folly and Halnaker Windmill are sufficiently distant that the site is difficult to identify.

6.7 Likely Significant Environmental Effects During Construction

- 6.7.1 Overall, it is considered that there would be a moderate adverse effect on landscape receptors arising from the construction phase of the proposed development. This effect is localised and focused principally on the site itself and immediate environs within approximately 500m of the site boundary.
- 6.7.2 For the purposes of this assessment, the midpoint of the construction phase is assessed. This assumes that the northern part of the site would be complete, and that the triangular field to the south would remain undeveloped.
- 6.7.3 A summary of the predicted effects on visual amenity as a result of the proposed development during construction is shown in Table 6.3.

Table 6.3: Predicted Effects on Visual Amenity During Construction (extracted from LVIA)

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
Occupiers of Residential properties						
VP 1	45m	St Richards Rd	Medium	Substantial - moderate	Major-Moderate	Adverse
VP 5	Within site	Intersection of PRow 298 with Westergate St	Medium	Moderate	Moderate	Adverse
VP 18	55m	Ivy Lane	Medium	Medium	Moderate	Moderate
VP 2	Boundary	Middle of PRow - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 3	Boundary	Intersection of PRow 298 and 297	Medium	Substantial	Major-Moderate	Adverse
VP 4	Boundary	West of PRow - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 5	Within site	Intersection of PRow 298 with Westergate St	Medium	Moderate	Moderate	Adverse

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
VP 6	Within site	PRoW - Footpath 300	Medium	Substantial	Major-Moderate	Adverse
VP 7	Within site	Intersection of PRoW - Footpath 300 and north-south hedgerow	Medium	Substantial	Major-Moderate	Adverse
VP 8	Within site	Eastern boundary of the application site	Medium	Substantial	Major-Moderate	Adverse
VP 9	Within site	Intersection of PRoW 296 with unidentified path.	Medium	Substantial	Major-Moderate	Adverse
VP 10	Within site	Unidentified path within site. South of PRoW 298.	Medium	Substantial	Major-Moderate	Adverse
VP 11	Within site	East of PRoW - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 12	Within site	Eastern boundary of the site	Medium	Substantial	Major-Moderate	Adverse
VP 13	Within site	Between PRoW 296 and 317	Medium	Moderate	Moderate	Adverse
VP 14	70m	PRoW 296, on the south east corner of Eastergate Primary school's boundary.	Medium	Moderate	Moderate	Adverse
VP 15	155m	Church lane, north of Manor Farm	Medium - high	Slight	Moderate	Adverse
VP 16	450m	PRoW - Footpath 321. On the southwest corner of Fleurie Nursery	Medium	Moderate	Moderate	Adverse
VP 17	Boundary	North East corner of the application site's boundary	Medium	-	-	-

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
VP 19	1km	PRoW - Footpath 321. South of Elm Grove South	Medium	Slight	Moderate - minor	Adverse
VP 20	1km	Northern intersection of PRoW 323 with the railway	Medium	Negligible	Minor	Adverse
VP 21	1.2km	PRoW - Footpath 323	Medium	Negligible	Minor	Adverse
VP 22	1km	PRoW - Footpath 323	Medium	Negligible	Minor	Adverse
VP 23	1km	PRoW - Footpath 200_1. On the South west corner of Lidsey Oil Field	Medium	-	-	-
VP 24	4.5km	Nore Folly	High	-	-	-
VP 25	4.9km	Halnaker Windmill	High	-	-	-
VP 1	45m	St Richards Rd	Medium/Low	Substantial - moderate	Moderate	Adverse
VP 5	Within site	Intersection of PRoW 298 with Westergate St	Medium/Low	Moderate	Moderate	Adverse

- 6.7.4 There would be no visibility of the development during construction and therefore no effect on visual amenity from 4 of the 25 viewpoints assessed. These are all outside the boundary the site.
- 6.7.5 The majority of those viewpoints within or on the boundary of the site are predicted to experience adverse effects moderate or moderate – major significance.
- 6.7.6 Viewpoints to the east would experience a reducing degree of effect, and are predicted to experience adverse effects of minor significance. No effect is predicted on the most distant views.
- 6.7.7 Refer to the LVIA for more detail.

6.8 Likely Significant Environmental Effects Post Construction

- 6.8.1 Overall, it is considered that there would be a moderate adverse effect on landscape receptors arising from the construction phase of the proposed development. This effect is localised and focused principally on the site itself and immediate environs within approximately 500m of the site boundary.
- 6.8.2 A summary of the predicted effects on visual amenity as a result of the proposed development at Completion is shown in Table 6.4.

Table 6.4: Predicted Effects on Visual Amenity at Completion (extracted from LVIA)

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
Occupiers of Residential properties						
VP 1	45m	St Richards Rd	Medium	Substantial - moderate	Major-Moderate	Adverse
VP 5	Within site	Intersection of PRow 298 with Westergate St	Medium	Moderate	Moderate	Adverse
VP 18	55m	Ivy Lane	Medium	Medium	Moderate	Moderate
VP 2	Boundary	Middle of PRow - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 3	Boundary	Intersection of PRow 298 and 297	Medium	Substantial	Major-Moderate	Adverse
VP 4	Boundary	West of PRow - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 5	Within site	Intersection of PRow 298 with Westergate St	Medium	Moderate	Moderate	Adverse
VP 6	Within site	PRow - Footpath 300	Medium	Substantial	Major-Moderate	Adverse
VP 7	Within site	Intersection of PRow - Footpath 300 and north-south hedgerow	Medium	Substantial	Major-Moderate	Adverse
VP 8	Within site	Eastern boundary of the application site	Medium	Substantial	Major-Moderate	Adverse

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
VP 9	Within site	Intersection of PRoW 296 with unidentified path.	Medium	Substantial	Major-Moderate	Adverse
VP 10	Within site	Unidentified path within site. South of PRoW 298.	Medium	Substantial	Major-Moderate	Adverse
VP 11	Within site	East of PRoW - Footpath 298	Medium	Substantial	Major-Moderate	Adverse
VP 12	Within site	Eastern boundary of the site	Medium	Substantial	Major-Moderate	Adverse
VP 13	Within site	Between PRoW 296 and 317	Medium	Moderate	Moderate	Adverse
VP 14	70m	PRoW 296, on the south east corner of Eastergate Primary school's boundary.	Medium	Moderate	Moderate	Adverse
VP 15	155m	Church lane, north of Manor Farm	Medium - high	Slight	Moderate	Adverse
VP 16	450m	PRoW - Footpath 321. On the southwest corner of Fleurie Nursery	Medium	Moderate	Moderate	Adverse
VP 17	Boundary	North East corner of the application site's boundary	Medium	-	-	-
VP 19	1km	PRoW - Footpath 321. South of Elm Grove South	Medium	Slight	Moderate - minor	Adverse
VP 20	1km	Northern intersection of PRoW 323 with the railway	Medium	Negligible	Minor	Adverse

Reference	Distance to application boundary	Receptor and location	Sensitivity	Magnitude	Significance	Nature
VP 21	1.2km	PRoW - Footpath 323	Medium	Negligible	Minor	Adverse
VP 22	1km	PRoW - Footpath 323	Medium	Negligible	Minor	Adverse
VP 23	1km	PRoW - Footpath 200_1. On the South west corner of Lidsey Oil Field	Medium	-	-	-
VP 24	4.5km	Nore Folly	High	-	-	-
VP 25	4.9km	Halnaker Windmill	High	-	-	-
VP 1	45m	St Richards Rd	Medium/Low	Substantial - moderate	Moderate	Adverse
VP 5	Within site	Intersection of PRoW 298 with Westergate St	Medium/Low	Moderate	Moderate	Adverse

6.8.3 There would be no visibility of the completed development and therefore no effect on visual amenity from 4 of the 25 viewpoints assessed. These are all outside the boundary the site.

6.8.4 The majority of those viewpoints within or on the boundary of the site are predicted to experience adverse effects moderate or moderate – major significance.

6.8.5 Viewpoints to the east would experience a reducing degree of effect, and are predicted to experience adverse effects of minor significance. No effect is predicted on the most distant views.

6.8.6 Refer to the LVIA for more detail.

6.9 Mitigation

6.9.1 Landscape Strategy – Recommended Mitigation Measures and Enhancements are described in Table 6.5:

Table 6.5: Landscape Strategy – Recommended Mitigation Measures and Enhancements

Mitigation	Purpose
Primary Mitigation (Inherent)	
The mature tree and hedgerow structure of the site is largely retained	- To maintain visual screening of the site from the surrounding area. - To maintain the landscape character and biodiversity of the site
Secondary Mitigation (Foreseeable)	
Native hedgerows with specimen trees and areas of woodland are proposed along the boundaries of the site including the southern edge.	To create a defined edge to the site, reduce the visual impact of the development to the west and enhance the biodiversity value of the site.
Replacement and compensatory tree planting	To compensate for the loss of trees associated with the proposed development. Compensatory and mitigation tree planting could include some larger scale tree species such as Oak, Holm oak, Yew, Beech, Hornbeam, Scots Pine and Larch
The use of a consistent palette of street trees and hedgerows within the development.	To help soften the appearance of the development, provide a high-quality environment for residents and enhance biodiversity.
Sympathetic use of locally appropriate building materials and colours.	To create a consistency with the existing buildings within the local area and within the LCA.
Carefully designed lighting restricted to the minimum.	To reduce or prevent light spillage onto adjacent areas and limit the night time effect on the open landscape
Enhancements	
Integrated internal tree planting and soft landscaping	- To contribute to the assimilation of the proposed development into the landscape - To provide ecological enhancement and visual interest.

6.10 Residual Effects

- 6.10.1 Overall, it is considered that there would be a moderate adverse effect on landscape receptors arising from the completion of the proposed development plus 15 years. This effect is localised and focused principally on the site itself and immediate environs within approximately 500m of the site boundary.

- 6.10.2 A summary of the predicted effects on visual amenity as a result of the proposed development at Completion plus 15 years is shown in LVIA Table 7.3.
- 6.10.3 There would be no visibility of the completed development and therefore no effect on visual amenity from 4 of the 25 viewpoints assessed. These are all outside the boundary the site.
- 6.10.4 The majority of those viewpoints within or on the boundary of the site are predicted to experience adverse effects moderate or moderate – major significance.
- 6.10.5 Viewpoints to the east would experience a reducing degree of effect, and are predicted to experience adverse effects of minor significance. No effect is predicted on the most distant views.
- 6.10.6 Refer to the LVIA for more detail.

6.11 Cumulative Effects

- 6.11.1 Owing to their proximity, both the proposed development and developments listed above share the same LCA SC9 Chichester to Yapton Coastal Plain. This LCA is sensitive to "development on settlement edges of ... suburban settlements of Tangmere, Barnham, Yapton and Westergate", and "loss of distinction between different settlements due to urban expansion". The scale of the developments proposed would conjoin the settlements of Westergate, Eastergate and Barnham. This would result in a substantial magnitude of effect. Consequently, the cumulative effect of the developments would be of Major - Moderate adverse significance.
- 6.11.2 It is assumed that all developments would be undertaken with the retention of the majority of existing landscape features such as hedgerows and hedgerow trees. The developments would however result in the conversion of existing fields into a residential development. The developments would not result in major topographical changes, though both sites would require some minor land remodelling works.
- 6.11.3 The cumulative effect on landscape elements and features would be Minor.
- 6.11.4 11 of the 25 viewpoints have the potential to present cumulative visual effects. However, for many of these the spatial or temporal (in the case of sequential visibility) separation, or distance between the viewpoint and the sites, would reduce the cumulative effect.
- 6.11.5 Receptors on the eastern side of the site (Viewpoints 7-13) would experience potential combined or simultaneous visibility and sequential visibility of the proposed development and BEW Parcel SC1 development to the east of the Rife. A belt of open space is proposed between both sites but the built form of both would be clearly visible. The magnitude of effect would be substantial and, with medium sensitivity, there would be a major adverse cumulative significance of effect.

6.11.6 Receptors to the east moving along local PROW (Viewpoints 15 - 22) would have views of the proposed development obscured by the BEW Parcel SC1 development. This would result in a greater degree of effect than just the application site on its own. The magnitude of effect would be substantial and, with medium sensitivity, there would be a major adverse cumulative effect of significance.

6.11.7 There would be no discernible cumulative effect from VP 23-25.

6.12 Summary

6.12.1 The report concerns the predicted landscape and visual effects arising from the construction of the western section of East/West Link Road with new access, road bridge & associated works; and up to 400 No. dwellings with access and associated works on land east of Westergate, West Sussex.

6.12.2 The site is located within Landscape Character Area SC9 Chichester to Yapton Coastal Plain.

6.12.3 The site is not subject to any statutory or non-statutory landscape designations.

6.12.4 The site itself is considered to be of medium – high landscape value, with medium susceptibility, resulting in a medium – high sensitivity. The study area is considered to be relatively uniform and possessing some heritage assets and is therefore considered to be of medium value, with medium susceptibility, resulting in a medium sensitivity.

6.12.5 The site is reasonably well contained within the landscape. Visibility is limited by residential properties to the west and north. The land to the east is gently rolling with some visual cut off of longer distance views toward Barnham. The study area is closely associated with the viewpoints, with visibility reducing to the east and south. The two longer distance views at Nore Folly and Halnaker Windmill are sufficiently distant that the site is difficult to identify.

6.12.6 Overall, it is considered that there would be a moderate adverse effect on landscape receptors arising from the completion of the proposed development. This effect is localised and focused principally on the site itself and immediate environs within approximately 500m of the site boundary.

6.12.7 The majority of those viewpoints within or on the boundary of the site are predicted to experience adverse effects moderate or moderate – major significance. Viewpoints to the east would experience a reducing degree of effect, and are predicted to experience adverse effects of minor significance. No effect is predicted on the most distant views.

Table 6.6: Impact Assessment

Description of Impact/Effect	Geographical Level of Importance of Issue					Impact (Beneficial/ Adverse/ Neutral)	Nature (Permanent/ Temporary, Reversible/Irreversible)	Significance
	I	N	R	D	L			
Effects on the Landscape Character of the site					*	Adverse	Permanent	Moderate – major
SC9 Chichester to Yapton Coastal Plain LCA				*		Adverse	Permanent	Minor
Local Landscape Condition					*	Adverse	Permanent	Minor
Scenic Quality					*	Adverse	Permanent	Moderate
Leisure and Tourism					*	Adverse	Permanent	Moderate
Visual Effects on the surrounding landscape					*	Neutral	Permanent	Negligible
Local Visual Effects within or adjacent to the application site					*	Adverse	Permanent	Minor

6.13 References

6.13.1 A list of references for the LVIA Chapter are below:

- Natural England (2013) National Character Area Assessment
<https://publications.naturalengland.org.uk/file/5611419550613504>
- West Sussex County Council (2003) “The West Sussex Landscape”

6.14 Glossary

6.14.1 Please also refer to LVIA Appendix 2.

Glossary of Terms

(Derived from current IEMA/LI Guidelines with additional glossary)

Access land	Land where the public have access either by legal right or by informal agreement.
Baseline studies	Work done to determine and describe the environmental conditions against which any future changes can be measured or predicted and assessed.
Characterisation	The process of identifying areas of similar landscape character, classifying and mapping them and describing their character.
Characteristics	Elements, or combinations of elements, which make a contribution to distinctive landscape character.
Compensation	Measures devised to offset or compensate for residual adverse effects which cannot be prevented/avoided or further reduced.
Competent authority	The authority which determines the application for consent, permission, licence or other authorisation to proceed with a proposal. It is the authority that must consider the environmental information before granting any kind of authorisation.
Consultation bodies	Any body specified in the relevant EIA Regulations which the competent authority must consult in respect of an EIA, and which also has a duty to provide a scoping opinion and information.
Designated landscape	Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in development plans or other documents.
Development	Any proposal that results in a change to the landscape and/or visual environment.
Direct effect	An effect that is directly attributable to the proposed development.
‘Do nothing’ situation	Continued change or evolution in the landscape in the absence of the proposed development.

Ecosystem services

The benefits provided by ecosystems that contribute to making human life both possible and worth living. The Millennium Ecosystem Assessment (www.unep.org/maweb/en/index.aspx) grouped ecosystem services into four broad categories:

1. supporting services, such as nutrient cycling, oxygen production and soil formation – these underpin the provision of the other ‘service’ categories;
2. provisioning services, such as food, fibre, fuel and water;
3. regulating services, such as climate regulation, water purification and flood protection;
4. cultural services, such as education, recreation and aesthetic value.

Elements

Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.

Enhancement

Proposals that seek to improve the landscape resource and the visual amenity of the proposed development site and its wider setting, over and above its baseline condition.

Environmental Impact Assessment (EIA)

The process of gathering environmental information; describing a development; identifying and describing the likely significant environmental effects of the project; defining ways of preventing/avoiding, reducing, or offsetting or compensating for any adverse effects; consulting the general public and specific bodies with responsibilities for the environment; and presenting the results to the competent authority to inform the decision on whether the project should proceed.

Environmental Statement

A statement that includes the information that 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 that includes at least the information referred to in the EIA Regulations.

Feature

Particularly prominent or eye-catching elements in the landscape, such as tree clumps, church towers or wooded skylines OR a particular aspect of the project proposals.

Geographical Information System (GIS)

A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.

Green Infrastructure (GI)

Networks of green spaces and watercourses and water bodies that connect rural areas, villages, towns and cities.

Heritage

The historic environment and especially valued assets and qualities such as historic buildings and cultural traditions.

Historic Landscape

Characterisation

(HLC and Historic Land-use

Assessment (HLA)

Historic characterisation is the identification and interpretation of the historic dimension of the present-day landscape or townscape within a given area. HLC is the term used in England and Wales, HLA is the term used in Scotland.

Indirect effects

Effects that result indirectly from the proposed project as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects.

Iterative design process

The process by which project design is amended and improved by successive stages of refinement which respond to growing understanding of environmental issues.

Key characteristics

Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.

Land cover

The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.

Land use

What land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.

Landform

The shape and form of the land surface which has resulted from combinations of geology, geomorphology, slope, elevation and physical processes.

Landscape and Visual

Impact Assessment (LVIA)

A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource in its own right and on people's views and visual amenity.

Landscape capacity

The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character. Capacity is likely to vary according to the type and nature of change being proposed.

Landscape character

A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.

Landscape Character

Areas (LCAs)

These are single unique areas which are the discrete geographical areas of a particular landscape type.

Landscape Character

Assessment (LCA)

The process of identifying and describing variation of the character of the landscape and using this information to assist in managing change in the landscape. It seeks to identify and explain the unique combination of elements and features that make landscapes distinctive. The process results in the production of a Landscape Character Assessment.

Landscape Character Types (LCTs)

These are distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern, and perceptual and aesthetic attributes.

Landscape classification

A process of sorting the landscape into different types using selected criteria but without attaching relative values to different sorts of landscape.

Landscape effects

Effects on the landscape as a resource in its own right.

Landscape features

A prominent eye-catching element, e.g. wooded hill top and church spire.

Landscape quality (condition)

A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.

Landscape receptors

Defined aspects of the landscape resource that have the potential to be affected by a proposal.

Landscape strategy

The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programmes or related documents.

Landscape value

The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.

Magnitude (of effect)

A term that combines judgements about the size and scale of the effect, the extent of the area over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration.

Parameters

A limit or boundary which defines the scope of a particular process or activity.

Perception

Combines the sensory (that we receive through our senses) with the cognitive (our

knowledge and understanding gained from many sources and experiences).

Photomontage	A visualisation which superimposes an image of a proposed development upon a photograph or series of photographs.
Receptors	See Landscape receptors and Visual receptors.
Scoping	The process of identifying the issues to be addressed by an EIA. It is a method of ensuring that an EIA focuses on the important issues and avoids those that are considered to be less significant.
Seascape	Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other.
Sensitivity	A term applied to specific receptors, combining judgements of the susceptibility of the receptor to the specific type of change or development proposed and the value related to that receptor.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Stakeholders	The whole constituency of individuals and groups who have an interest in a subject or place.
Strategic Environmental Assessment (SEA)	The process of considering the environmental effects of certain public plans, programmes or strategies at a strategic level.
Susceptibility	The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.
Time depth	Historical layering – the idea of landscape as a ‘palimpsest’, a much written-over manuscript.
Townscape	The character and composition of the built environment including the buildings and the relationships between them, the different types of urban open space, including green spaces, and the relationship between buildings and open spaces.
Tranquillity	A state of calm and quietude associated with peace, considered to be a significant asset of landscape.
Visual amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.

Visual effects	Effects on specific views and on the general visual amenity experienced by people.
Visual receptors	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Visualisation	A computer simulation, photomontage or other technique illustrating the predicted appearance of the development.
Zone of Theoretical Visibility (ZTV)	A map, usually digitally produced, showing areas of land within which a development is theoretically visible.
Zone of Significant Visibility (ZSV)	Area within a ZTV from which a proposed development is likely to draw the eye of a casual observer, based on field observations.

7. Ecology

- 7.1 Introduction
- 7.2 Background
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7 Ecology

7.1 Introduction

- 7.1.1 This chapter has been written by Lewis Lakudzala BSc (Hons), MRes of Ecosupport Ltd and checked by Lyndsey Barratt BSc (Hons) PGCert ACIEEM, Senior Ecologist of Ecosupport Ltd. This chapter is informed and supported by document(s) 'Land at Westergate Interim Ecological Impact Assessment (EclA)', 'Land at Westergate and supporting maps and detailed data which are provided in full in Appendices 7.1 - 7.5.

7.2 Background

- 7.2.1 Ecologists work closely within the development sector to provide solutions to ecological and environmental issues associated with development, and to ensure developments abide to European Legislation, together with environmental laws and regulations in the UK. By undertaking appropriate surveys and research Ecologists can provide advice on how plans to use a particular area of land may affect the plant and animal species and types of habitats present, in addition to advice regarding protected species such as Bats, Dormice, GCN, Badgers and Reptiles.
- 7.2.2 The site comprises of approximately 19ha of grassland, arable, woodland, scrub and hedgerows/treelines located to the east of Westergate, Chichester, PO20 3QR (centered on OS grid reference SU 941 048).
- 7.2.3 The north of the site is bound by a school and residential units, the majority of the east is bound by residential units except for the south-east of site which is largely bound by an adjacent field. Meanwhile the west of site is bound by agricultural land and finally, the south is bound by a railway line.
- 7.2.4 The immediate surrounding wider environ is largely comprised of agricultural fields with the village of Westergate just to the east and twin village Eastergate to the north-east.
- 7.2.5 The development is a hybrid application seeking full consent for the site access of Westergate Street, east-west link road and bridge over the Lisey Rife and outline consent for up to 400 dwellings and associated access, landscaping and drainage.
- 7.2.6 This will predominantly involve the loss of cropland, grassland and bramble scrub. Some of the woodland and hedgerows are to be retained under proposals, although some of the central hedgerows will be removed to make room for the central residential parcels. With the retention of the stream along the eastern boundary and around the POS, It is anticipated that general site connectivity to the wider network of habitat for mobile species (e.g. bats will be maintained).

7.2.7 The development will support the creation of green space areas comprising species-rich grassland and mixed scrub, in addition to pond creation and tree planting.

7.2.8 The potential for cumulative effects with projects highlighted within the Scoping Opinion Response received from Arun District Council dated 21st November 2022 is considered within this chapter.

7.3 Chapter Structure

7.3.1 This chapter will detail the findings of the initial ecological survey (January 2023) followed by the Interim findings of the survey work undertaken during the 2023 season. Mitigation and compensatory measures will be provided based on the results that have been obtained thus far.

7.4 Ecology Policy Context

The Environment Act (2021)

7.4.1 The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues.

The Conservation of Habitats and Species Regulations (2017) (as amended)

7.4.2 The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

7.4.3 In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

The Wildlife and Countryside Act (1981)

7.4.4 This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and

also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

- 7.4.5 The Wildlife & Countryside Act (1981) states that it is an offence to ‘plant or otherwise cause to grow in the wild’ any plant listed in Schedule 9 art II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrots Feather (*Myriophyllum aquaticum*).

The Countryside and Rights of Way Act (2000)

- 7.4.6 This Act strengthens the Wildlife & Countryside Act by the addition of “reckless” offences in certain circumstances, such as where there is the likelihood of protected species being present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

Natural Environment and Rural Communities Act (2006)

- 7.4.7 The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the UK Post – 2010 Biodiversity Framework.

Protection of Badgers Act (1992)

- 7.4.8 The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

- 7.4.9 Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

National Planning Policy Framework Policy (2021)

- 7.4.10 Section 15 of the National Planning Policy Framework (NPPF, 2021) ‘Conserving and enhancing the natural environment’ states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

- 7.4.11 The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

Local Policy – Arun Local Plan 2011–2031 (Adopted July 2018)

- 7.4.12 Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects these sites and the species and habitats contained within them.
- 7.4.13 Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance as designated in the Arun Local Plan or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated:
- There is no alternative solution (which shall be adequately demonstrated by the developer).
 - There are reasons of public health or public safety or there are benefits of primary importance to the environment or iv. There are imperative reasons of overriding public interest.
- 7.4.14 Aside from the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined. In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;
- The European, National or Local status and designation of the site;
 - The nature and quality of the site's features, including its rarity value;
 - The extent of any adverse impacts on the notified features of interest;
 - The need for compensatory measures in order to re-create remaining features of habitats on or off the site.
- 7.4.15 Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.

7.4.16 Policy ENV DM2 states the varying level of protection afforded to Pagham Harbour when considering development;

- Within Zone A (0-400m from the boundary) as identified on the Policies Maps, development will only be permitted in exceptional circumstances where the developer is able to demonstrate there will be no detrimental effects on Pagham Harbour, including non-native species and the water environment. regard shall also be had to tests 1-4 as set out in Policy DM1 (Designated Sites of Biodiversity or Geological Importance).
- Within Zone B (0-5km) for all new residential development and development which is likely to have an impact on Pagham Harbour will be required to:
 - Make developer contributions towards the agreed strategic approach to access management at Pagham Harbour.
 - create easily accessible new green spaces for recreation within or adjacent to the development site. These shall be capable of accommodating the predicted increases in demand for local walking, including dog walking. Good pedestrian links shall be provided between housing areas and new and existing green space in order to discourage car use.

7.4.17 Policy ENV DM3 states that any development will retain and incorporate important ecological habitats, wildlife corridors and stepping stones as well as be designed to minimise any disturbance to these habitats. Developments that fail to do so will have their proposal rejected. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified within the local plan or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence of that species and habitat and impact(s) that development may have on the BOA.

7.4.18 Development and biodiversity Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement. Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.

7.5 Ecology Assessment Methodology

Desk Study

7.5.1 Data Request

- 7.5.1.1 A data request was submitted to the Sussex Biodiversity Records Centre (SxBRC) to ascertain any records held of nature conservation designations and protected species within 2 km of the boundary of the site.

7.5.2 Waterbodies

- 7.5.2.1 Any ponds located within 500 m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

7.5.3 Habitats

- 7.5.3.1 The updated field survey work which forms the basis of the findings of this report was carried out by Adam Jessop MSc ACIEEM, (10 years post MSc graduation experience) and Lyndsey BSc (Hons) PGCert ACIEEM (6 years post PGCert graduation experience) on the 18th January, 2023.
- 7.5.3.2 Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 2.0 (Butcher et al., 2020).

7.5.4 Badgers

- 7.5.4.1 The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts within a 30m radius from the site's boundary.

7.5.5 Bats

Ground-based PRAs of Trees

- 7.5.5.1 The assessment of the trees on site was undertaken by Adam Jessop during the updated walkover survey under class level 2 survey licence number (2015-13366-CLS-CLS) and updated by Lewis Lakudzala BSc (Hons) MSc (working under class level 1 survey licence number (2018-38386-CLS-CLS)) on 26th May 2023.

Phase II Emergence Surveys

- 7.5.5.2 The emergence surveys were carried out on the moderate potential Oak tree. Due to an emergence on the first survey, three surveys including 2 dusks and 1 dawn were completed.
- 7.5.5.3 Surveys were supplemented with the use of one thermal imaging camera on the southern aspect for surveys 2 and 3 to provide a more accurate approximation of the roost locations.
- 7.5.5.4 The camera used was the Pulsar Merger LRF XL50 Thermal Imaging Binoculars. These binoculars are ideal for the close-range, high specification requirements of roost surveys with a 1024x768, 12µm, <40mK thermal sensor and 50mm f1.0 objective lens (Fawcett Williams & BCT, 2021).

Walked Transects

- 7.5.5.5 Based on the suitability of the habitat for foraging and commuting bats, walked transects were carried out on site during April – August 2023 (with more to follow in September and October 2023).
- 7.5.5.6 It was considered that two transect routes with 8 (north) and 10 (south) listening stations would be appropriate given the scale of the site.
- 7.5.5.7 Approximately 8-13 minutes was spent at each listening point during which passes of species were noted.

Static Detectors

- 7.5.5.8 Static detectors were placed at different locations along the transect route for 5 consecutive nights each month (April – June for this site).
- 7.5.5.9 2 Anabat express and/or wildlife acoustics minibat detectors were placed for each of the months covered by the survey work.

Bat Trapping

- 7.5.5.10 Habitats and features throughout the site were evaluated and assessed for their importance and the potential of different species which could be present to be surveyed for, notably areas likely to be used by Bechstein's bats.
- 7.5.5.11 Trapping surveys were led by Daniel Whitby (NE class level 4 bat survey licence holder).
- 7.5.5.12 The trapping surveys were conducted on the 28th July, and 13th August 2023. Surveys were conducted through the later part of the bat active survey season incorporating birthing and later summer when juveniles will be volant.
- 7.5.5.13 Trapping was conducted throughout the site in areas considered suitable, especially areas considered to have the highest potential for Bechstein's bats (*Myotis bechsteinii*) on the site. Traps were spread evenly throughout the site.
- 7.5.5.14 The survey involved catching bats using harp traps, with a sonic lure (Autobat/AT100) to attract any bats foraging in or commuting through the area using a range of bat species social calls.
- 7.5.5.15 Trapping with an ultrasonic lure is recognised as the only way to accurately identify and confirm the presence of Bechstein's bats (BCT Survey guidelines).

- 7.5.5.16 All bats were identified, sexed and reproductive status ascertained. All bats were released at the capture site on same night of capture.

7.5.6 Assessment of Pond

- 7.5.6.1 A Habitat Suitability Index (HSI) was carried out on one pond located adjacent to the site on the following the guidance provided with ARG (2010).

7.5.7 Reptile Surveys

- 7.5.7.1 Following identification of suitable reptile habitat on site, presence / likely absence surveys were undertaken by Ecosupport Ltd in accordance with best practice guidance (Froglife, 1999). The refugia was checked seven times during suitable weather conditions by experienced reptile workers.

- 7.5.7.2 No reptiles were recorded on site during these surveys.

7.5.8 Dormouse Surveys

- 7.5.8.1 All hedgerows were considered suitable for Dormice (*Muscardinus avellanarius*) on site. As a result, a dedicated survey took place.

- 7.5.8.2 Nest tubes were installed at 15-20-meter intervals along stretches of the hedgerows and within pockets of woodland within the site boundary.

- 7.5.8.3 150 tubes were tied to the underside of suitable branches using wire and or cable ties. These were put in place in March 2021 and then were checked monthly between April and August (with a final survey completed in September).

- 7.5.8.4 By carrying out the surveys over these months the survey effort achieves a score of 21 for thoroughness¹. Guidelines state that the score should be no less than 20, therefore the survey effort expended is considered to be more than adequate and will incorporate two of the best months (August and September).

7.5.9 Breeding Bird Surveys

- 7.5.9.1 The survey methodology was broadly based upon the British Trust of Ornithology (BTO) Breeding Bird Survey (BBS) and Common Bird Census methods, including the BTO Standard Recording Codes (BTO, 2004).

- 7.5.9.2 Surveys were undertaken between early March and June 2023 during favourable weather conditions.

- 7.5.9.3 Survey visits commenced 30 minutes from dawn, with each survey visit taking between 96-120 minutes each.

¹ This is based on the standard 50 tubes and index of probability of finding dormice present in nest tubes as per Bright et al 2006.

7.5.9.4 All surveys were undertaken during suitable weather conditions (with little or no rain, little to no wind and good visibility).

7.5.9.5 Each survey followed a pre-defined linear transect route, including 10-minute observational points from where the surveyor could observe bird activity and listen for birdcalls to establish territories and presence of breeding/nesting birds.

7.5.9.6 Behaviour such as singing male birds, young, nests, feeding behaviour, territorial disputes and defensive behaviour around possible active nests were noted.

7.5.10 Riparian Mammal Survey

7.5.10.1 The riparian mammal survey involved methodically walking the length of the ditches (including entering where required) and searching for field signs of presence of protected species, most notably Water Voles (*Arvicola amphibious*).

7.5.10.2 Signs to search for are outlined within the Water Vole Conservation Handbook (Strachan et al, 2011).

7.5.10.3 The entire length of the on-site ditches was surveyed, extending over approximately 1.41km with the survey footprint extended to both banks in accordance to guidance provided by the Water Vole Mitigation Guidance (2016).

7.5.11 Habitat Assessment

7.5.11.1 Habitats on Site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 1.1 (UKHab Ltd., 2020). This was chosen as an appropriate habitat categorisation system as it fits within the Biodiversity Metric 4.0 calculation.

7.5.11.2 The most-recent condition assessment was carried out on the site on 18th January 2023 by Adam Jessop MSc ACIEEM, (10 years post MSC graduation experience) and Lyndsey Barratt BSc (Hons) PGCerts ACIEEM. The most recent results are considered to be the most representative of the habitats on site.

7.5.11.3 The area of identified habitats is calculated in hectares (ha), ignoring linear features or ditches (the area is measured to the centre line of such features). The length of linear features is measured separately in kilometres (km). The dominant habitat type was selected, according to those defined by UKHab Ltd (2020).

Limitations

7.5.11.4 The updated habitat assessment was complete during January which is outside of the period when vesicular plants are flowering. Notwithstanding this, given the previous survey work undertaken on site, it was not considered that this would have posed a constraint on the assigning of habitat types.

Significance Criteria and Receptors

- 7.5.11.5 The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's Guidelines for Ecological Assessment in the UK and Ireland (CIEEM, 2018). The guidelines provide a useful framework for assessing ecological impacts at any level.
- 7.5.11.6 The following definitions are used for the term's 'impact' and 'effect':
- Impact – Actions resulting in changes to an ecological feature.
 - Effect – Outcome to an ecological feature from an impact.
- 7.5.11.7 The approach of the guidelines is to assess potential impacts to all features of ecological interest that could be affected by a scheme. As a scheme may have effects beyond its boundaries, it is important to identify the 'zone of influence' of the scheme and to assess the potential for significant ecological impacts throughout this zone as well as those within the application boundaries, for example impacts upon nearby species, habitats and sites designated for their nature conservation value. Where such features are identified, they are first valued and then assessed as to the likely magnitude and significance of potential impacts that may be exerted upon those features by the proposed scheme. 'Significant' impacts are considered to be where they affect the integrity and/or conservation status of a designated site for a habitat or species. All potential significant impacts are considered in the absence of any avoidance, mitigation or compensation to inform the suitable design of such measures (where necessary), which can then be incorporated into the scheme to reduce such impacts. Finally, an assessment is made to identify any residual impacts upon these features (both positive and negative) that would remain once any impact avoidance, mitigation or compensation measures have been implemented.
- 7.5.11.8 All ecological features identified within the site boundaries and the identified zone of influence of the proposals are considered within a defined geographical context, as follows:
- International
 - National
 - County
 - District
 - Local
 - Site
- 7.5.11.9 The guidelines state that ecological features that are valued, under the ecological assessment of a scheme, to be of less than local value are not considered sufficiently valuable for an impact to be considered significant. Therefore, only those features assessed as being of at least local value require avoidance, mitigation and/or compensation. That said, where a feature is of less than local value but where impacts upon this feature hold

the potential to result in contravention of relevant wildlife legislation, measures must be implemented to ensure compliance with legislation, regardless of the level of value of the feature.

7.5.11.10 Potential impacts are considered at all stages of the proposed development. The assessment should consider all types of impact (both direct and indirect) and whether potential impacts are short, medium, long-term, permanent, temporary, reversible, irreversible, positive and/or negative.

7.5.11.11 Factors taken into consideration in determination of importance of ecological features (receptors) include (CIEEM, 2018):

- designations and nature conservation status;
- statutory and non-statutory designated sites for nature conservation;
- Habitats and species of principal importance for nature conservation in England (NERC Act, s.41);
- Local BAP priority habitats and species;
- Red Data Book (RDB) species of conservation concern (JNCC, 2020);
- Birds of Conservation Concern (Eaton et al., 2015);
- nationally rare and nationally scarce species;
- legally protected species;
- animal or plant species, sub-species or varieties that are rare or uncommon, either Internationally, Nationally or more Locally, including those that may be seasonally transient;
- ecosystems and their component parts, which provide the habitats required by important species, populations and/ or assemblages;
- endemic species or locally distinct sub-populations of a species;
- habitat diversity;
- habitat connectivity and/ or synergistic associations;
- habitats and species in decline; and
- large populations of species or concentrations of species considered uncommon or threatened in a wider context.

7.6 Baseline

Designated Sites

7.6.1 No internationally / designated sites are present within 2 km of the site.

7.6.2 Two locally designated / non-statutory sites are present within 2 km, Fontwell Park Racecourse LWS is located approximately 1.21km to the north and Barnham Road Designated Road Verge is located approximately 0.38km to the north-east of site.

7.6.3 A parcel of land to the west of the site is part of an Environmental Stewardship Agreement.

Vegetation Survey Results

7.6.4 The vegetation within the site has been described below using the broad Phase I habitat classification terminology as described with UK Habs, (Butcher et al., 2020). The habitat types on site comprise:

- Modified grassland
- Other neutral grassland
- Wet woodland
- Bramble scrub
- Winter stubble
- Hedgerow
- Other rivers and streams
- Developed land; sealed surface

7.6.5 Bat Survey Results

Pre-existing Data

7.6.5.1 The data request from SxBRC returned 151 bat records within 2 km of the site from 8 species Including: Western Barbastelle (*Barbastella barbastellus*), Serotine (*Eptesicus serotinus*), Whiskered Bat (*Myotis mystacinus*), Noctule Bat (*Nyctalus noctula*) and Nathusius' Pipistrelle (*Pipistrellus nathusii*).

Preliminary Roost Assessment (trees)

7.6.5.2 A number of trees along the western boundary of the arable field were considered to have potential to support roosting bats. The PRF's noted included knot holes and large hollow cavities at the bases of two trees.

7.6.5.3 Several trees to be removed have been identified as supporting low roosting potential and will be subject to removal under precautionary measures.

7.6.5.4 One mature oak tree was found to support moderate potential for roosting bats and was subject to bat surveys.

Site Assessment

7.6.5.5 The mature hedgerows / scrub field boundaries and the area of wet woodland on site provide some suitability for local commuting bats.

7.6.5.6 Based on the nature of the habitats on site, previous survey results and the records returned by SxBRC., this site is considered to be of Moderate - High potential for foraging and commuting bats.

Walked Transects (2023)

7.6.5.7 Phase II Bat Activity Transects and Static Monitoring are still currently taking place and scheduled to finish October 2023. The interim findings are presented below.

- 7.6.5.8 The species recorded during the bat activity transect surveys comprised of Common Pipistrelle, Soprano Pipistrelle, Myotis species, Long-eared species and Serotine.
- 7.6.5.9 Using the Wray et al (2010) system for valuing foraging and commuting habitat for bats, the site scores 34 points for commuting bats and 30 points for foraging bats.
- 7.6.5.10 Correspondingly, the site is considered to be of Regional value for commuting bats and County value for foraging bats.

Static Monitoring (2023)

- 7.6.5.11 Similarly, to the transects, activity across all areas of the site was largely dominated by Pipistrellus spp, the majority of which were Common Pipistrelle.
- 7.6.5.12 Occasional Serotine, Noctule, Plecotus spp, Myotis spp and Barbastelle (Barbastella barbastellus) were also recorded.
- 7.6.5.13 The area of wet woodland on the east of the site had a noticeably larger number of Noctule calls.
- 7.6.5.14 The areas of the site considered to be key bat foraging and commuting areas are shown below in Figure 7.1.

Figure 7.1: Key bat commuting routes identified across the site. Red circle=location of Barbastelle bats, blue circle= confirmed location of Bechstein's Bat.



Phase II Emergence Surveys (Trees) (2023)

- 7.6.5.15 The results of the surveys indicate a day roost for Common Pipistrelle (count 1) and Soprano Pipistrelle (1) bats.
- 7.6.5.16 The identified day roosts within the tree are considered to be of local conservation value due to the species and the roost type and of low conservation significance using the CIEEM valuation criteria for bat roosts.
- 7.6.5.17 Final results from the trapping surveys have yet to be collated, analysed and evaluated, however, the following species were noted:

7.6.6 Badgers

Pre-existing Data

- 7.6.6.1 SxBRC do not return any records of Badgers at a request of local Badger groups to have records remain confidential. However, no evidence of Badger presence or activity was recorded on site in 2012 or 2016 during work conducted by ECOSA Ltd.

Site Assessment

- 7.6.6.2 No evidence of Badgers was noted on site during the updated walkover completed in January 2023. Taking the lack of evidence and quality of habitats on site, there is considered to be High Potential for foraging and commuting Badgers on site.

7.6.7 Reptiles

Pre-existing Data

- 7.6.7.1 SxBRC returned 12 records of Slow Worm (*Anguis fragilis*) presence from within 2 km and 5 records of Common Lizard (*Zootoca vivipara*).

Site Assessment

- 7.6.7.2 There are longer areas of modified grassland developing along the fields hedgerow / scrub boundaries.
- 7.6.7.3 The other neutral grassland on site supports a longer sward, and the northern modified grassland field supports a scattered scrub mosaic.

Previous Survey Work

- 7.6.7.4 The 2016 reptile surveys confirmed the presence of reptiles on site.

Phase II Survey Results (2023)

- 7.6.7.5 During the 2023 surveys a 'Low' population of Slow Worms (<50 / ha total adults as per HGBI 1998) was recorded on site (max count of 29 adults) and a 'Low' population of Common Lizards (max count of 11 adults).
- 7.6.7.6 The individuals found were evenly scattered throughout the site and are likely all part of the same local population.
- 7.6.7.7 The site is not considered a key reptile site.

7.6.8 Great Crested Newts

Pre-existing Data

- 7.6.8.1 SxBRC returned 2 records of Great Crested Newt (*Triturus cristatus*) presence from within 2 km.

Waterbodies within 500m

- 7.6.8.2 There was one waterbody within 500m of the site, located 110m to the east.

Site Assessment

- 7.6.8.3 It can be considered that the habitats present within site provide the required structure and heterogeneity required by GCN.
- 7.6.8.4 Similarly, whilst there are 2 records of GCN from within 1km of site, these are separated from site by significant barriers to dispersal in the form of a large number of residential dwellings, fences and major roads. Taking all of this into consideration, the site is considered to be of Low Potential for GCN.

Previous Site Assessment

- 7.6.8.5 The only pond within 500m of site is located approximately 110m to the east of site, which is on the eastern side of the flowing stream present on site. As evaluated by ECOSA Ltd. "this stream forms a partial barrier to the site from this pond, reducing the likelihood of any newts associated with this pond using the terrestrial habitat on site" (2016).
- 7.6.8.6 This pond within 500m was subject to an eDNA survey by ECOSA Ltd in May 2016 which confirmed an absence of the species.

Phase II Survey Results (2023)

- 7.6.8.7 The results of the eDNA survey completed in 2023 returned a negative result for GCN, confirming an absence of the species being present.

7.6.9 Hazel Dormouse

Pre-existing Data

- 7.6.9.1 SxBRC did not return any records of Dormouse (*Muscardinus avellanarius*) presence within 2 km of the site.

Site Assessment

- 7.6.9.2 The diverse hedgerows and scrub along both the site boundary and field boundaries along with the wet woodland area on site offer ideal habitat for Dormice.
- 7.6.9.3 The site is considered to hold Moderate Potential of supporting Dormice.

Previous Survey Work

- 7.6.9.4 A suite of Dormouse surveys were undertaken on site during June – November 2016 as an update to survey work conducted in 2012.

- 7.6.9.5 No Dormice or evidence of Dormice presence or activity was recorded on site in 2012 or 2016 during work conducted by ECOSA Ltd.

Phase II Survey Results (2023)

- 7.6.9.6 At this stage, Dormouse surveys have been conducted May-August. No Dormouse nests, individuals or signs of use have been found.

7.6.10 Notable and Birds of Conservation Concern (BoCC)

Pre-existing Data

- 7.6.10.1 SxBRC have returned records for a total of 66 'notable and protected' bird species including a number of NERC S41 listed species, Birds of Conservation Concern (BoCC) or those protected under W&CA Schedule 1 Part 1.

Site Assessment

- 7.6.10.2 The woodland, hedgerows and scrub boundaries present on site offer suitable habitat for breeding and nesting birds to support a variety of species, in addition to some of the grassland and cropped arable field offering potential for ground-nesting birds.
- 7.6.10.3 There is a High Potential for breeding and nesting birds on site.

Previous Survey Work

- 7.6.10.4 A suite of breeding bird surveys were undertaken on site during June – November 2016 as an update to survey work conducted in 2012.

Phase II Survey Results (2023)

- 7.6.10.5 A total of 32 bird species were recorded during the Breeding Bird Surveys within or just beyond the site boundaries.
- 7.6.10.6 A total of 7 red listed birds (of which 5 species are thought to be holding a territories within the site boundary) and 5 amber listed birds (of which 2 species is thought to be holding territories on-site) noted.
- 7.6.10.7 One active Buzzard (*Buteo buteo*) was located in the centre of the site.
- 7.6.10.8 The Song Thrush, Yellowhammer and Lesser Spotted Woodpecker are also priority species within England.

7.6.11 Riparian Mammals

Pre-existing Data

- 7.6.11.1 SxBRC did not return any records of Otters (these records remain confidential however), although it is noted that whilst there are no recent records of Otters, signs of Otter activity have been found within Sussex river catchments.

- 7.6.11.2 SxBRC returned 2 records of Water Vole (*Arvicola amphibious*) presence from within the 2 km search radius.

Previous Survey Work

- 7.6.11.3 A Water Vole survey was undertaken on site during 2016 as an update to survey work conducted in 2012. No Water Voles/Otter or evidence of their presence or activity was recorded on site in 2012 or 2016 during work conducted by ECOSA Ltd.

Phase II Survey Results (2023)

- 7.6.11.4 An updated survey was completed by Ecosupport Ltd in June 2023 which found no evidence of Water Vole burrows or signs, or evidence of Otter presence.

7.7 Likely Significant Environmental Effects During Construction

Change in Land Use

- 7.7.1 The change of use of the site will result in the physical structure of the present site being altered by the proposed development.
- 7.7.2 Site preparation activities will include some earthworks and earth stripping associated with a phased construction. Therefore, the zone of influence is predicted to extend across the development footprint and all protected species and habitats within the development footprint have the potential to be disturbed.
- 7.7.3 The majority of the impact area is considered to be of Site-Local ecological value, with the site dominated by modified grassland, winter stubble, other neutral grassland with a low number of scattered trees. There are however areas of more mature trees lines, hedgerows, lines of scrub, streams and wet woodland with these habitats considered to be of Regional value.

Impacts to Habitats

- 7.7.4 The trees within the retained tree lines and wet woodland on site could be damaged by machinery and particularly by root zone compaction, and degraded through deposition of fine and heavy dust particulates and surface water run-off.
- 7.7.5 Construction activities are associated with the generation of nuisance dust (larger particles) and PM₁₀ emissions. The larger particles tend to fall out quickly and, therefore, the impacts are generally most likely to be felt within 200m of the development (DEFRA, 2016).
- 7.7.6 The loss of habitat and potential indirect effects would have a moderate adverse impact to habitats of Local - Regional value.

7.7.7 Bats

- 7.7.7.1 The boundary habitats on site provide foraging and commuting resources for common, rarer and rarest species of bat, and bats associated with Singleton and Cocking Tunnels SAC.
- 7.7.7.2 The development will result in the loss of 1.05km of hedgerows/tree lines on-site therefore there are potential impacts through root compaction and damage to retained trees/tree lines on commuting routes and a retained Common and Soprano Pipistrelle bat roost.
- 7.7.7.3 The development will result in the permanent loss of bat foraging habitat in the form of the grassland. Therefore, it is considered the development will result in a certain moderate adverse impact to species of Regional value.

7.7.8 Reptiles

- 7.7.8.1 Without mitigation procedures put in place, clearance of reptile habitat will result in the direct harm of individuals and a reduction in the local population.
- 7.7.8.2 This would therefore be contrary to the provisions of the Wildlife & Countryside Act (1981) and would create a significant adverse impact to the local reptile population.
- 7.7.8.3 This will have a certain moderate adverse impact to species of Local value.

7.7.9 BoCC / Breeding and Nesting Birds

- 7.7.9.1 The removal of hedgerows and scrub will result in the loss of breeding bird habitat.
- 7.7.9.2 Additionally, whilst construction works are completed the removal of scrub/ hedgerows and scattered trees could lead to the disturbance of nesting birds and damage to their nests.
- 7.7.9.3 Where some of the construction works are proposed to be undertaken immediately adjacent to the woodland and bounding hedgerows, there is the risk of disturbing nesting birds which has the potential to lead to nest abandonment.
- 7.7.9.4 The level of noise associated with the construction will only be for a short period and are likely to only result in disturbance to nests within 5m of construction works.
- 7.7.9.5 An adverse impact is possible at the site level if breeding and nesting birds are present. Therefore, it is considered the development will result in a certain adverse impact at the local level.

7.7.10 Water Voles/Stream

- 7.7.10.1 A bridge will be constructed over the stream to link this application with the adjacent site east of the Lidsey Rife.
- 7.7.10.2 The crossing will result in a small loss of potential Water Vole habitat and disruption to dispersal.
- 7.7.10.3 Additionally, construction activities on site can result in the increased risk of pollution incidents that have the potential to directly negatively impact upon the stream habitat itself and indirectly impact upon Water Vole.
- 7.7.10.4 The combination of these effects will have a significant adverse impact at the local level.

7.8 Likely Significant Environmental Effects Post Construction

- 7.8.1 The zone of influence associated with the operational phase is extended beyond the site boundaries due to the nature of the development resulting in an increase in human activity and disturbance in the direct vicinity and further afield, although these will be somewhat mitigated through the provision of on-site public open space designed for the site capacity.

7.8.2 Human Disturbance

- 7.8.2.1 The development falls outside the 5.6km zone of influence for recreational pressure on the Solent SPAs. Therefore, there will be a neutral impact.

7.8.3 Dog Walking

- 7.8.3.1 No local wildlife sites falls within the 1.2km zone of influence for dog walking, therefore there will be a likely neutral impact.

7.8.4 Pollution

7.8.4.1 Air

- 7.8.4.1.1 Air pollution will arise from the introduction of vehicles on site. Although it will result in an increase in local emissions which may result in cumulative levels of air pollution resulting in a negative impact upon on-site retained habitats (i.e. the priority habitat wet woodland), although any detailed assessment of this is outside of the scope of this report (please refer to chapter 8 in the ES).

7.8.4.2 Noise

- 7.8.4.2.1 Noise will be generated by the inhabitants themselves and their associated activities. Noise will have implications for all fauna on site resulting in certain minor negative impacts.

7.8.4.3 Light

- 7.8.4.3.1 When the development is operational lighting will be introduced on site via the use of both street lamps and security lighting associated with the properties themselves. As currently there is a limited amount of existing lighting in place this will have certain major negative impacts upon nocturnal species such as bats (notably commuting Barbastelles which are of regional ecological value) and Badgers.

7.9 Mitigation

7.9.1 Construction Phase

- 7.9.1.1 To facilitate construction on site differing levels of vegetation clearance will be required.
- 7.9.1.2 Although it is recommended wherever possible that existing vegetation is retained, removal should take place prior to or after the bird-nesting season (March – August).
- 7.9.1.3 If this is not possible, the area to be cleared should be thoroughly checked by an ecologist immediately prior to clearance.
- 7.9.1.4 If any active nests are found, they should be left undisturbed with a suitable buffer of undisturbed vegetation (ca. 5m) until nestlings have fledged.

7.9.2 Protecting Retained Trees / Hedgerows

- 7.9.2.1 Tree protective fencing will be installed to protect retained trees and shrubs from direct impact and from severance or asphyxiation of the roots.
- 7.9.2.2 Fences must be installed at the distance of the branch spread away from the tree trunk (British Standard 5837:2012 trees in relation to construction) at a distance half the height of the tree and be of chestnut paling or of another similarly robust style of fencing.
- 7.9.2.3 No vehicles should enter the protective ring fencing and no materials should be stored within their circumference.
- 7.9.2.4 All protective fencing must be in place before any construction machinery arrives on site, and before any site stripping commences.

7.9.3 Badgers

- 7.9.3.1 Prior to the commencement of works on site, it is recommended for the following procedures to be in place:
- Trenches in excess of one metre in depth should be covered or secured and a means of escape provided for any animal that does fall in (a suitable escape can be provided by wooden planks placed at a 45-degree angle);
 - Any temporarily exposed open pipe system should be capped in such a way as to prevent badgers gaining access;
- 7.9.3.2 An updating Badger survey will also be required immediately prior to site clearance / construction to ensure no further setts have been built that may require closure under licence (if they will be directly impacted upon).

7.9.4 Birds

Integrated Features

- 7.9.5 To act as a biodiversity enhancement, 50% of the new dwellings will incorporate two Swift bricks (equivalent to over a 1:1 ratio).
- 7.9.6 The 'CJ Wildlife swift maxi nesting box' with entrance via a CJ Wildlife 'Cambridge swift full face brick' is recommended as it provides ideal nesting opportunities for Swifts and is available in different colours and can also be painted if necessary, to blend in with the surrounding brickwork.
- 7.9.7 If this model is not suitable for the building specifications, an alternative swift box with internal floor space exceeding 400cm squared must be used.
- 7.9.8 This feature should be installed at 6-7m above the ground, ensuring that there is unobstructed access for birds entering and leaving.
- 7.9.9 The box should be installed under the eaves in shaded areas out of direct sunlight and away from windows.
- 7.9.10 Sparrow Terrace features will also be introduced on site. These can be fixed onto the surface of a suitable wall or incorporated into the brickwork.
- 7.9.11 Although designed specifically for Sparrows it may also occasionally attract Tits, Redstarts and Spotted Flycatchers. Thus, it is recommended they be installed on 10% of properties.
- 7.9.12 In addition, House Martin nest cups will be installed in the eaves of 10% of properties.
- 7.9.13 The nest cups need to be placed at least 2m from ground height with an overhang to protect the nest from the elements (at least a 150mm overhang in total).

- 7.9.14 The cups should be placed on north, east or west elevations, avoiding southern elevations when the nest is exposed to sunlight for too long.

7.9.15 Reptile Mitigation Strategy

- 7.9.15.1 Semi-permanent exclusion fencing will be installed around the perimeter of all fields to both facilitate the reptile capture and prevent reptiles in the field boundaries from colonising the unsuitable habitat (managed grassland and cropland) once this develops into grassland.
- 7.9.15.2 The fencing will remain in place until all works are completed.
- 7.9.15.3 Due to the 'Low' population size of Slow Worms and 'Low' population size of Common Lizards identified an on-site reptile relocation is required, shown in Figure 7.2.
- 7.9.15.4 Although the managed modified grassland is unsuitable for reptile species, should this area be left unmanaged for a prolonged period, it is considered highly likely that reptiles will populate this area.
- 7.9.15.5 It is recommended that the current high intensity mowing management is sustained in order to maintain the existing sward height and keep the habitat unsuitable for reptile species.
- 7.9.15.6 The Bramble and grass level will be cut to reduce the sward height to 10cm in order to increase the reptile's reliance on the artificial refugia (works to be completed between September- February to avoid nesting bird season).

Figure 7.2: Proposed approximate reptile fencing plan (orange) and the areas subject to a capture (orange hatched), and the reptile receptor (yellow).



- 7.9.15.7 The HGBI guidelines (1998) suggest that for ‘low’ populations a minimum of 60 days capture is undertaken. However, with the use of habitat manipulation and increased refugia density, it is considered likely the capture may be completed in a much shorter timeframe (30 days).
- 7.9.15.8 As most reptiles found on-site were within field boundaries, these boundaries will be retained.
- 7.9.15.9 Three wood-based hibernacula will be created within the receptor
- 7.9.15.10 Following the completion of the relocation, a destructive search of the site will take place

7.9.16 Bats

- 7.9.16.1 All artificial lighting will be kept below a maximum of 0.5lux on retained boundary habitats (including the stream, retained woodland, retained scattered trees and retained scrub).
- 7.9.16.2 These areas will be seeded with wildflowers to improve the quality of boundary grassland habitats for bats.
- 7.9.16.3 Log piles and hibernacula will be installed within boundary habitats to increase the habitat resource for invertebrates (an important food source for bats).
- 7.9.16.4 Ecotones will be utilized adjacent to key commuting and foraging habitats to provide a level of protection for bats from artificial light.
- 7.9.16.5 The wavelength of the street lighting will be kept to below 2700 Kelvin and peak wavelengths higher than 550nm.
- 7.9.16.6 For site-wide street lighting, directional hoods will be utilized to prevent light spill above the 90° horizontal plane and to direct the light source towards the urbanized areas and away from linear boundary habitats.

Integrated Bricks

- 7.9.16.7 It is recommended that at least 50% of the proposed dwelling should include one bat brick or suitable alternative.
- 7.9.16.8 The bat bricks used should be the ibstock bat brick B as they are available in a variety of different brick colours and requires no maintenance.
- 7.9.16.9 These should also be positioned as close to the eaves as possible, away from windows and in a position that will receive some direct sunlight.

Bat Boxes on Trees

- 7.9.16.10 In addition, bat boxes should be erected within trees in the woodland and retained mature trees (exact number to be determined at the RM stage):
- Schwegler 2F bat boxes (or similar) – The front panel has a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices.
 - Schwegler 1FF bat boxes (or similar) – These are spacious enough for bats to use as a roost or nursery width making it ideal for bat species which inhabit crevices such as Pipistrelle Bats but also larger bats such as Noctule (*Nyctalus noctula*).
 - Schwegler 1FD bat box (or similar) – The domed roof results in an increased interior height whilst the two grooved internal wooden front panels provide a crevice. Both the cooler woodcrete surface and

the warmer wooden panel means bats have a choice of different temperatures in different parts of the box.

- 7.9.16.11 Bat boxes to be erected on trees will be done so using the galvanised steel hanger and aluminium nail provided.
- 7.9.16.12 They should be positioned at a height of between three to six metres from ground level.
- 7.9.16.13 Bat boxes should ideally be sited in open sunny positions.
- 7.9.16.14 The arrangement of the bat boxes has them facing different directions to provide a variety of micro-habitats.
- 7.9.16.15 To increase the chances of bats roosting in the new features, the bat boxes will be placed adjacent to vegetation features as bats will be more likely to discover the artificial roosts if it is placed close to an existing flight path.

7.9.17 Water Vole

- 7.9.17.1 The location of the stream cross-over bridge will be clearly marked by an engineer and/or appropriate personnel.
- 7.9.17.2 An ecologist will then undertake an updated survey of this area prior to works commencing.
- 7.9.17.3 If no evidence of Water Voles is found, to discourage future colonisation of the area of impact, under the supervision of a SQE, vegetation will be strimmed to bare earth either side of the ditch.

7.9.18 Hedgehogs

Hedgehog Homes

- 7.9.18.1 As well as the log piles, Hedgehog homes will also be incorporated into the wider landscaping of the development to enhance sheltering opportunities for local Hedgehogs (such as Igloo Hedgehog home or Hogitat Hedgehog house). This will provide a rapidly declining species with a place to shelter/hibernate.

Hedgehog Highways

- 7.9.18.2 Provision will be made to promote site connectivity and extended foraging ranges and opportunities for European Hedgehog.
- 7.9.18.3 Holes measuring 10cm x 10cm will be made at the base of boundary fences/gravel boards into and between each garden and the surrounding habitats.

7.9.18.4 Small signage should be installed on the fence above either side of these access points to ensure they remain open upon completion of the development.

7.9.18.5 The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts.

7.10 Residual Effects

7.10.1 Table 7.1 provides a summary of the residual effects resulting from the Proposed Development after effective implementation of the embedded and additional mitigation measures proposed above, if the mitigation measures are appropriately implemented then no residual significant impacts are anticipated.

Table 7.1: Significant Residual Effects

Phase	Resource or Receptor affected	Value or Sensitivity Significance of Receptor	Activity or Impact	Implemented Mitigation	Residual Effect Magnitude	Scale of Residual Effect
Demolition and Construction	Designated Sites/supporting sites/qualifying features	Very high	Aquatic and air pollution Impacts	Refer to CEMP	Minor adverse effect	County - Regional
	Bats	Moderate	Habitat loss	Retention of suitable habitat and additional woodland and tree planting	Minor negative impact at the local level (habitat loss)	Regional
	Reptiles	Moderate	Possible disturbance/injury/death of reptiles whilst removing vegetation and topsoil resulting in a significant impact	Installation of semi-permanent reptile fencing immediately prior to works and completion of reptile capture within impacted suitable habitats	Negligible	Local
	Nesting and Breeding birds	Moderate	Habitat loss and possible disturbance or destruction of nests if present resulting in a significant impact	Avoid nesting bird period or an ecologist performs a nesting bird survey with 5m buffers retained for active nests	Minor negative impact	Local
	Badgers	Moderate	Possible entrapment of mammals in uncovered excavations	Usage of escape ramps and capping of open pipes on all	Minor Impact	Negligible

Phase	Resource or Receptor affected	Value or Sensitivity Significance of Receptor	Activity or Impact	Implemented Mitigation	Residual Effect Magnitude	Scale of Residual Effect
				excavations left uncovered overnight.		
	Riparian Mammals	Moderate	Possible disturbance to or destruction of Water Vole burrows if Water Voles use the site for dispersal	Updated survey prior to commencement of works followed by EPSL if required	Minor Impact	Local
			Pollution incidents with hazardous materials	Refer to CEMP		
	Invertebrates	Moderate	Habitat Loss	Replacement planting of species-rich grassland, scrub, hedgerows and native trees	Minor negative impact	Local
	Priority Habitats	High	Habitat Loss (wet woodland)	Retention of the majority of habitat in combination with additional woodland planting	Minor Impact	Local
Operation	Designated sites/supporting features/qualifying features	Very High	Increased visitor pressure		Neutral impact	
	Bats	Moderate	Disruption of bat commuting/foraging routes through the site via habitat loss	Dark corridors	Minor negative impact (light pollution)	Local

Phase	Resource or Receptor affected	Value or Sensitivity Significance of Receptor	Activity or Impact	Implemented Mitigation	Residual Effect Magnitude	Scale of Residual Effect
			and the introduction of artificial lighting			

7.11 Cumulative Effects

7.11.1 This chapter includes consideration of the likely significant effects resulting from the cumulation of effects of two or more proposed developments (one being the proposed development), taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.

7.11.2 The ES has given consideration to 'Cumulative 'Effects' for schemes located within 1 km radius from the boundary of the Site.

7.11.3 Table 3.7 and Table 7.1 list the approved developments within the vicinity of the proposed development including current planning application for the mixed-use development for 1,250 dwellings on land at BEW Parcel SC1 (ADC ref. BN/11/22/OUT).

7.11.4 Please note, the below conclusions assume the nearby developments, as part of the requirements for the planning process, will appropriately mitigate for any impacts identified resulting from the schemes following available best practice guidance.

7.11.5 Land at former Eastergate fruit farm, Eastergate (EG/71/14/OUT)

7.11.5.1 Land at former Eastergate fruit farm, Eastergate is located to the northeast of the site.

7.11.5.2 The scheme involves an outline application for the erection of 60 residential dwellings with new vehicular access, open space & other ancillary works.

7.11.5.3 The effects following the implementation of mitigation upon the designated sites (SPA, SSSI, SAC), non-designated sites, species (reptiles, badgers, bats, birds) and habitats are considered to be negligible. With regards to habitat loss (birds, badgers, bats, reptiles), the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.

7.11.5.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.

7.11.6 Land south and west of Barnside and east of pond, Hook Lane (AL/33/19/RES)

7.11.6.1 Land south and west of Barnside and east of pond, Hook Lane is located to the west of the site.

7.11.6.2 The scheme involves the approval of reserved matters following the consent of AL/8/16/OUT (APP/C3810/W/16/3155330) for the erection of 14 No. dwellings with associated access, parking, landscape & open space.

- 7.11.6.3 As no ecological constraints were identified, the effects following the implementation of mitigation upon the designated sites, non-designated sites, protected species and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.
- 7.11.6.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.
- 7.11.7 Land at Nyton Rd, & Northfields Lane, Westergate & land off Fontwell Lane, Eastergate (AL/102/17/RES)**
- 7.11.7.1 Land at Nyton Rd, & Northfields Lane, Westergate & land off Fontwell Lane, Eastergate is located to the northwest of the site.
- 7.11.7.2 The scheme involves an application for approval of Reserved Matters following outline application AL/61/13/ for the demolition of existing glasshouses, bungalow, stables & outbuildings & residential development of 268 dwellings incl 30% affordable housing (incorporating 60 senior living units) with associated access, public open space & landscaping.
- 7.11.7.3 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species and habitats are considered to be negligible. With regards to habitat loss (birds, badgers, bats, reptiles), the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.
- 7.11.7.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.
- 7.11.8 Wings Nursey, Lidsey Road, Woodgate, PO20 3SU (AL/32/19/OUT)**
- 7.11.8.1 Wings Nursey, Lidsey Road, Woodgate, PO20 3SU is located to the south of the site.
- 7.11.8.2 The scheme involves an outline application with some matters reserved for the erection of 55 No. dwellings, access arrangements, sustainable drainage measures, public open space, landscaping & all other associated works (resubmission following AL/115/17/OUT).
- 7.11.8.3 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species (barn owls, reptiles, bats) and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.
- 7.11.8.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.

7.11.9 Land North of Lee's Yard, Lidsey Road, Woodgate, PO20 3SU (AL/21/20/OUT)

- 7.11.9.1 Land North of Lee's Yard, Lidsey Road, Woodgate, PO20 3SU is located to the south of the site.
- 7.11.9.2 The scheme involves outline application with some matters reserved for the erection of 38 No. dwellings consisting of 5 No. 4-bed house, 14 No. 3-bed houses & 19 No. 2-bed houses, with communal work hub & associated car parking & landscaping (resubmission following AL/57/18/OUT).
- 7.11.9.3 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.
- 7.11.9.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.

7.11.10 Land west of Fontwell Avenue, Fontwell Avenue, Eastergate (BN/50/20/PL)

- 7.11.10.1 Land west of Fontwell Avenue, Fontwell Avenue, Eastergate is located to the northeast of the site.
- 7.11.10.2 The scheme involves demolition of existing structures on-site & erection of 42 No. dwellings with access, parking, landscaping & associated works.
- 7.11.10.3 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.
- 7.11.10.4 With the implementation of mitigation measures as described no cumulative effects are considered likely.

7.11.11 Land south of Barnham Station, Barnham (BN/142/20/OUT)

- 7.11.11.1 This planning application is currently under appeal following refusal on non-ecological grounds.
- 7.11.11.2 Land south of Barnham Station, Barnham is located to the east of the site.
- 7.11.11.3 The scheme involves an outline planning application with all matters reserved, other than principal means of access, for up to 200 No. dwellings, with access taken from Marshall Close, associated infrastructure & landscaping & demolition of existing buildings.
- 7.11.11.4 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable

habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.

7.11.11.5 With the implementation of mitigation measures as described no cumulative effects are considered likely.

7.11.12 Barnham, Eastergate, Westergate BEW Parcel SC1 Barnham (BN/11/22/OUT)

7.11.12.1 The site falls within the wider allocated site of Barnham, Eastergate, Westergate BEW Parcel SC1 Barnham.

7.11.12.2 The scheme involves Outline application with all matters reserved (except for the A29 Realignment) for the demolition of existing structures and mixed use development to provide up to 1,250 residential dwellings (Use Class C3), Care Home/Senior Living Accommodation (Use Class C2/C3), flexible retail and community floorspace (Use Classes E/F2/Sui Generis), a Primary School plus open space, landscaping, drainage and all other associated ancillary works; and realignment of the A29 and early connection to existing A29 including construction of a new road carriageway, junctions and associated infrastructure.

7.11.12.3 The effects following the implementation of mitigation upon the designated sites, non-designated sites, species and habitats are considered to be negligible. With regards to habitat loss, the retention of suitable habitat where feasible, as well as enhancement of existing habitats and creation of a landscape strategy to create a biodiverse site, the effects are also considered to be negligible.

7.12 Summary

7.12.1 Ecosupport Ltd was instructed by Cala Homes to undertake an updated Preliminary Ecological Appraisal (PEA) of land east of Westergate, Chichester, PO20 3QR. This was required in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Data request submitted to the Sussex Biodiversity Records Centre (SxBRC)
- Habitat survey assigning UK Hab types
- Preliminary Roost Assessment (PRA) of trees on site

7.12.2 The following important ecological features were identified on site following the conclusion of the above survey work and may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- Confirmed presence of foraging and commuting bats (including Barbastelles (*Barbastella barbastellus*) and Bechstein's Bat (*Myotis bechsteinii*))
- A Common Pipistrelle (*Pipistrellus pipistrellus*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*) summer day roost within one retained tree
- Confirmed low populations of Slow Worms (*Anguis fragilis*) and Common Lizards (*Zootoca vivipara*)

- High potential for foraging and commuting Badgers
- Confirmed presence of Birds of Conservation Concern (BoCC)
- Moderate – high potential for Hedgehogs
- Low potential for riparian mammals

7.12.3 In the absence of any mitigation measures, the proposed development is anticipated to result in certain adverse effects, including:

- Moderate adverse impact to habitats through habitat loss and damage via construction activities
- Major adverse impact to bats of regional value through habitat loss, light pollution
- Moderate negative impacts to reptiles from habitat loss
- Major negative impacts to nocturnal mammals from increased lighting
- Adverse impact to nesting and breeding birds from habitat loss
- Significant adverse Impact to Water Voles through habitat loss and potential pollution incidents
- Minor negative impact to invertebrates from habitat loss

7.12.4 Suitable avoidance and mitigation measures have been outlined within this chapter and it is considered by following these the Proposed Development will unlikely have a residual impact. Mitigation measures outlined within the document include the following:

- Retention of habitats on site
- Dark corridors for bats
- Lighting strategy for bats
- Reptile mitigation strategy
- Precautionary measures for nesting and breeding birds
- Tree protection fencing
- Mitigation for recreational impacts to the Solent SPAs

7.13 References

7.13.1 Below are list of relevant ecological references:

- ARG (2010) Amphibian & Reptile Groups of the UK, ARG Advice Note 5, Great Crested Newt Habitat Suitability Index, May 2010
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- Bat Conservation Trust (BCT) and Institute of Lighting Professionals (ILP) (2023) Bats and Artificial Lighting at night
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- Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). UK Habitat Classification – Habitat Definitions V1.1 at <http://ukhab.org>
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK & Ireland
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- Edgar, P., Foster, J., & Baker, J., (2010) Reptile Management Handbook, Amphibian and Reptile Conservation (ARC)
- ECOSA Ltd. (2017) 'Land at Westergate, Chichester, West Sussex – Ecological Assessment' (Report reference: 1888.F1) (February 2017)
- HMSO (2000). The Countryside and Rights of Way Act 2000. HMSO, London. HMSO (1981). The Wildlife & Countryside Act 1981. HMSO, London.
- Langton, T., Beckett, C., & Foster, J., (2001) Great Crested Newt Conservation Handbook, Froglife
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- Natural England, 2011 Badgers and Development: A Guide to Best Practice and Licensing
- Wray S, Wells D, Long E, Mitchell-Jones T (December 2010) Valuing Bats in Ecological Impact Assessment, IEEM In-Practice p 23-25
- UKHab Ltd. (2020). UK Habitat Classification – Habitat Definitions Version 1.1 (September 2020).

