

7 Biodiversity

7.1 Introduction

- 7.1.1 This chapter of the ES assesses the likely significant effects of the Proposed Development on the environment in respect of Ecology and Biodiversity.
- 7.1.2 The chapter has been prepared by Derek Finnie Associates Ltd whom, as required by the 2017 EIA Regulations (as amended), holds the required professional accreditation/competency (see **Appendix 1.2**).
- 7.1.3 This chapter considers Option 2 as the “worst-case”, as the assessment of the effects on off-site ecological receptors are based on the results of the air quality modelling which use traffic data provided for Option 2, as it would demonstrate the highest traffic flows.
- 7.1.4 This chapter is supported by the following appendices:
- Appendix 7.1: Mowbray Employment Land ~ Great Crested Newt Report (Report Ref: DFA250692)
 - Appendix 7.2: Mowbray Employment Land ~ Reptile Survey Report (Report Ref: DFA250693)
 - Appendix 7.3: Mowbray Employment Land ~ Breeding Bird Report (Report Ref: DFA250694)
 - Appendix 7.4: Mowbray Employment Land ~ Bat Survey Report (Report Ref: DFA250695)
 - Appendix 7.5: Phase 1 Habitat Survey Report

7.2 Policy Context

- 7.2.1 The assessment has been prepared with reference to the following national, regional and local planning documents, legislation, and guidance.

International Conventions and Directives

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive);
- Council Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive);
- The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979;
- The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1982; and
- Convention on Biological Diversity 1992.

National Legislation

- The Environment Act 2021;
- The Wildlife and Countryside Act 1981 (WCA);
- The Conservation of Habitats and Species Regulations 2017;
- The Countryside and Rights of Way Act 2000 (CRoW);

- Natural Environment and Rural Communities Act 2006 (NERC);
- The Protection of Badgers Act 1992; and
- The Hedgerow Regulations 1997.

Statutorily Protected Sites

- 7.2.2 Local Nature Reserves (LNRs); National Nature Reserves (NNRs); Sites of Special Scientific Interest (SSSIs); Special Areas of Conservation (SAC); and Special Protection Areas (SPAs) contain examples of some of the most important natural and semi-natural ecosystems in Europe and receive strict protection under United Kingdom (UK) legislation. Although not strictly protected under legislation, Ramsar sites are given the same level of protection through policy.

Non-Statutory Sites

- 7.2.3 Local Planning Authorities (LPAs) designate non-statutory sites of county conservation value; these are known as Sites of Nature Conservation Interest. Such sites are afforded a measure of protection in local development plans.

Protected Species

- 7.2.4 Under the Wildlife and Countryside Act and the Conservation of Habitats and Species Regulations 2017, a number of species, including bats *Chiroptera sp.* and great crested newts *Triturus cristatus* are strictly protected from death, injury or harm; whilst places used for their shelter or rest are protected from damage, disturbance and destruction. Certain species such as some reptiles and birds only receive partial protection under UK legislation, e.g. protection from killing/ injuring only, or protection at certain times of the year only.

Invasive Weeds

- 7.2.5 The WCA 1981 makes it an offence to plant or otherwise cause to grow in the wild numerous species including Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum*.

Non-Statutory Policies

- 7.2.6 The UK Biodiversity Action Plan (UK BAP) was established in response to the global Convention on Biological Diversity, 1992. Individual Action Plans define actions and measures to meet the conservation objectives defined in the strategy and specify measurable targets. They determine the broad habitats and species that are of value to the natural environment of the UK and identify actions and projects that could be undertaken to help protect or enhance the national biodiversity.
- 7.2.7 Local Biodiversity Action Plans (LBAPs) are implemented through planning policy, identifying habitats and species in need of conservation action at the local or regional level. BAPs in the UK have no statutory status but provide a framework for implementing conservation requirements.

National Planning Policy

- 7.2.8 The following objectives relating to biodiversity conservation are considered relevant to this assessment. The National Planning Policy Framework (NPPF) (2025) seeks to:
- Protect and enhance valued landscapes, geological conservation interests and soils;
 - Recognise the wider benefits of ecosystem services;
 - Minimise impacts on biodiversity and provide net gains in biodiversity, where possible, contribute to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

- Prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability;
- Remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land, where appropriate; and
- Prevent the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.

Local Planning Policy

7.2.9 The adopted Horsham District Planning Framework contains the following policies of relevance to the Proposed Development in relation to biodiversity and ecology:

- Policy 27: Environmental Protection
- Policy 25: The Natural Environment and Landscape Character;
- Policy 31: Green Infrastructure and Biodiversity

Assessment Guidance

7.2.10 The assessment was undertaken in line with the latest sectoral guidance produced by the:

- Chartered Institute of Ecology and Environmental Management (CIEEM 2018ⁱ; 2021ⁱⁱ);
- Guidelines for Baseline Ecological Assessment (IEMA 1997ⁱⁱⁱ);
- Natural England's Air pollution and development: advice for local authorities (Natural England, 2025)^{iv}; and
- BS 42020: 2013 Biodiversity – Code of Practice for Planning and Development.^v

7.3 Assessment Methodology

Study Area and Scope

Extent of the Study Area

7.3.1 As part of the assessment, an Extended Phase 1 Habitat Survey (in line with JNCC, 2010^{vi}) (**Appendix 7.5**) was carried out within the entire Site boundary. Further species-specific surveys were also undertaken within the Site and the immediate surrounding area as necessary.

Scope

7.3.2 The predicted impacts of the Proposed Development are commensurate with those identified in the original outline planning permission, apart from potential effects of increased air pollution.

7.3.3 As the predicted impacts are commensurate with the original development, it follows that if the habitat and species assemblage within the Site is also similar to those assessed during the previous development, and the predicted impacts are equivalent, the impacts, can, therefore, be scoped out of the ES. Hence, only comparative assessment of the habitats and species within the Site has been scoped in.

7.3.4 The assessment of the effects of air quality, however, are required to be scoped in.

Assessment Methodology

- 7.3.5 This section presents the methodology used to assess the potential effects of the Proposed Development in relation to Ecology and Biodiversity. Specific reference is made to the CIEEM's advice on ecological impacts of air quality (CIEEM 2023)^{vii}.

Air Quality Assessment

- 7.3.6 The air quality assessment was based on guidance provided by CIEEM and follows as step wise procedure:
- Step 1 – Identifying the Baseline Ecological Features and Air Quality
- 7.3.7 Review of Current Levels of Pollution at the Site from existing data sets, such as those presented by in Air Pollution Information System (APIS).
- Step 2 – Assessing the Confounding Factors, Background Trends and Sensitivity of the Receptor
- 7.3.8 Any confounding circumstances that may influence the effect on ecological features of increased pollutant levels or deposition rates are then considered. Air quality effects are not considered in isolation but within the context of other factors that may have a greater effect on the ability of the site to support its interest features.
- Step 3 – Is the Critical Load or Level exceeded?
- 7.3.9 The Predicted Environmental Concentration (PEC, i.e. the contribution of the plan or project combined with the baseline deposition rate and other plans and projects) is then assessed to determine whether it exceeds the critical level or critical load.
- Step 4 – Apply Critical Loads with Judgement
- 7.3.10 The evidence which has been used to sett of critical loads is variable. This is reflected in the commentaries available on APIS and it is therefore necessary to apply the critical loads or levels assigned to each designated site on APIS with judgement, particularly for a site designated for its fauna, where the effect of air pollution is often indirect.
- Step 5 – Project Duration and Seasonal Effects
- 7.3.11 Consideration is given to whether the project impacts are likely to be long-term or short-term. Critical loads and most critical levels are based on an annual average quantity.
- Step 6 – Relative Importance of Pollutant Concentration vs Deposition
- 7.3.12 Due to its alkaline nature, ammonia has toxic effects on vegetation (particularly lower plants) at low concentrations, separately from its role in nitrogen deposition. Hence, even below the 1% there may be an impact on certain sensitive receptors; this may be considered in the impact assessment.

Impact Areas

Ecological Zone of Influence (EZol)

- 7.3.13 The EZol is an area defined by the assessment in which there may be receptors subject to impact as a result of the construction and operation of the Proposed Development. Such receptors are likely to include designated sites, notable habitats and protected species, and these could be affected directly such as through works affecting a habitat or species receptor within the Site, or indirectly.
- 7.3.14 The EZol was determined through:

- A review of the existing baseline conditions in the context of the Proposed Development design and construction information;
- Consideration of the proposed activities during Site preparation, construction and operation;
- The desk study information including an examination of mapping data;
- Responses from consultees;
- Records of protected species within 2km of the Site boundary;
- Findings of the Site survey work; and
- Through liaison with other specialists involved in assessing the effects for related disciplines, such as lighting and noise.

7.3.15 The EZol is defined as the areas/ resources that may be affected by the biophysical changes caused by activities associated with the Proposed Development.

7.3.16 For the purposes of the assessment, the EZol is considered to be restricted to those areas within the Site boundary, with no significant or measurable off-site effects anticipated. With the possible exception of indirect impacts, such as recreational pressure on Natura 2000 sites. The EZol may differ for different receptors, depending on their sensitivity to potential impacts.

Evaluation of Important Ecological Features

Definition of ecological value

7.3.17 A geographical scale of reference is used when evaluating ecological receptors within a Site, in line with the latest sectoral guidance presented by CIEEM (2018), as summarised in **Table 7.1**. The evaluation categories for each receptor have been reached by applying accepted criteria, such as naturalness, rarity, fragility and diversity, first proposed by Ratcliffe (1977^{viii}) and commonly used in the assessment of both statutory and non-statutory sites.

7.3.18 Where sites have already been designated on ecological grounds, the assessment reflects the geographical context of the designations. For example, sites designated under international legislation or treaties are assessed to be of international value, whilst sites designated under UK legislation are of National value.

7.3.19 Consideration is also given to legal protection afforded to any ecological receptor within the Site, as are species or habitats identified as 'priorities' for biodiversity conservation in the UK. Local Planning Authorities will often have a duty to consider such species or habitats throughout the planning process, hence their presence within a site is a material consideration.

7.3.20 Further frames of reference for individual species are provided by the Red Data Book system, such as the Vascular Plant Red Data List for Great Britain (Cheffings and Farrell 2006^{ix}) or for birds by reference to the Birds of Conservation Concern (Stanbury *et al.* 2021^x).

Table 7.1: Geographical Level of Importance

Level of Importance	Description
International (European)	Habitats An internationally designated Site or candidate Site (SPA, provisional SPA, SAC, candidate SAC, Ramsar Site, Biogenetic / Biosphere Reserve, World Heritage Site or an area that would meet the published selection criteria for designation. A viable area of a habitat type listed in

Level of Importance	Description
	Annex I of the Habitats Directive, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. Species Any regularly occurring population of internationally important species, threatened or rare in the UK (i.e. a UK Red Data Book species) or, of uncertain conservation status or, of global conservation concern. A regularly occurring, nationally significant population/number of an internationally important species.
National	Habitats A nationally designated Site (Site of Special Scientific Interest [SSSI], NNR, MNR or a discrete area), which would meet the published selection criteria for national designation (e.g. SSSI selection guidelines). Species A regularly occurring, regionally or county significant population/number of an internationally/nationally important species. Any regularly occurring population of a nationally important species, threatened or rare in the region or county.
Regional	Habitats Sites that exceed County-level designations but fall short of SSSI selection criteria. Species Any regularly occurring, locally significant population of a species listed as being nationally scarce, which occurs in 16 of 100 10km² squares in the UK. A regularly occurring, locally significant population/ number of a regionally important species. Sites maintaining populations of internationally/nationally important species that are not threatened or rare in the region or county.
Authority Area (e.g. County or District)	Habitats Sites recognised by local authorities, e.g. Sites of Importance for Nature Conservation (SINCs). County/District Sites that the designating authority has determined meet the published ecological selection criteria for designation, including LNR. A diverse and/or ecologically valuable hedgerow network. Semi-natural ancient woodland greater than 0.25ha. Species Any regularly occurring, locally significant population of a considered regional rarity or localisation. Sites supporting populations of internationally/nationally/regionally important species that are not threatened or rare in the region or county, and not integral to maintaining those populations. Sites/features scarce in the County/District or that appreciably enrich the County/District habitat resource.
Local (immediate local area or village importance)	Habitats Areas of habitat that appreciably enrich the local habitat resource (e.g. species-rich hedgerows, ponds etc). Sites that retain other elements of semi-natural vegetation that due to their size, quality or the wide distribution within the local area are not considered for the above classifications. Semi-natural ancient woodland smaller than 0.25 ha. Species

Level of Importance	Description
	Populations/assemblages of species that appreciably enrich the biodiversity resource within the local context. Sites supporting populations of county/district important species that are not threatened or rare in the region or county and are not integral to maintaining those populations.
Site level (Limited ecological importance)	Sites that retain habitats and/or species of limited ecological importance due to their size, species composition or other factors.
Negligible	No, or extremely limited, ecological value.

7.3.21 The assessment of potential effects as a result of the Proposed Development has considered both the construction and operational phases. The significance level attributed to each effect has been based on the CIEEM guidelines. These guidelines have been followed for the assessment criteria as they have been developed by CIEEM to promote good practice in Ecological Impact Assessments and have also been endorsed by the statutory consultees such as Natural England (NE) and the Association of Local Government Ecologists (ALGE).

7.3.22 Once the receptors were assigned a value and the EZoI was defined, the next stage in the assessment was to determine which ecological features or resources in the EZoI were of sufficient value to be included in the assessment and vulnerable to likely significant effects as a result of the Proposed Development.

Magnitude of Impact

7.3.23 The impact assessment has been carried out by comparing the existing conditions on the Site with the construction information and the proposals for the construction and operational stages of the Proposed Development.

7.3.24 The assessment of effects has been undertaken in relation to the current established baseline.

7.3.25 Significant effects have been assessed with reference to the ecological structure and function of the feature in question, for instance the fragility/ stability of an ecosystem and its connectivity to other features or available resources (territory/foraging habitat) for the species.

7.3.26 In line with CIEEM guidance (2018), the following parameters have been referred to in assessing effects on ecological structure and function:

- Positive or negative;
- Magnitude: refers to the 'size' or 'amount' of an impact determined on a quantitative basis e.g. total or partial;
- Extent: the area over which the impact occurs;
- Duration: the period over which the impact is expected to last prior to recovery or replacement of the resource or feature e.g. short-term or long-term;
- Reversibility: whether recovery from the impact is possible or not e.g. irreversible (permanent) impacts or reversible (temporary) impacts; and

7.3.27 To assess the likelihood that a change / activity will occur as predicted and also the degree of confidence in the assessment of the effect on the ecological structure and function; the following confidence levels are used:

- Certain (near-certain): probability estimated at 95% chance or higher;
- Probable: probability estimated above 50% but below 95%;
- Unlikely: probability estimated above 5% but less than 50%; or
- Extremely unlikely: probability estimated at less than 5%.

Effect Significance

7.3.28 In accordance with CIEEM guidelines the effect significance has been assessed at the geographical scale (e.g. impact on a receptor of Local ecological value is assessed as being significant at the Site level). Integrity is taken to be the coherence of ecological structure and function, across its whole area that enables it to sustain the habitats and/or the levels of populations of the species present.

7.3.29 Conservation status is defined as follows:

- Habitats: conservation status is determined by the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area; and
- Species: conservation status is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its population within a geographical area. The value of any feature that will be significantly affected is used to identify the geographical scale at which the effect is significant. The value relates directly to the consequences in terms of legislation, policy and/or development control at the appropriate level.

Residual Effects

7.3.30 Residual effects are assessed taking into account the proposed mitigation, compensation and enhancement measures. The significance of residual effects is assessed as referred to above following implementation of mitigation.

7.3.31 The effects of the Proposed Development are summarised in relation to the following headings:

- Description of feature and ecological value;
- Proposed activity;
- Significance of unmitigated effect;
- Impact on integrity or conservation status and confidence level;
- Mitigation and enhancement; and
- Residual effects and confidence level.

Limitations and Assumptions

7.3.32 The data provided from consultees and databases are based on existing records but do not necessarily constitute a comprehensive list of protected and notable species records. These records are not exhaustive, as there is currently no national or regional policy for systematic data gathering. Therefore, absence of data does not constitute evidence of absence (i.e. it may be that the Site has not previously been surveyed for a certain species). It is also possible that other data exists within this area that have not been made available.

7.3.33 The scope and range of protected species survey has, in some instances, been restricted to the Site boundary. Consequently, an assessment approach has been adopted that proposes the development

of precautionary mitigation measures based on the information available at the time of the assessment.

- 7.3.34 As some of the guidance that underpins the survey methodology has been updated during the extensive survey period, some of the earlier survey work is not in complete compliance with the latest guidance. For example, the Bat Conservation Trust^{xi} guidance was revised in November 2023. However, this does not render the data collected prior to November 2023 meaningless. Nor does it dictate that the surveys need to be repeated in their entirety. The objective of the surveys is to establish the presence and distribution of species within Site; the pre-November 2023 surveys still achieve this.

7.4 Baseline Conditions

Habitats

Phase 1 Habitat Survey

- 7.4.1 The habitats within the Site remain largely unchanged since the previous assessment. The Site comprises several fields delineated by hedgerows. A small stream, Channells Brook, runs along the western boundary.
- 7.4.2 The majority of the fields themselves have been in active arable crop production until late in 2024; the western most fields have developed into a species poor, semi-improved grassland. However, the overall ecological value of these areas is commensurate with the previous assessment.
- 7.4.3 The following Phase 1 habitats were encountered within the Site:
- Modified grassland;
 - Arable, abandoned cereal crops;
 - Other woodland; broad-leaved;
 - Hedges; and
 - Other rivers (non-priority)

Fauna

Great crested newts

- 7.4.4 Great crested newts have been shown to be absent from the surrounding waterbodies (**Appendix 7.1**).

Reptiles

- 7.4.5 Reptiles were not encountered within the Site during surveys in 2025 (**Appendix 7.2**).

Breeding Birds

- 7.4.6 The breeding bird assemblage was found to be commensurate with that previously identified three Species of Principle Importance (SPI) under Section 41 of the NERC Act 2006 - song thrush, skylark and starling – were encountered within the Site, as well as two species on the Red List of BoCC and four on the Amber list (Stanbury *et al* 2021) (**Appendix 7.3**).

Bats

- 7.4.7 Throughout the transect surveys, the Site has been shown to provide foraging and commuting habitat for up to six species of bats. Common pipistrelle, *Pipistrellus pipistrellus* was the most frequently encountered species, followed by soprano pipistrelle *P. pygmaeus*; this is typical for most sites. Noctule, serotine, brown long-eared bat, and Myotis species were also noted. The also recorded Barbastelle bat (**Appendix 7.4**).
- 7.4.8 The field surveys confirm the bat population within the Site is similar to that identified during surveys to inform the original Environmental statement. Overall, the bat assemblage is assessed to be of District value only.

Future Baseline

- 7.5 Future climate changes predictions suggest the Site maybe become slightly wetter during the winter and drier during the summer between 2040 and 2059. However, the magnitude of the predicted variations is such that they are highly unlikely to lead to a significant change in the ecological receptors or value identified within the Site.

7.6 Potential Significant Impacts

Construction

- 7.6.1 Potential significant impacts that may occur as a result of the Proposed Development during the construction phase have been identified as:
- Increase in air pollution affecting off-site protected sites (SSSI)
 - Increase in air pollution affecting off-site receptors (ancient woodlands).

Operational Phase

- 7.6.2 Potential significant impacts that may occur as a result of the Proposed Development during the operational phase have been identified as:
- Increase in air pollution affecting off-site protected sites (SSSI)
 - Increase in air pollution affecting off-site receptors (ancient woodlands).

Primary and Tertiary Mitigation

- 7.6.3 Best practice to avoid, and where necessary mitigation, for construction impacts will be controlled through the implementation of a Construction Environmental Management Plan, which is expected to be conditioned.

7.7 Likely Significant Effects

Construction Phase

Increase in air pollution affecting off-site protected sites (SSSI & LNR)

- 7.7.1 Air quality (AQ) modelling has indicated that the AQ pollution levels are below critical levels during the construction phase of the scheme (See **Chapter 8**) for Buchan Ponds SSSI and Warnham LNR. Therefore there would no significant impact upon these receptors, resulting in a Negligible effect.

Increase in air pollution affecting off-site receptors (ancient woodlands).

- 7.7.2 AQ modelling has indicated that the AQ levels are below critical levels during the construction phase of the scheme (See Chapter 8) upon:

- Sparrow Copse AW,
- Hooks Copse AW,
- Spruce Hill AW,
- Three parcels of unnamed Ancient Woodland

7.7.3 Therefore there would no significant impact upon these receptors, resulting in a Negligible effect.

Operational Phase

Increase in air pollution affecting off-site protected sites (SSSI & LNR)

- 7.7.4 AQ modelling indicates that the critical levels in the vicinity of the Warnham LNR are not exceeded during the operation of the Proposed Development. However, the modelling indicates that the 1% level is exceeded at Buchan Hill Ponds SSSI for nitrogen oxides (NO_x), ammonia (NH₃) and nutrient nitrogen (N), and acid deposition (See **Appendix 8.2**), summarised as:
- Annual-mean NO_x - Buchan Hill Ponds SSSI up to 15m north of the A264 and 10m south of the A264;
 - Annual Mean NH₃ - Buchan Hill Ponds SSSI up to 35m to the north of the A264 and 25m to the south of the A264;
 - Nutrient N Deposition - Buchan Hill Ponds SSSI up to 35m to the north of the A264 and 25m to the south;
 - Acid Deposition - Buchan Hill Ponds SSSI up to 15m to the north of the A264 and 10m to the south.
- 7.7.5 The exceedance of the 1% increase in critical load does not automatically mean there is a significant effect, but that it triggers the need for more detailed assessment of the sensitivity and value of the habitat.
- 7.7.6 The maximum increase in N deposition at the SSSI is within 5m of the road. In absolute terms, the increase is 0.49 kg N/ha/yr against an existing baseline of 23.8kg N/ha/yr, and the critical load is 10 kg N/ha/yr. Although the critical load is already exceeded, and the contribution from the Proposed Development exceeds 1%, a review of APIS sets out that only 8.1% is from road transport, whilst 27.9% is imported from Europe and 20.1% is from livestock. Natural England Commissioned Report 210 (NECR210) *Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance* - shows that habitats that have already been subject to high background nitrogen deposition, such as in this instance, can develop an effective tolerance to the effects of further deposition.
- 7.7.7 The ponds themselves, which are one of the main qualifying features of the SSSI are located approximately 95m from the edge of the carriageway, so are not within the zone of critical load exceedance. Hence, there is unlikely to be a significant impact upon the SSSI or its qualifying features.
- 7.7.8 The areas where the critical loads are exceeded comprises plantation woodland which appears to have been planted when this section of the A246 (Crawley bypass) was constructed in the late 1980s. This has little ecological value and would not be impacted in a detrimental manner as a result of the slight increase in air pollutants. Given the low levels of increase in nitrogen deposition, most noticeable at the edge of the SSSI where background deposition is already high, any effects are likely to be slight and would not alter plant species composition or richness.

Increase in air pollution affecting off-site receptors (ancient woodlands):

- 7.7.9 AQ modelling indicates that the critical levels in the vicinity of all the ancient woodland considered in this assessment will be exceeded during the operation of the Proposed Development. This has the potential to lead to the deterioration in the ecological value of the ancient woodlands in question. However, on review, the woodlands, whilst they may be considered to be ancient in origin are of relatively low ecological value in their own right, having been subject to numerous factors that have already caused a deterioration. Many represent replanted woodland, comprising a high number of non-native coniferous species, whilst others have been subject to high levels of physical disturbance close to the carriageways. Hence, the slight decrease in air quality is highly unlikely to lead to a further deterioration in the condition of the ancient woodlands. Therefore, there would be no significant impact upon these receptors, resulting in a Negligible effect.

7.8 Secondary Mitigation**Construction Phase**

- 7.8.1 There are no significant effects upon receptors, so no further mitigation is required.

Operational Phase

- 7.8.2 There are no significant effects upon receptors, so no further mitigation is required.

7.9 Residual Effects**Construction Phase**

- 7.9.1 Negligible residual effects are predicted as a result of the construction phase of the Proposed Development.

Operational Phase

- 7.9.2 Negligible residual effects are predicted as a result of the operational phase of the Proposed Development.

7.10 Cumulative Effects

- 7.10.1 Cumulative air quality effects are built into the modelling, so are considered inherently throughout. No further cumulative effects are predicted.

Construction Phase

- 7.10.2 No cumulative effects are predicted as a result of the construction phase of the Proposed Development.

Operational Phase

- 7.10.3 No cumulative effects are predicted as a result of the operational phase of the Proposed Development.

7.11 Summary

- 7.11.1 A suite of ecological surveys undertaken across the Site found no significant change in the ecological conditions or value since the previous outline permission was granted. As the predicted impacts of the Proposed Development are commensurate with the previously approved scheme, and the ecological conditions are similar, the findings of the previous ES remain valid. The only exception to this is air quality assessment, which was not considered in the previous ES. A review of the predicted increase in air pollutants as a result of both the construction and operational phases of the Proposed Development concluded there would be no significant effects upon sensitive ecological receptors.

Table 7.2: Table of Significance – Biodiversity

Potential Effect	Nature of Effect (Permanent/ Temporary)	Significance (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)	Mitigation / Enhancement Measures	Geographical Importance*						Residual Effects (Major/Moderate/Minor) (Beneficial/Adverse/ Negligible)	
				I	U	K	E	R	C		L
Construction											
Increase in air pollution affecting off-site protected sites (SSSI & LNR)		Negligible	None								Negligible
Increase in air pollution affecting off-site receptors (ancient woodlands).		Negligible	None								Negligible
Completed Development											
Increase in air pollution affecting off-site protected sites (SSSI & LNR)	Permanent	Negligible	None								Negligible
Increase in air pollution affecting off-site receptors (ancient woodlands).	Permanent	Negligible	None								Negligible
Cumulative Effects											
Construction											
Increase in air pollution affecting off-site protected sites (SSSI & LNR)		Negligible	None								Negligible

Increase in air pollution affecting off-site receptors (ancient woodlands).		Negligible	None								Negligible
<i>Completed Development</i>											
Increase in air pollution affecting off-site protected sites (SSSI & LNR)		Negligible	None								Negligible
Increase in air pollution affecting off-site receptors (ancient woodlands).		Negligible	None								Negligible

*** Geographical Level of Importance**

I = International; UK = United Kingdom; S = Scotland; R = Regional; C = Council; L = Local

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- ⁱ CIEEM (2018) Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland Third Edition. CIEEM, Winchester
- ⁱⁱ CIEEM (2021) Good Practice Guidance for Habitat and Species, Version 3. CIEEM Winchester
- ⁱⁱⁱ Institute of Environmental Management and Assessment's (IEMA) (1997) Guidelines for Baseline Ecological Assessment.
- ^{iv} Natural England (2025). Air pollution and development: advice for local authorities. Available from: <https://www.gov.uk/guidance/air-pollution-and-development-advice-for-local-authorities>
- ^v BSI (2013) BS 42020:2013. Biodiversity: Code of practice for planning and development. Available from: <https://knowledge.bsigroup.com/products/biodiversity-code-of-practice-for-planning-and-development>
- ^{vi} JNCC (1990). Handbook for Phase 1 habitat survey - A technique for environmental audit. Joint Nature Conservation Committee, Peterborough.
- ^{vii} CIEEM (2023) Advice on Ecological Assessment of Air Quality Impacts, Version 2. Chartered Institute of Ecology and Environmental Management. Winchester, UK.
- ^{viii} Ratcliffe. D.R. (1977) A Nature Conservation Review (Volumes 1 & 2). Cambridge University Press
- ^{ix} Cheffings, C.M. & Farrell, L. (Eds), (2005). The Vascular Plant Red Data List for Great Britain. Joint Nature Conservation Committee
- ^x Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747
- ^{xi} Bat Conservation Trust. (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines. Fourth Edition. Bat Conservation Trust, London.